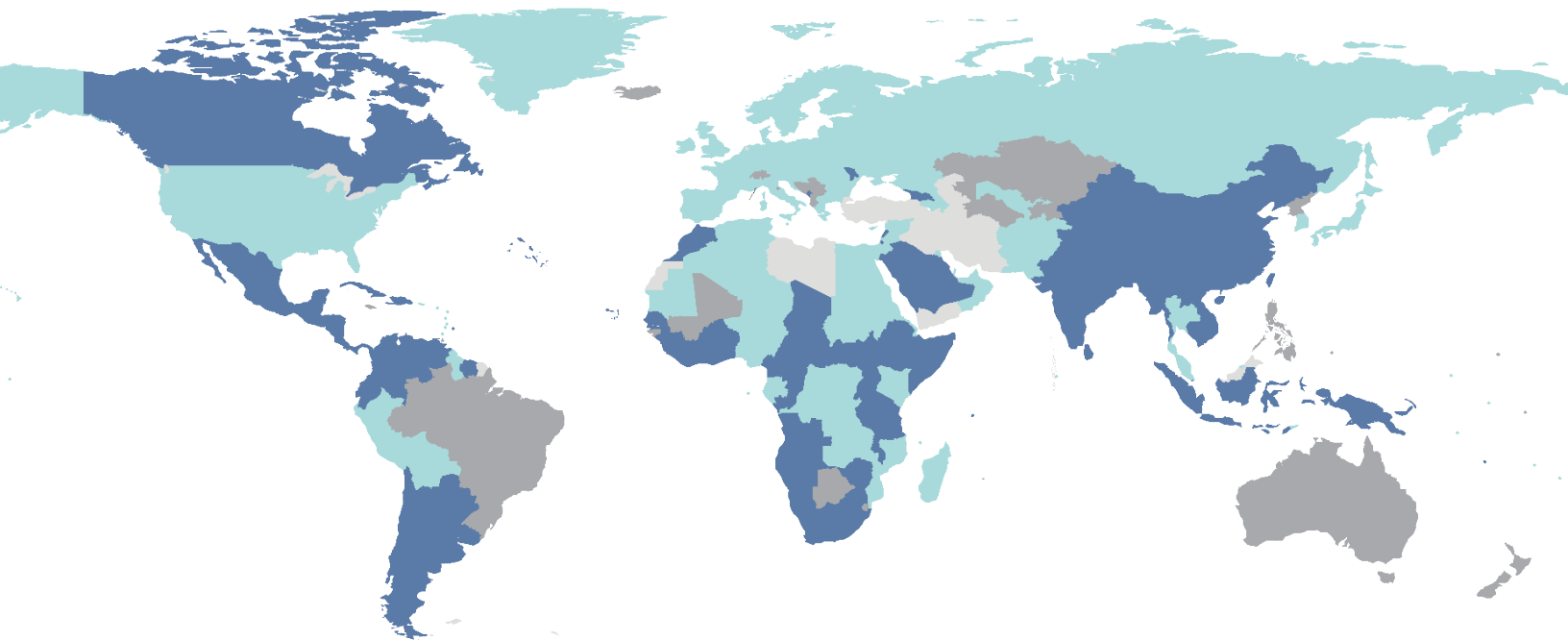


ACCELERATED URBAN CLIMATE ACTION

How do the revised Nationally Determined Contributions
stack up?

A White Paper



ACCELERATED URBAN CLIMATE ACTION

How do the revised Nationally Determined Contributions stack up?

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United Nations Human Settlements Programme (UN-Habitat)

P.O. Box 30030, Nairobi, Kenya

Website: www.unhabitat.org

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Acknowledgements

Coordinator

Bernhard Barth[^]

Authors

Nicola Tollin*, Robert Kehew[^], Vivienne Caballero[^], Gabriella Robba[^], Maria Pizzorni*

Contributors:

Lino Caceres[^], Cerin Kizhakkethottam[^], José Carlos Lozano García*, Amirhosein Heidari*

[^] United Nations Human Settlements Programme UN-Habitat

* University of Southern Denmark SDU

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ACRONYMS AND ABBREVIATIONS

NDC	Nationally Determined Contribution
NAP	National Adaptation Plan
COP	Conference of the Parties
RECNET	Recycling Cities Network
SDU	University of Southern Denmark
UN-Habitat	United Nations Human Settlement Programme
UNFCCC	United Nations Framework Convention on Climate Change

EXECUTIVE SUMMARY

The present White Paper offers a preliminary analysis of the urban content of Nationally Determined Contributions (NDCs) submitted to the Secretariat of the UN Framework Convention on Climate Change (UNFCCC) from March 2017 through the end of September 2021. It also trials an in-depth country level analysis that includes, to a limited extent, related national climate policies.

The urban sector is a fundamental component of climate action, given that urbanized areas account for some 70% of greenhouse gas emissions and are also homes to concentrations of people and assets that may be exposed and vulnerable to the impacts of climate change. Indeed, as momentum gathers for Net Zero or carbon neutrality commitments, which may or may not be captured in the latest round of NDCs, multi-level governance approaches that embrace the urban sector become ever more critical.

The first analysis of the urban content of the NDCs was developed at the end of 2016 and published in 2017 in the report titled “Sustainable Urbanization in the Paris Agreement”. The results of this analysis showed that 113 out of 164 NDCs had urban content, indicating some level of attention to climate challenges and responses at the city level. The report acknowledged that the findings represented a first scan of the subject matter, requiring both a continuity in the analysis of NDCs in time, to monitor trends and progresses in raising ambitions of urban climate actions, and the development of more in-depth analysis at country level, particularly focusing on the integration of urban content in national climate policies, also beyond the NDCs.

Moreover, it was evident that there is a need to expand the analysis at the country level to other climate policies to better understand the identification of climate challenges and responses at the urban level, that may not have been explicitly included in the NDCs; and the need to refine the quantitative and qualitative global analysis, as some NDCs, particularly the ones with moderate urban content, require a better understanding of the actual solidity and consistency of the urban content.

The 2016-17 analysis of the urban content of the NDCs showed that:

- There was widespread recognition of the importance of urban challenges and response measures for climate change mitigation and adaptation, as shown by the high number of NDCs with urban content.
- Most of the NDCs with urban content, specifically those with moderate urban content, required further effort to strengthen and mainstream urban provisions, particularly in relation to urban actions.

This white paper combines a preliminary global analysis of 157 NDCs and a trial of an in-depth country analysis, conducted for the Republic of Colombia, the Republic of the Philippines and the Republic of Rwanda, utilizing both NDCs and other national climate policies. This integrated approach provides an overview of the current status and progress of the urban content of the NDCs globally, and a nuanced understanding of climate challenges in the pilot countries.

The 2021 global analysis of the urban content of the NDCs shows that:

- Over two-thirds of the NDCs analysed have a strong (Cluster A) or moderate (Cluster B) urban content (132 out of 157).
- NDCs with urban content (Cluster A+B) have significantly increased in comparison with 2016 analysis (from 69% in 2016 to 84% in 2021).
- NDCs with strong urban content (Cluster A) have significantly increased in comparison with the 2016 analysis (from 16% in 2016 to 45% in 2021).
- NDCs with combined urban mitigation and adaptation content is high (94 NDCs of 157 analysed).

- NDCs with strong adaptation content (Cluster A) have a very high combined urban mitigation and adaptation content (56 on 70 total).

The 2021 in-depth country analysis in the three pilot countries shows that:

- The urban climate responses are not always aligned with the identified urban climate challenges.
- The urban content in the NDCs is not always fully harmonized with the urban content in other national climate policies.
- The urban content referred to climate mitigation and adaptation, also including the identified sectors, may require further integration for fully exploiting co-benefits.
- The lack of urban content in the NDCs does not necessarily equate with a lack of urban content in other national climate policies.

Overall, the analysis highlights a positive trend in the inclusion of urban content in national policies. However, it is also evident that the current combined global climate efforts are still insufficient to tackle the causes and the effects of the climate crises; cities are crucial for raising the ambition of global climate action and for achieving the goals of the Paris Agreement.

The preliminary global analysis and the in-depth country analysis provide very useful information on the current status and perspective of the inclusion of urban content in the NDCs, and its integration in other climate policies. It is also clear that a more extensive global analysis and a scaling-up of the country analysis is also required for supporting informed policies making in relation to the NDCs and other national climate policies and ultimately strengthening urban climate actions, which are fundamental for the successful implementation of the Paris Agreement.

Based on preliminary findings, the present analysis identifies five key areas with potential to enhance urban action within the NDC cycle of revision and implementation, as follows:

- **Climate ambition:** increase ambition and harness the potential of city-level action with additional emphasis on the rural-urban continuum.
- **Multi-level governance:** strengthen multi-level climate governance structures through horizontal and vertical alignment in the NDC process.
- **Implementation and the role of sub-national actors:** increase collaboration and participatory consultative processes with sub-national level stakeholders.
- **Policy coherence:** strengthen the alignment of NDCs with relevant policies and planning instruments at the national and sub-national level.
- **Maximize how-to resources:** utilize how-to and normative guides, research-based policy analysis, toolkits and case studies.

It is hoped that these in-depth analyses will provide the basis for programmatic discussions with national and local counterparts, as to opportunities for urban sector collaboration when implementing national climate plans and policies, and ultimately to raise ambition for contributing to the successful implementation of the Paris Agreement.

INTRODUCTION

The present White Paper is the result of a collaboration between the United Nations Human Settlement Programme (UN-Habitat) and the University of Southern Denmark (SDU). It offers a preliminary analysis of the urban content of Nationally Determined Contributions (NDCs) submitted to the Secretariat of the UN Framework Convention on Climate Change (UNFCCC) from March 2017 through the end of September 2021. It also trials an in-depth country level analysis that includes, to a limited extent, related national climate policies.

Nationally Determined Contributions (NDCs), the focus of the present analysis, represent the heart of the Paris Agreement¹. Per the Paris Agreement, Parties shall prepare, communicate and maintain successive Nationally Determined Contributions that it intends to achieve (Article 4.2). While the emphasis of NDCs is on mitigation measures (Article 4.2), they may also serve as a means for Parties to communicate needs, plans and actions related to adaptation to climate change (Article 7.10-11).

The Paris Agreement in its preamble recognizes the importance of the engagements of all levels of government and various actors in addressing climate change; this includes local governments and development partners. Furthermore, the Agreement affirms that support shall be provided to developing country Parties in implementing their NDCs (Article 4.5). In the area of climate adaptation, the Agreement recognizes the importance of support for international cooperation (Article 7.6). It particularly notes that United Nations specialized organizations and agencies are encouraged to support the efforts of Parties to implement the actions referred to in the adaptation provisions of the Paris Agreement (Article 7.8).

Moreover, the Conference of the Parties (COP) in Katowice articulated the need to facilitate clarity, transparency and understanding of the NDCs², specifically including human settlements and urban planning as key sectors for reporting specific adaptation projects, measures and activities that contribute to mitigation co-benefits.

The urban sector represents not only the main focus of UN-Habitat's work but also an important area of engagement for a number of other development partners. The urban sector is, in fact, a fundamental component of climate action, given that urbanised areas account for some 70% of greenhouse gas emissions, and are also homes to concentrations of people and assets that may be exposed and vulnerable to the impacts of climate change. Indeed, as momentum gathers for Net Zero or Carbon Neutrality commitments, which may or may not be captured in the latest round of NDCs, multi-level governance approaches that embrace the urban sector, in which local governments typically play a major if not the predominant role in guiding development, become ever more critical.

Per the Paris Agreement, Parties to the UNFCCC should communicate an NDC "every five years" (Article 4.9). Parties submitted their first 'Intended Nationally Determined Contributions' (INDCs) around the time of the adoption of the Paris Agreement - in June 2016, 164 INDCs had been communicated. Around this time, UN-Habitat and Recycling City Network (RECNET) with SDU, the UNESCO Chair on Sustainability at the Technical University of Catalunya and Cologne University of Applied Sciences, together analysed the initial batch of

¹The Paris Agreement is a "legally binding international treaty on climate change adopted by 196 Parties at COP-21 in Paris on 12 December 2015" and which entered into force on 4 November 2016. 'COP-21' was the 21st Conference of Parties to the UNFCCC. See <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

² Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018. Addendum Part two: Action taken by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. FCCC/PA/CMA/2018/3/Add.1

NDCs for their urban content and published their findings.³ The present analysis thus represents a follow-up and a methodological advancement in comparison to the previous analysis.

One lesson learned from the earlier (2016-17) analysis is that a given country may not articulate or even summarize its entire climate change diagnostic or action plan within an NDC. A given NDC may, for example, merely reference or incorporate by reference a small number of other climate laws or policies.⁴ Therefore, an analysis focused exclusively on NDCs may miss some important aspects of a given country's urban climate legal/policy framework. For a more thorough understanding of a given country's plans for climate action in urban areas, a more in-depth analysis is required, not only of its NDC but also of other key climate policies.

For this reason, the present review has two parts, corresponding to two related objectives:

- A preliminary *global review* of *all* new or updated NDCs submitted during the study period, to understand trends in the urban content of NDCs since Parties submitted the first batch of NDCs around the time of the Paris Agreement.
- A trial of an *in-depth country review* of the most relevant climate laws and policies, including but not limited to NDCs, for *selected* countries to further understand the perceived challenges as well as programmatic approaches planned for taking climate action in urban areas.

It is hoped that the latter, more in-depth country reviews, undertaken initially in the Republic of Colombia, the Republic of the Philippines, and the Republic of Rwanda, may serve as a basis for discussions between development partners and counterparts in those countries as to programmatic opportunities for collaboration on urban climate action. Note that both parts of the present review, both global and country-level, are based entirely upon countries' self-diagnosis. There is no attempt to independently assess challenges and opportunities for climate action in urban areas (though such attempt could certainly be undertaken). Details of the methodologies employed for the two related reviews are provided below.

The present White Paper, developed on the eve of COP-26 in Glasgow, Scotland,⁵ will offer UN-Habitat and SDU a chance to discuss the methodology adopted and initial findings with Parties, partners, and the broader climate community. In addition, it will give partners a chance to offer suggestions on that methodology and plans for further development and completion of the analysis (a final publication based on updated findings, including analysis of additional NDCs and policies, is planned for 2022). UN-Habitat and SDU also wish to discuss the eventual dissemination and collaborative use of the completed findings with partners.

Following the present Introduction, Section (1) proceeds with a summary of the methodology and approach, Section (2) offers a global level review of the current NDCs' urban content. Section (3) then analyses three country NDCs as well as other national climate change policies that complement them. Finally, as described above, the country analysis seeks to provide a more accurate representation of the urban content in national climate change policies and strategies and lay the foundation for conclusions and way forward in Section (4).

³ UN-Habitat, 'Sustainable Urbanization in the Paris Agreement', *UN-Habitat - A Better Urban Future*, 2020, <https://unhabitat.org/sustainable-urbanization-in-the-paris-agreement> (accessed 4 November 2021).

⁴ Indeed, other types of climate policies such as National Adaptation Plans (NAPs) and Nationally Appropriate Mitigation Actions (NAMAs) have emerged from the UNFCCC negotiation process. The NAP is explicitly referenced in the Paris Agreement; see Article 7.9(b).

⁵ The 26th Conference of Parties to the UNFCCC.

APPROACH AND METHODOLOGY

The White Paper combines a preliminary global analysis on a total of 157 NDCs, and an in-depth country analysis, conducted for the Republic of Colombia, the Republic of the Philippines and the Republic of Rwanda, utilizing common and differentiated methodologies. This integrated approach provides an overview of the current status and progress of the urban content of the NDCs globally, and a nuanced understanding of climate challenges and responses in the pilot countries.

The following key definitions are used for the review:

Strong urban content (Cluster A)

It indicates NDCs with urban mentions within text headers/sections/paragraphs.

Moderate urban content (Cluster B)

It indicates NDCs with urban mention within the body of text.

No urban content (Cluster C)

It indicates NDCs with no urban mention within the text.

Explicit/direct urban content

It indicates an explicit mention of urban adaptation or mitigation challenges or responses, e.g.:

- high levels of GHG emissions are caused by urban transport (urban mitigation challenge)
- action for flood protection in urban areas (urban adaptation response)

Implicit/indirect urban content

It indicates an implicit mention of urban adaptation or mitigation challenges or responses, e.g.:

- establishing monetary incentives for electric mobility (urban mitigation response)

In the case of a highly urbanized country this type of action is implicitly referring/affecting urban mobility and transport

- coastal areas are vulnerable to sea-level rise (urban adaptation challenge)

In the case of a country with an urban population concentrated in coastal areas, this type of challenge is considered implicitly affecting urban areas.

References to other national policies and/or communications outside the NDCs and/or the specific policy analysed are NOT considered as implicit/indirect urban content references.

Urban Challenges

It indicates any explicit or implicit challenge for urban adaptation or mitigation.

Urban Responses

It indicates any explicit or implicit response measure (policy, strategy or action) to tackle urban adaptation or mitigation challenges.

METHODOLOGY FOR PRELIMINARY GLOBAL ANALYSIS

The preliminary global analysis of the urban content of the NDCs utilizes the same methodology, structure and approach, with few improvements, of the first analysis conducted and published in 2016-17. This preliminary global analysis is limited to the review of the general urban content and the specific urban adaptation and mitigation content of the NDCs, and it does not include a complete review of the full set of indicators developed for the 2016-17 analysis (Annex 1), which will be part of the planned full review.

For this white paper, a total of 157 NDCs (Annex 2) were analysed, including the latest versions of all updated NDCs submitted between March 2017 and the end of September 2021, which are publicly available in the UNFCCC's online depository.⁶ The NDCs were analysed in their English translation, if available, or in other official languages of the United Nations.

This preliminary global analysis is semi-quantitative, as it is limited to a word search of urban related keywords (Figure 1), and it does not include a full reading and a complete textual analysis of the NDCs, which was realized in 2016-17, and which will be part of the planned full review.

Language	Word 1	Word 2	Word 3	Word 4	Word 5
Arabic	-	-	-	-	-
Chinese	-	-	-	-	-
English	Urban* (Incl. suburban, urbans, urbanized, urbanised, etc.)	Town*	City/Cities	Settlement* (Incl. Settlements, human settlements, informal settlements, etc.)	Municipal* (Incl. Municipality, municipalities, etc.)
French	Urbain*	Ville/Metropole	Cité	Agglomération Etablissements	Municip* (Incl. Municipalité, municipale, municpaux, etc.)
Russian	-	-	-	-	-
Spanish	Urbano* (Incl. Zonas urbanas, áreas urbanas, etc.)	Pueblo* (Incl. Poblado, etc.)	Ciudad*	Asentamiento	Ayuntamiento/ Municipio* (incl. Municipal, etc.)

Figure 1 - List of urban-related words used for the keyword search

The first part of the analysis was conducted, following the keyword search, by clustering the NDCs as following:

Cluster A (Strong urban content): NDCs with urban mentions within text headers/sections/paragraphs.

Cluster B (moderate urban content): NDCs with urban mention within the body of text.

Cluster C (no evident urban content): NDCs with no urban mention within the text.

⁶ <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>

The second part of the analysis was done by reviewing the relation of urban keywords with mitigation and adaptation content, in general terms and not differentiating between mitigation/adaptation challenges and response measures, as it was done for the 2016-17 review, and which will be part of the planned full review.

This preliminary analysis aims to provide an initial overview of the current urban content of NDCs, and trends in comparison with the 2016-17 analysis. However, it is important to note that, given the limitations outlined above, this analysis may include some false positives that will be amended through the planned full review.

This analysis only accounted for one NDC for the European Union, representative of 27 of 27 member States, which also individually submitted the same NDCs.

METHODOLOGY FOR COUNTRY ANALYSIS

The methodology for the country-level analysis builds on the approach taken for the global analysis, with some important modifications, as follows. Firstly, as noted above, the country-level analysis focuses on a given country's NDC and other key climate policies. Here the focus is on approved, current policies. These additional policies may or may not be explicitly referenced in the NDC. Typically, a review was performed of additional climate policy complementing the climate challenges faced or the actions planned (particularly in the urban sector), in the country in question, offered by the NDC. Where two climate policies offered a similar level of detail, but one was more recent, focus of the review went to the more recent policy.

Secondly, the in-depth country review looks for evidence of climate challenges or planned actions in a series of urban subsectors. Those sub-sectors include but are not limited to the following:

Urban sub-sectors – Mitigation	Urban sub-sectors – Adaptation
Transports	Floods
Water	Droughts
Energy	Sea level rise
Buildings	Extreme weather events
Waste	Temperature rise
Food security	Heatwaves and urban heat islands
Land use and planning	Vector-borne diseases
Industry	Land degradation
Other	Saltwater intrusion
	Informal settlement
	Building stocks
	Infrastructure

	Nature-Based Solutions (NBS) and ecosystem services Planning and design Disaster risk reduction Social inclusion and gender Other
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Figure 2 - Urban mitigation and adaptation sectors used for the NDCs' analysis, 2021

Thirdly, the in-depth country review relies on a careful textual review by urban analysts. These reviews were either carried out in-country or reviewed by in-country colleagues (with counterpart consultation as time allowed) before being finalized. The three countries chosen for the pilot in-depth analyses (as noted above Colombia, the Philippines, and Rwanda) were selected with that criterion in mind: the availability of in-country colleagues who have worked on urban climate action in those locales to support the process.

Fourthly, while the keywords used in the global analysis were also used for the in-depth country reviews, at times, this list of urban keywords was broadened. This was sanctioned if a careful review of the legal/regulatory framework was related or synonymous with 'urban' words or concepts. In certain countries, words such as 'local government' or 'district', not used in the global analysis, may indicate urban content in the same way and to the same degree that 'municipal' does. 'Metropolitan' is also a relevant term used for associated local governments in some larger conurbations. Finally, at times, for a given urban sub-sector, knowledge based on legal/regulatory review as to whether a given service has been assigned to the local government sector or had been retained at a higher level of government came into play in the analysis of urban content, as did the related phrase 'decentralized local services' or similar. Typically, a footnote was added of such a local assignment of responsibilities when relevant to the in-depth analysis of urban content.

The in-depth country review of climate policies for urban content resulted in the identification of relevant excerpts from the policies reviewed. These excerpts shed light on the climate challenges anticipated (or already experienced) in the country in question, as well as the programmatic approaches planned in the urban sector. To keep the document as succinct as possible, the excerpts cited were not exhaustive: certain concepts repeat in more than one policy or passage.

The in-depth country analyses for the three pilot countries – the Republic of Colombia, the Republic of the Philippines, and the Republic of Rwanda -- are presented in Section 3 below. This section includes a graphic summary of the in-depth country analysis with illustrative policy excerpts followed by policy excerpts for all of the relevant urban-sub-sectors. It is hoped that these in-depth analyses will provide a basis for programmatic discussions with national and local counterparts as to opportunities for urban sector collaboration when implementing national climate plans.

URBAN CONTENT OF NDCs AT GLOBAL LEVEL

URBAN CONTENT OF NDCS: THE 2016 ANALYSIS

The first analysis of the urban content of the NDCs was developed at the end of 2016 and published in 2017 in the report titled “Sustainable Urbanization in the Paris Agreement”. The results of this analysis showed that 113 out of 164 NDCs had urban content, indicating some level of attention to climate challenges and responses at the city level. The report acknowledged that the findings represented only a first scan of the subject matter, requiring both a continuity in the analysis of NDCs in time, to monitor trends and progresses in raising ambitions of urban climate actions, and the development of more in-depth analysis at country level, particularly focusing on the integration of urban content in national climate policies, within and beyond the NDCs.

Moreover, it was evident that there is a need to expand the analysis at country level to other climate policies, to better understand the identification of climate challenges and responses at urban level, that may have not been explicitly included in the NDCs. There is also a need to refine the quantitative and qualitative global analysis, as some NDCs, particularly the one with moderate urban content, require a better understanding of the actual solidity and consistency of the urban content.

The first analysis of the urban content of the NDCs highlighted two main aspects:

- firstly, there was widespread recognition and the importance of urban challenges and response measures for climate change mitigation and adaptation, as shown by the high number of NDCs with urban content;
- secondly, most of the NDCs with urban content, specifically the ones with moderate urban content (Cluster B), required further effort to strengthen and to mainstream urban provisions, particularly in relation to urban actions.

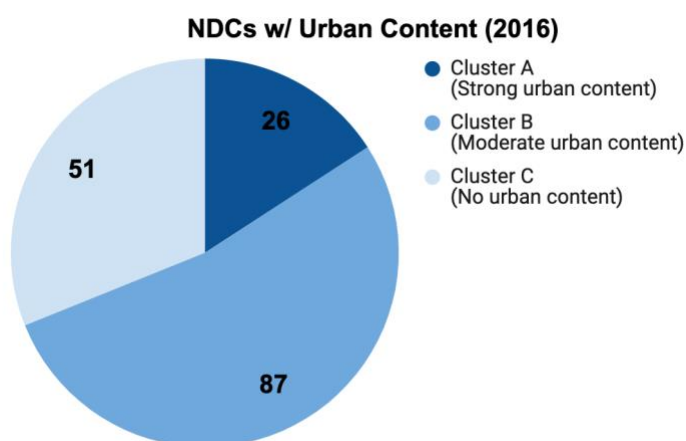


Figure 3 - Global analysis of the NDCs' urban content (2016)

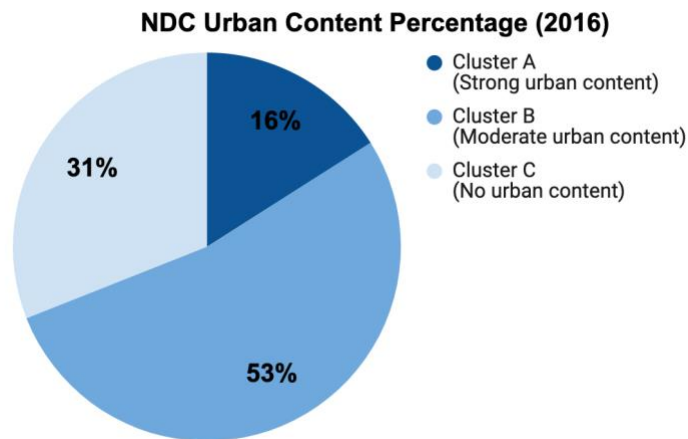


Figure 4 - Global analysis of the NDCs' urban content (2016), percentage

The report included recommendations for: strengthening policies, supporting implementation and realizing further research.

The report recommended strengthening climate policy coherence in a multi-level governance perspective, through horizontal integration of NDCs and other urban and climate policies at the national level and through vertical integration of national policies and local actions; particularly by ensuring the alignment and harmonization of policies and actions in the frame of other international agendas, such as: the Agenda 2030 for Sustainable Developments, the New Urban Agenda, and the Sendai Framework for Disaster Risk Reduction.

The report proposed specific recommendations for the implementation of national strategies at the local level, considered as a critical aspect for the successful implementation of the Paris Agreement, and for explicitly mapping and state finance, technology and institutional capacities needs within the NDCs.

URBAN CONTENT OF NDCs: THE 2021 PRELIMINARY GLOBAL ANALYSIS

For this review, a total of 157 NDCs (Annex 2) were analysed, including the latest version of all updated NDCs submitted between March 2017 and the end of September 2021, which are publicly available in the UNFCCC's online depository.

URBAN CONTENT: 2021 GLOBAL ANALYSIS

The analysis shows that:

- 132 NDCs (84% of the total analysed) have urban content (Cluster A+B), with explicit urban mentions.
- 70 NDCs (45% of the total analysed) have a strong urban content (Cluster A), with mentions of urban terms within dedicated text headers/sections/paragraphs.
- 62 NDCs (39% of the total analysed) have a moderate urban content (Cluster B), with urban mention within the body of text.
- 25 NDCs (16% of the total analysed) have no urban content, with no urban mentions within the body of text.

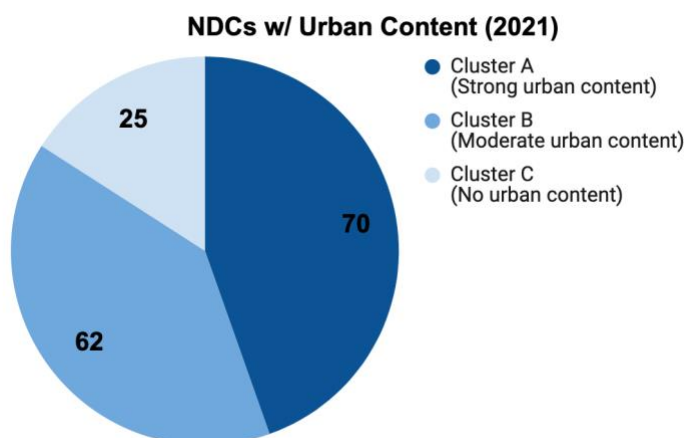


Figure 5 - Global analysis of the NDCs' urban content 2021

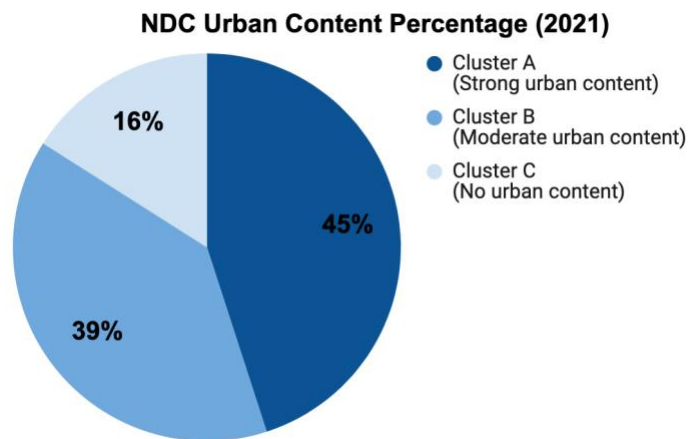


Figure 6 - Global analysis of the NDCs' urban content (2021), percentage

URBAN CONTENT TRENDS: COMPARING 2016 AND 2021 ANALYSES

The analysis shows positive trends:

- an overall significant increase of the share of NDCs with urban content (Cluster A+B), from 69% in 2016 to 84% in 2021.
- a very significant increase of the share of NDCs with strong urban content (Cluster A), from 16% in 2016 to 45% in 2021.
- a significant reduction of the share of NDCs with no urban content (Cluster C), from 31% in 2016 to 16% in 2021.
- a partial decrease of the share of NDCs with moderate urban content (Cluster B), from 53% in 2016 to 39% in 2021, as they are now part of Cluster A.

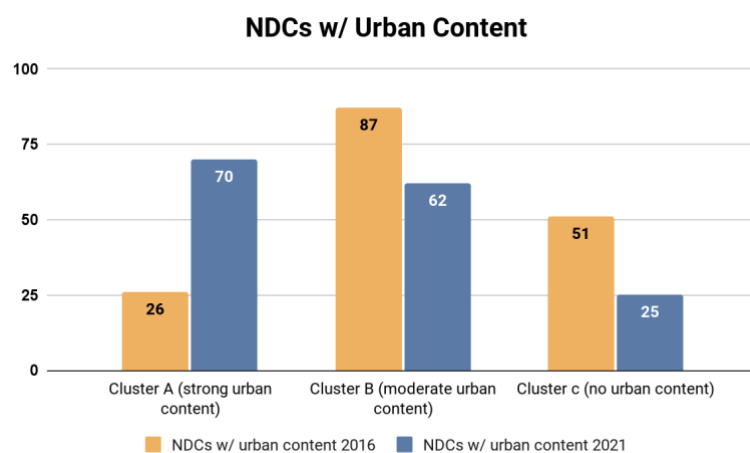


Figure 7 - Global analysis of the NDCs' urban content (2021), percentage

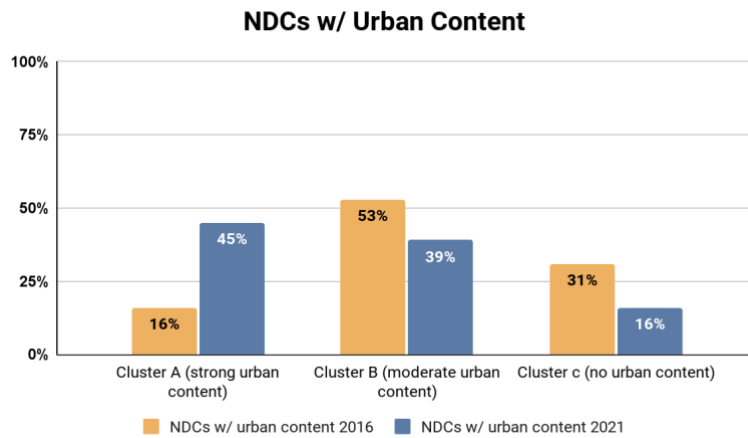


Figure 8 - Urban content trends: comparing 2016 and 2021 analyses of the NDCs, percentage

URBAN MITIGATION AND ADAPTATION CONTENT: 2021 GLOBAL ANALYSIS

The analysis shows that:

- 26 NDCs (17% of the total analysed) focus on urban adaptation.
- 12 NDCs (8% of the total analysed) focus on urban mitigation.
- 94 NDCs (60% of the total analysed) focus on urban adaptation and mitigation.
- 25 NDCs (15% of the total analysed) have no urban mitigation or adaptation content.

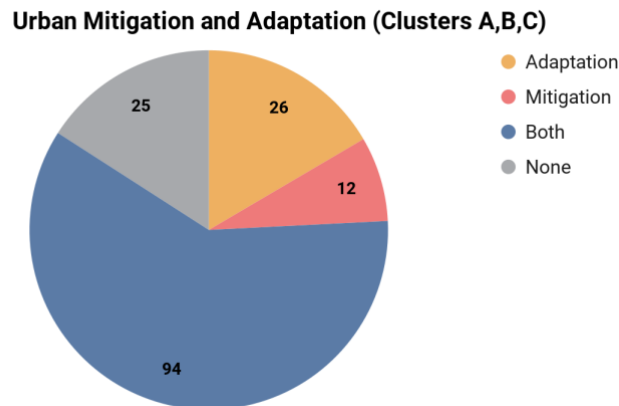


Figure 9 - Urban Mitigation and Adaptation (Cluster A + B + C), 2021

Urban Mitigation and Adaptation (Clusters A,B,C)

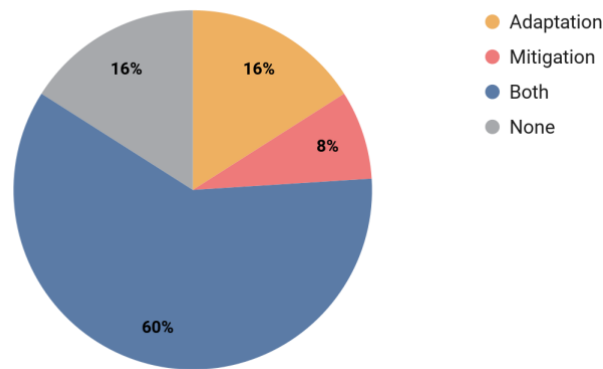


Figure 10 - Urban Mitigation and Adaptation (Cluster A + B + C), 2021, percentage

The analysis of the NDCs with strong urban content (Cluster A) shows that:

- 56 NDCs have urban mitigation and adaptation content (42% of Cluster A+B).
- 4 NDCs have only urban mitigation content (3% of Cluster A+B).
- 10 NDCs have only adaptation content (8% of Cluster A+B).

The analysis of the NDCs with moderate urban content (Cluster B) shows that:

- 38 NDCs have urban mitigation and adaptation content (29% of Cluster A+B).
- 8 NDCs have only urban mitigation content (6% of Cluster A+B).
- 16 NDCs have only urban adaptation content (12% of Cluster A+B).

KEY FINDINGS

The key findings of the preliminary global analysis of the urban content of the NDCs are:

- Over two-thirds of the NDCs analysed have a strong or moderate urban content (132 out of 157).
- NDCs with urban content (Cluster A+B) have significantly increased in comparison with the 2016 analysis (from 69% in 2016 to 84% in 2021).
- NDCs with strong urban content (Cluster A) have significantly increased in comparison with the 2016 analysis (from 16% in 2016 to 45% in 2021).
- NDCs with combined urban mitigation and adaptation content is high (94 NDCs on 157 analysed).
- NDCs with strong adaptation content (Cluster A) have a very high combined urban mitigation and adaptation content (56 on 70 total in Cluster A).

MAPS OF THE URBAN CONTENT

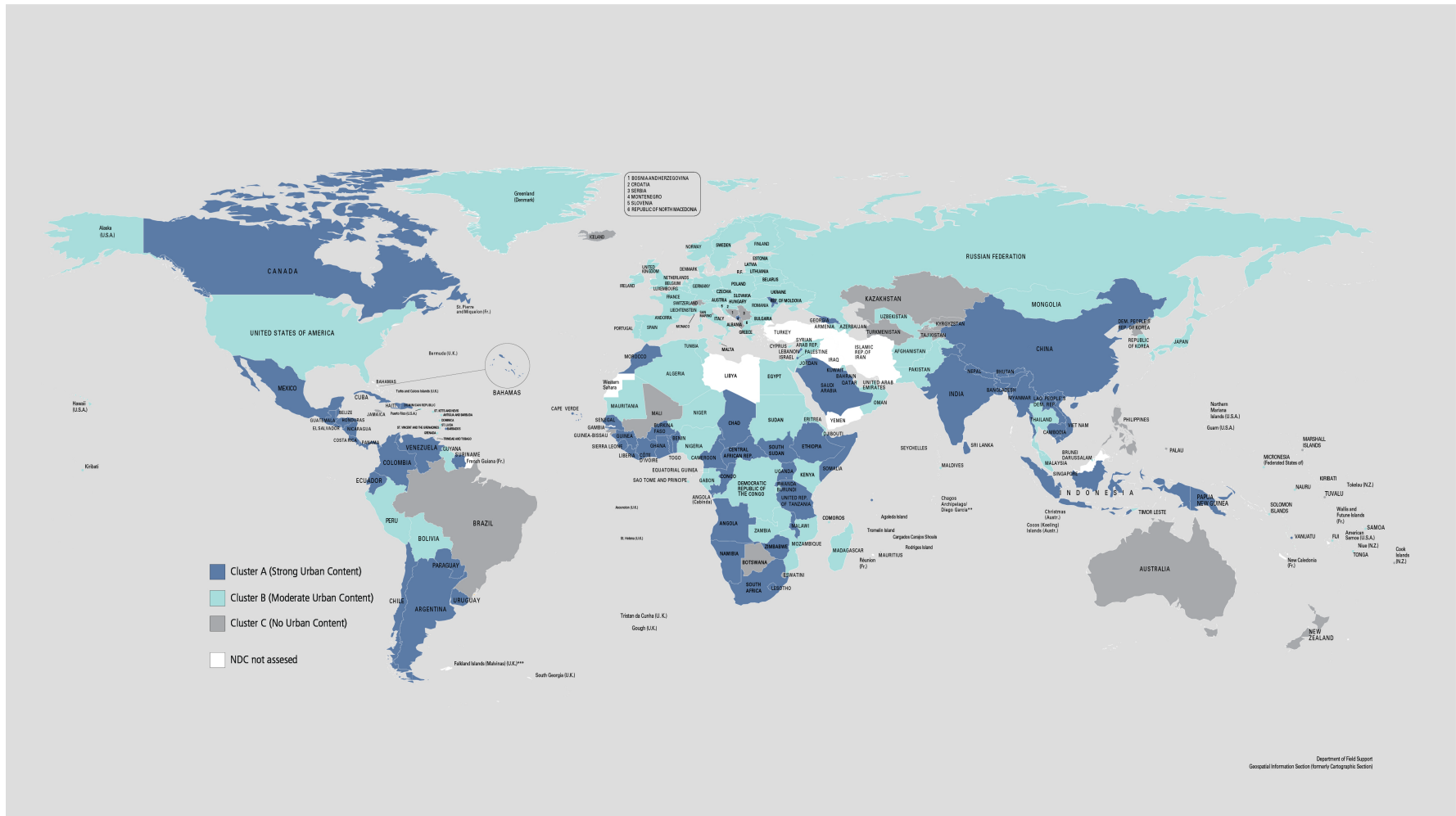


Figure 11 - Map of Urban Content, Cluster A, B and C

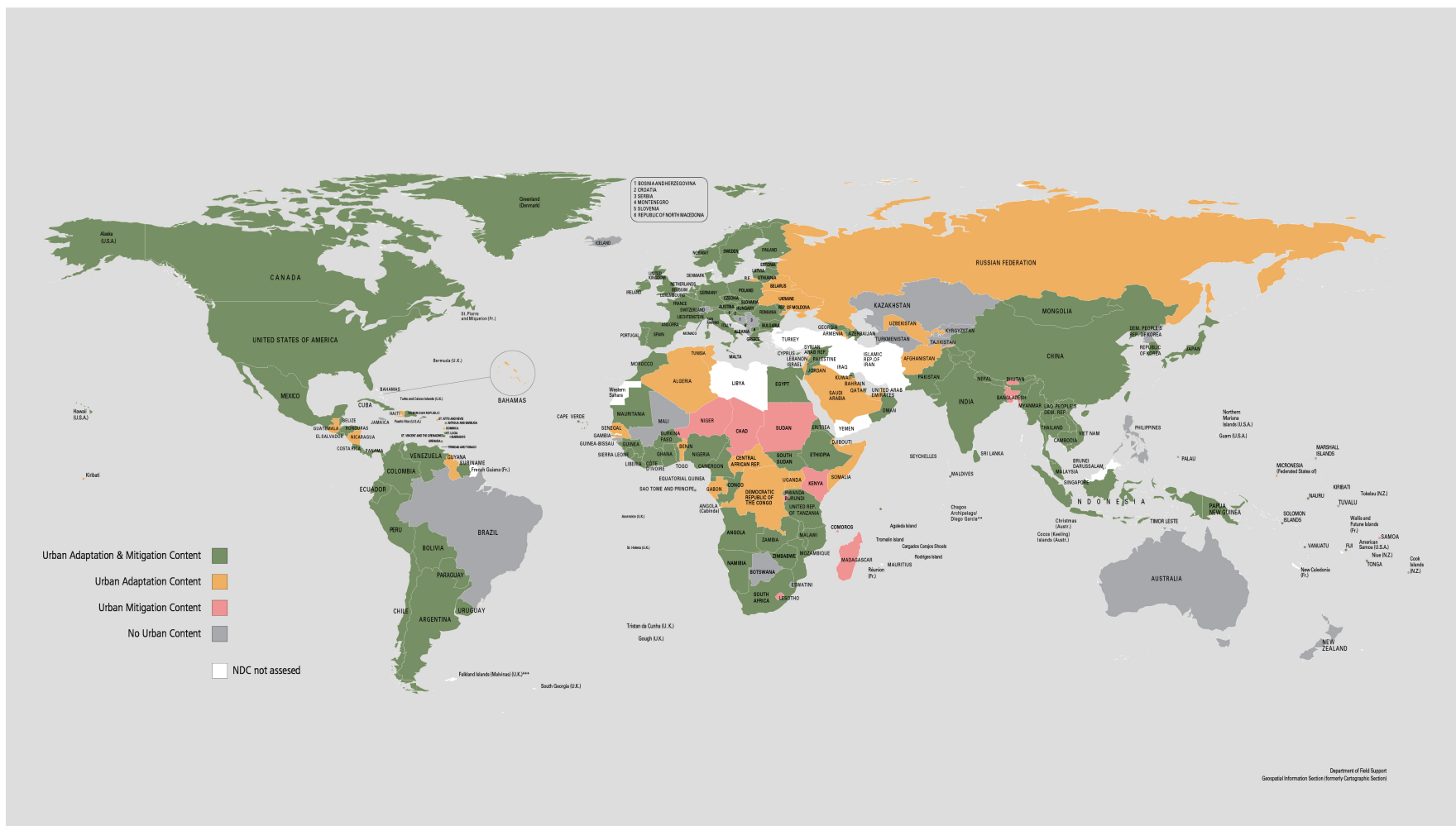


Figure 12 - Map of Urban Content, Adaptation and Mitigation, Adaptation only, Mitigation only

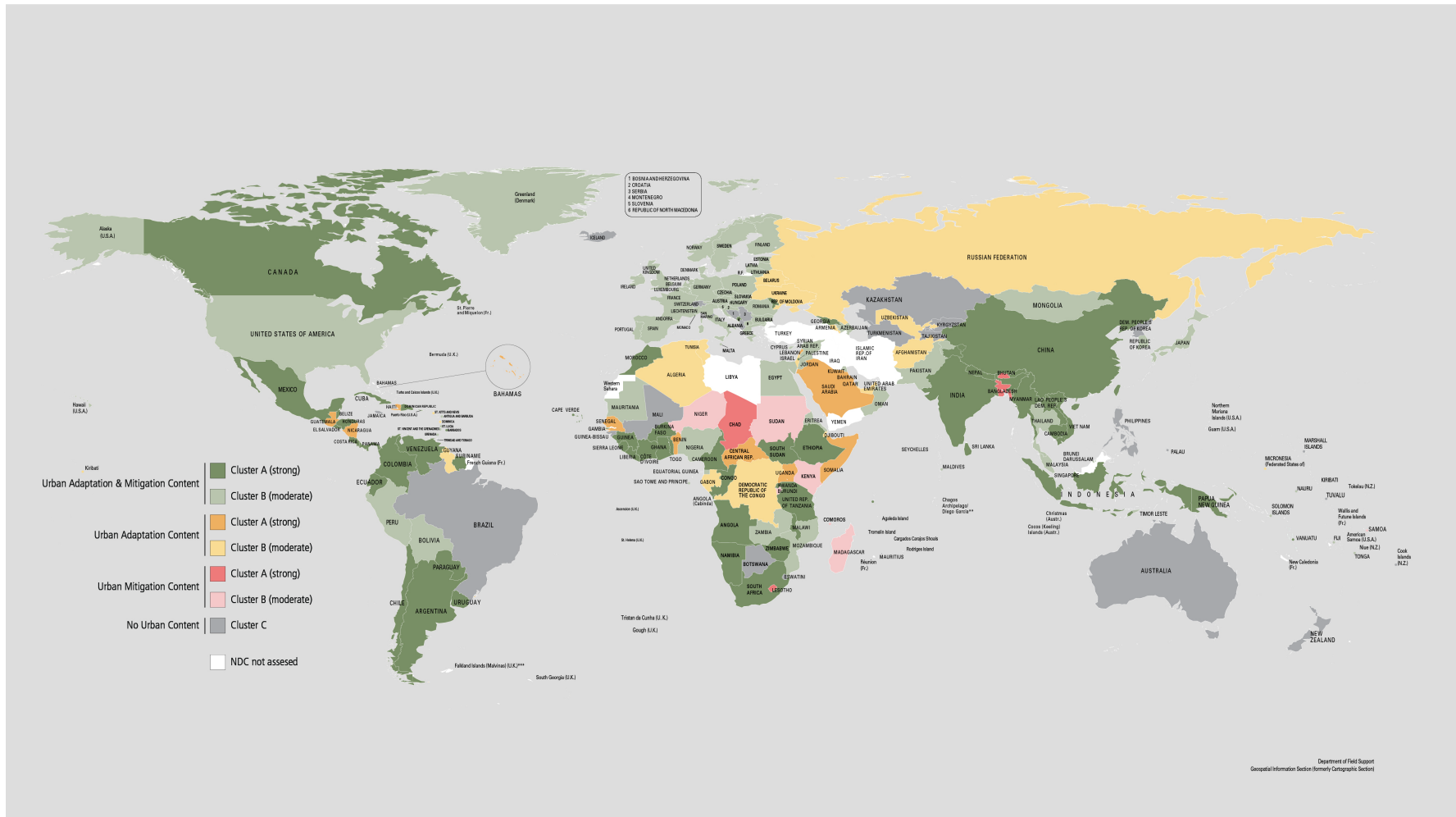


Figure 13 - Map of Urban Content, Clusters A, B and C, Adaptation and Mitigation only, Mitigation only

URBAN CONTENT OF THE NDCs AT COUNTRY LEVEL

The three country analyses are initially depicted in quantitative analysis, and the below legend supports the next three subsections for the Republic of Colombia, the Republic of the Philippines and the Republic of Rwanda.

Legend: Urban adaptation challenges and responses

Abbreviation	Long name
Floods	Floods
Droughts	Droughts
Sea level rise	Sea level rise
Extreme events	Extreme weather events
Temperature rise	Temperature rise
Heatwaves	Heatwaves
Vector-borne disease.	Vector-borne diseases
Land degradation	Land degradation
Salt water intr.	Salt water intrusion
Informal settl.	Informal settlement
Buildings	Building stocks
Infrastructures	Infrastructure
NBS	Nature-based solutions and ecosystem services
Planning and design	Planning and design
DRR	Disaster risk reduction
Inclusion/gender	Social inclusion and gender
Other	Other

Legend: Urban content by sector



REPUBLIC OF COLOMBIA Americas | South America

GENERAL INDICATORS		NDC INDICATORS
Total pop. 2020 50.9 mil	CO2 Emissions per country 2018 79,490 kt	Submission date 12/30/2020
Total pop. 2010 45.2 mil	CO2 Emissions per capita 2018 1.6 metric tons per capita	Mitigation Target Conditional and unconditional
% Urban pop. 2020 81.4%	Total GHG emissions per country 2018 184,100 kt of CO2 equivalent	Mitigation Contribution Type GHG target
% Urban pop. 2010 78%	GDP Country in 2020 271,346.9 current US\$	GHG Target type Baseline scenario target
Urban pop. trend 2030 84.3%	GDP per capita in 2020 14,565.4 current US\$	Target quantity 268 Mton CO2eq
Urban pop. trend 2040 86.7%	Income categorization Upper middle income	Reference year 2015
Urban pop. trend 2050 88.8%	Human Development Index 2019 0.767	Target year 2030
	Global ranking 2019 83/189	NDC Urban content Cluster A
		NDC Urban content Mitigation/Adaptation Both

List of policies analysed:

Nationally Determined Contribution (NDC) – communicated on 30 December 2020

Long-term Climate Change Strategy (E2050; 2020-2050)

National Climate Change Policy (PNCC)

Urban MITIGATION challenges	Urban ADAPTATION challenges
<p>Figure 14 - Urban mitigation challenges Colombia</p>	<p>Figure 15 - Urban adaptation challenges Colombia</p>

"[...] Decarbonized transport services must be provided to the growing public transportation systems in order to service 70% of the total demand by 2050. Also, by 2050, 64% of public transportation services will be powered by electricity, while the rest will be powered by a combination of natural gas, fossil fuel and biofuels". (E2050, p. 30)

"The incorporation of management and conservation actions for ecosystem services that provide long-term sustainability to urban and rural systems, are related to the supply of goods and services for local communities, to an increased eco-systemic resiliency, and to the reduction of emissions". (PNCC, p. 59)

The NDC explicitly identifies urban mitigation challenges related to other sectors; it implicitly refers to transport, energy, building, land use and planning, industry sectors for urban mitigation challenges.

The E2050 explicitly identifies urban mitigation challenges related to transport; it implicitly refers to water, energy, food security and industry for urban mitigation challenges.

The PNCC explicitly identifies urban mitigation challenges related to food security and land use and planning sectors; it implicitly refers to transport, water and energy for urban mitigation challenges.

The NDC explicitly identifies urban adaptation challenges related to land degradation and building sectors; it implicitly refers to urban adaptation challenges within all other identified sectors with the exception of sea level rise, sea water intrusion and informal settlements.

The E2050 explicitly identifies urban adaptation challenges related to droughts, disaster risk reduction and inclusion and gender sectors; it implicitly refers to extreme events, land degradation, informal settlements and ecosystem services sectors for urban adaptation challenges.

The PNCC implicitly identifies urban adaptation challenges related to floods, sea level rise, extreme events, temperature rise and ecosystem services sectors.

Urban MITIGATION responses	Urban ADAPTATION responses
 <p data-bbox="236 757 715 788">Figure 16 - Urban mitigation responses Colombia</p>	 <p data-bbox="884 757 1369 788">Figure 17 - Urban adaptation responses Colombia</p>
<p data-bbox="164 831 1422 898"><i>"Increase in the modal participation of the bicycle by 5.5% in the participating cities" (NDC, p. 91). "600,000 electric vehicles of the categories: taxi, passenger vehicles, light vehicles, light trucks, official vehicles." (NDC, p. 90)</i></p> <p data-bbox="164 981 1406 1048"><i>"Promote the conservation of the main ecological structure and landscape management, through the construction and upkeep of public urban green spaces". (PNCC, p. 921).</i></p> <p data-bbox="164 1131 1437 1272"><i>"Develop protection and conservation actions in 24 water supply basins in municipalities susceptible to shortages due to low rainfall season and rainy season." (NDC, p. 52). "Develop multi-sectoral interventions for conservation, protection and management in the watersheds and sources supplying priority aqueducts defined by the Ministry of Housing, City and Territory." (NDC, p. 16).</i></p> <p data-bbox="164 1355 1433 1451"><i>The NDC explicitly identifies urban mitigation responses related to transport, water, energy, building, waste, land use and planning, and other sectors; it implicitly refers to food security and industry sectors for urban mitigation responses.</i></p> <p data-bbox="164 1534 1374 1608"><i>The E2050 explicitly identifies urban mitigation responses related to transport, energy, water, food security and industry sectors; it implicitly refers to water and land use and planning sectors for urban mitigation responses.</i></p> <p data-bbox="164 1630 1098 1662"><i>The PNCC implicitly identifies urban mitigation responses related to energy and waste.</i></p> <p data-bbox="164 1684 1398 1825"><i>The NDC explicitly identifies urban adaptation responses related to floods, droughts, extreme events, heatwaves, building, infrastructures, nature-based solutions, planning and design, disaster risk reduction and other sectors; it implicitly refers to vector borne diseases, land degradation and inclusion and gender sectors for urban adaptation responses.</i></p>	

The E2050 explicitly identifies urban adaptation responses related to floods, droughts, extreme events, buildings, infrastructures, nature-based solutions, disaster risk reduction and other sectors; it implicitly refers to temperature rise, planning and design sectors for urban adaptation responses.

The PNCC explicitly identifies urban adaptation responses related to floods, sea level rise and infrastructure sectors; it implicitly refers to buildings, nature-based solutions, planning and design sectors for urban adaptation responses.

Key climate policies reviewed for urban content in Colombia were:

- Nationally Determined Contribution (NDC) – communicated on 30 December 2020.
- National Climate Change Policy (PNCC).
- Long-term Climate Change Strategy (E2050; 2020-2050).

The updated NDC submitted by Colombia covers urban content under both mitigation and adaptation through a wide array of measures, directly and indirectly, related to urban issues. Furthermore, the NDC is well articulated with key climate policies, such as the Long-term Climate Change Strategy (E2050), in which one of the pillars is cities and sustainable urban development. Highlights of urban content in the NDC, PNCC and E2050 include the following⁷.

URBAN CLIMATE CHALLENGES

Policies that identify key climate challenges, with some direct or indirect mention of urban areas, are briefly referenced as follows:

Mitigation

The NDC identifies key mitigation challenges and responses for medium-term action. These actions are to a great extent harmonized with the broader policy framework set forth by the PNCC and the long-term vision of the E2050 strategy. Some of the mitigation challenges and opportunities identified are linked to the urban economy. Mitigation challenges are as follows:

Energy

"For decarbonization to happen, the proportion of renewable energy generation must double by the year 2050, and this must be achieved through substantial increases in the use of bioenergy and solar energy". (E2050, p. 10)

Moderate/implicit urban content

⁷ Note that the excerpts included below are not exhaustive: certain concepts may be addressed in more than one policy or statement. All excerpts have been translated by the authors for the purpose of this analysis.

Urban mobility and transport

"[...] Decarbonized transport services must be provided to the growing public transportation systems in order to service 70% of the total demand by 2050. Also, by 2050, 64% of public transportation services will be powered by electricity, while the rest will be powered by a combination of natural gas, fossil fuel and biofuels". (E2050, p. 30)

Strong/indirect urban content

Extreme weather events

"The potential effects of climate change [...] are evaluated according to the elements susceptible to changes in precipitation and temperature, following the simulations for scenario RCP 6.0 for 2011-2040". (NDC, p.12)

Moderate/implicit urban content

Waste

"In Colombian cities, a large part of greenhouse gas emissions are associated with transportation and waste, which total 17% of national emissions (IDEAM, PNUD, Minambiente, DNP, Cancillería, 2015)". (PNCC, p. 53)

Strong/indirect urban content

Adaptation

The NDC references urban issues within the adaptation sector to a lesser extent than in the mitigation sector. Yet the NDC's adaptation section constitutes the Adaptation Communication and therefore presents priorities and responses in articulation with other policies and plans such as the National Adaptation Plan (not reviewed for this analysis), the PNCC and the E2050 strategy. Many of the NDC's adaptation measures have Strong emphasis on nature-based solutions as well as ecosystem-based adaptation that highlights the rural-urban continuum. Adaptation challenges and responses include:

Urban nature-based solutions and ecosystem-based approaches

"The incorporation of management and conservation actions for the eco-systemic services that provide long-term sustainability to urban and rural systems, related to the supply of goods and services for local communities, to an increased eco-systemic resiliency, and to the reduction of emissions". (PNCC, p. 59)

Strong/explicit urban content

Flooding

"The average annual loss due to floods and hurricanes is equivalent to 7.54% of the National Housing Sector Budget for 2021 of 4.8 billion Colombian pesos". (E2025, p. 39)

Moderate/implicit urban content

Droughts

"The majority of homes at risk due to climate related hazards like sea-level rise, extreme rain events, and droughts are concentrated in cities". (PNCC, p. 53)

Strong/explicit urban content

Land degradation

"40% of the country's land mass presents some degree of erosion. 3% of the country's land mass presents severe degrees of erosion". (NDC, p.10).

Moderate/implicit urban content

Disaster risk reduction

"As part of the natural disaster risk quantification considering climate change effects in Colombia, the Average Annual Loss (PAP) and the Probable Maximum Loss (PML) are calculated for the following threats and exposure portfolios: floods and hurricanes in buildings (housing, commercial, industry, public offices, educational and health)". (E2050, p.37)

Moderate/implicit urban content

Other urban adaptation challenges relate to underlying social conditions or the existing built environment. These circumstances increase the vulnerability of people and assets exposed to climate change impacts.

Urban poverty / informal settlements

"In line with its leadership formulating the SDGs, Colombia recognizes the value in aligning efforts in terms of climate change, food security and poverty eradication" (NDC; p.2)

Moderate/implicit urban content

Other social & gender vulnerabilities

"As a result of climate change's impact, an increase in the frequency and intensity of hydrometeorological disasters is expected, generating displacement and significant effects in women's lives". (E2050, p. 153)

Moderate/implicit urban content

URBAN CLIMATE RESPONSES

In response to these challenges, the NDC, PNCC & E2050 contain a substantial number of urban measures.

Mitigation

Building stocks

"Sustainable construction: Gradual implementation until reaching 100% of new buildings nationwide by 2026, maintained until 2030. Emission reduction potential 0.09 Mt CO2 eq". (NDC, p. 87)

Strong/explicit urban content

Energy systems

"Promotion of at least 8 thermal districts in different cities of the country". (NDC, p. 92 and E2050, p. 105)

"Reduce the difference in electricity consumption between peak and valley hours [...] and promote the future implementation of technologies such as smart grids and dynamic rates". (NDC, p. 86)

"Guidelines to optimize the dispatch of electrical energy, [...] promote increased efficiency in plants. Energy efficiency proposed as a cross-cutting option for the three subsectors (electricity, hydrocarbons and mining.)". (NDC, p. 85)

"Identify and evaluate mitigation measures of greenhouse gases, incentivizing energy efficient residential and non-residential buildings, and sustainable construction practices". (PNCC, p. 95)

Strong/explicit urban content

Urban mobility & transport / Urban planning

"Increase in the modal participation of the bicycle by 5.5% in the participating cities" (NDC, p. 91). "600,000 electric vehicles of the categories: taxi, passenger vehicles, light vehicles, light trucks, official vehicles." (NDC, p. 90)

"Sectoral comprehensive climate change management plans must propose short term goals, instruments and measures for both the national and territorial level to mitigate urban-transportation-related emissions, and for the management of solid and liquid waste". (PNCC, p. 54)

"Identify and evaluate emission mitigation measures, including incentives for e-vehicle, low emission vehicles and NMV transportation". (PNCC, p. 93)

Strong/explicit urban content

Food Security

"Updates on Development Plans must include rural and suburban land close to urban areas for agricultural activities that match the neighbouring cities' demands". (p. 81). "Facilitate spaces to promote local and efficient consumption (i.e., farmers markets, urban agriculture)". (E2050, p.81)

Strong/explicit urban content

Industry

Industry "Creation of a pilot programme for the development of eco-efficient industrial parks [...] (proposal: Bogotá and Medellín) with gender-conscious components that promote women's participation". (E2050, p. 68)

Strong/explicit urban content

Urban Planning and Design

"Highly efficient buildings adapted to climate change, that generate a net zero emission balance with its surroundings (E2050, p. 104). Updates on Land Development Plans (POT) include climate change-conscious actions, such as revitalization of built areas and new developments that can guarantee urban sprawl control, proper land use, hazard mitigation, natural resources and service efficiency, solid waste management, and sustainable mobility and infrastructure". (E2050p. 101).

Strong/explicit urban content

Waste management

"Use of biogas: percentage of biogas generated and used in RS Doña Juana de 2025: 0.4%, 2030: 0.6%." Emission reduction potential of all three solid waste management targets 1.31 Mt CO2 eq. (NDC, p. 86)

"Promotion of composting in urban and rural homes, through information and sensibilization campaigns, workshops, and composting kits distribution". (E2050, p. 83) "68% of domestic urban residual waters to be treated and highly efficient plants with biogas capture systems". (E2050, p. 102).

"Incentivize the reduction of constant solid and liquid waste generation, as well as the reuse, recycling and repurposing of waste, including the energy valuation of es residuo before its final destination in landfills; and harness the energy from the emissions generated by landfills and municipal water treatment systems". (PNCC, p.94)

Strong/explicit urban content

Adaptation

In response to the challenges above, the NDC, PNCC & E2050 propose urban adaptation measures, including the following.

Resilient settlements for the urban poor

"[...] aligning efforts in terms of climate change, food security, and poverty eradication. The Department for Social Prosperity has assumed the commitment to guarantee that 50% of its programs implement actions for risk management, adaptation and mitigation of climate change by 2030." (NDC p. 04)

Moderate/implied urban content

Climate-induced internal displacement

"Legal protection mechanism and participation channels for displaced communities and migrants in the context of climate change related issues. Colombia offers displaced communities attention routes with roles, responsibilities and resources assigned to the different instances and scales of government". (E2050, p. 108).

Moderate/implied urban content

Reduced social & gender vulnerabilities

"Seek to articulate with the National Public Policy on Gender Equality" (NDC, p. 03)

"Updates on Land Development Plans (POT) with effective and substantial participation of women in decision making scenarios, to protect the Main Ecological Structure, increasing quality and quantity of urban and suburban green areas". (E2050, p. 105). Effective measures for the attention and response to climate change effects on the most vulnerable segments of population, including specific protocols for women and children". (E2050, p. 139)

Strong/explicit urban content

Improved urban planning & design

"Strengthen the processes of territorial planning and housing construction through the generation of guidelines, criteria and tools to reduce the vulnerability of the housing sector." (NDC, p. 13)

"City-regions with an integral urban development for environmental sustainability [...] with a robust governance for the efficient management of its necessities, and citizens with sustainable patterns of consumption [...]". (E2050, p. 101)

Strong/explicit urban content

Disaster risk reduction

"Structural and non-structural risk management actions for climate change adaptation in 30% of prioritized municipalities due to shortages vulnerability through both dry and rainy season". (E2050, p.102)

"[...] 100% of prioritized municipalities with climate change adaptation measures articulated with disaster risk management measures from the (POT)". (E2050, p. 101). "Every territorial entity of the country must include risk mitigation plans in their development plans based on their corresponding ecosystems (Eco-RDD)". (E2050, p. 105)

Strong/explicit urban content

Strengthened urban infrastructure & systems

"Strengthen governance (effectiveness, quality, good guidance in sector interventions) of disaster risk management and climate change adaptation in transport sector institutions at the central and territorial level according to their competencies, including the improvement of systems of geographic information of the transport infrastructure." (NDC, p. 19).

"Adaptation measures (grey and green infrastructure) implemented on 50% of road infrastructure for public transport and active mobility, to reduce the risk caused by climate change and extreme weather events". (E2050, p. 103).

"Equip cities with urban infrastructure (i.e., aqueducts, sewage, urban transportation system) resilient to floods or sea-level rise". (PNCC, p. 91). Evaluate the efficiency of catchment, conduction, distribution and commercialization of potable water derived from vulnerable aqueduct systems". (PNCC; p. 92)

Strong/explicit urban content

More resilient building stocks

"[...] 50% of construction licenses incorporate vulnerability and risk assessment towards climate change/extreme weather events, and establish adaptation measures and risk management to be developed with the project". (E2050, p. 104)

Moderate/implicit urban content

REPUBLIC OF THE PHILIPPINES Asia | South-Eastern Asia

GENERAL INDICATORS		NDC INDICATORS
Total pop. 2020 109.6 mil	CO2 Emissions per country 2018 142,240 kt	Submission date 4/15/2021
Total pop. 2010 95.6 mil	CO2 Emissions per capita 2018 0.9 metric tons per capita	Mitigation Target Conditional and unconditional
% Urban pop. 2020 47.4%	Total GHG emissions per country 2018 163,300 kt of CO2 equivalent	Mitigation Contribution Type GHG target
% Urban pop. 2010 45.3%	GDP Country in 2020 361489.35 current US\$	GHG Target type Baseline scenario target
Urban pop. trend 2030 50.9%	GDP per capita in 2020 8390.4 current US\$	Target quantity 75 % reduction & avoidance
Urban pop. trend 2040 56%	Income categorization lower middle income	Reference year 2020
Urban pop. trend 2050 61.8%	Human Development Index 2019 0.718	Target year 2030
	Global ranking 2019 107/189	NDC Urban content Cluster C
		NDC Urban content Mitigation/Adaptation None

List of policies analysed:

Nationally Determined Contributions (NDC, communicated on 15 April 2021)

National Climate Change Action Plan (NCCAP, 2011-2028)

National Framework Strategy on Climate Change (NFSCC, 2010-2022)

Urban MITIGATION challenges

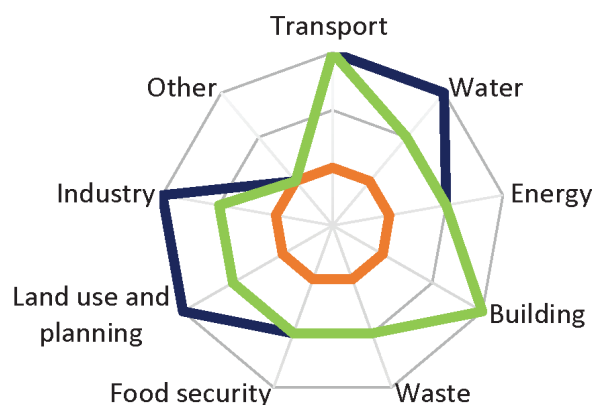


Figure 18 - Urban mitigation challenges Philippines

Urban ADAPTATION challenges

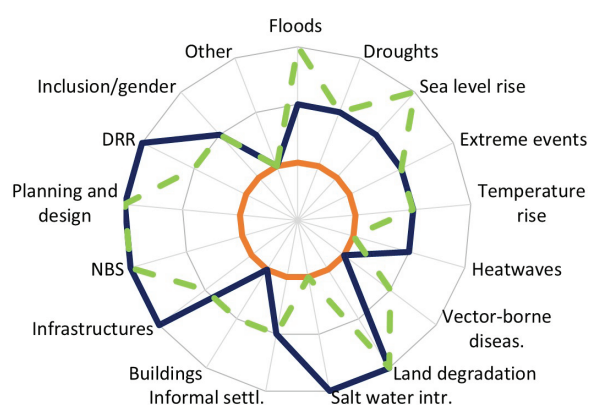


Figure 19 - Urban adaptation challenges Philippines

“The residential and commercial sectors – human settlements – are major producers of GHG... High rise buildings consume most... energy supply...” (NFSCC, Mitigation challenge: Energy and building, p. 24); “An analysis of the energy... efficiency of... [urban] buildings... showed [substantial] potential savings” (NCCAP, Mitigation challenge: Energy and building, p. 27).

“Infrastructure facilities are threatened by climate change...” (NFSCC, Adaptation challenges: Transport, p. 14). “In many cities... expansion has occurred without... the provision of adequate infrastructure...” “Water infrastructures... [including in] Metro Manila... are designed for less variable climate conditions...” (NCCAP, Adaptation challenges: Water, pp. 11 & 31).

The NDC does not explicitly mention urban mitigation challenges, although it refers to other national policies that identify urban mitigation challenges.

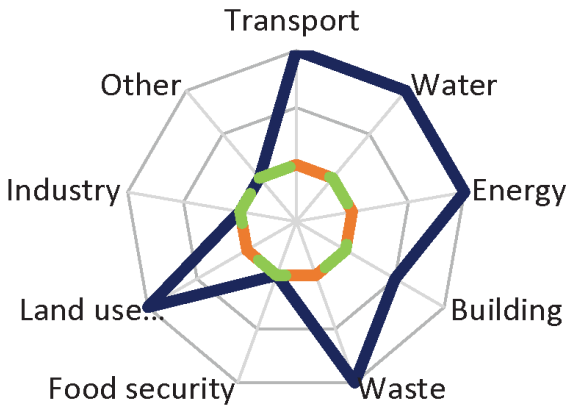
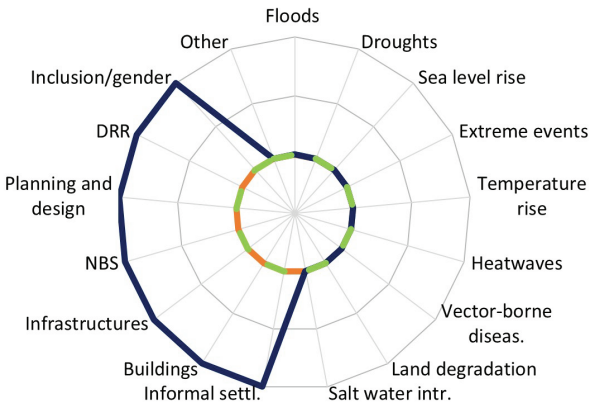
The NCCAP explicitly identifies urban mitigation challenges in relation to transport, water, industry, land use and planning; and it refers implicitly to all other sectors analysed.

The NFSCC explicitly identifies urban mitigation challenges related to transport and building sectors; and it refers implicitly to all other sectors analysed.

The NDC does not explicitly mention urban adaptation challenges, although it refers to other national policies that identify urban adaptation challenges.

The NCCAP explicitly identifies urban adaptation challenges in relation to disaster risk reduction, urban planning and design, ecosystem services and infrastructures, land degradation and salt water intrusion; it implicitly refers to all other sectors analysed, with the exception of housing and vector-borne diseases.

The NFSCC explicitly identifies urban adaptation challenges related to floods, sea level rise, land degradation, ecosystem services, urban planning and design; and it implicitly refers to all other sectors analysed, with the exception of heat waves.

Urban MITIGATION responses	Urban ADAPTATION responses
 <p data-bbox="229 808 724 835">Figure 20 - Urban mitigation responses Philippines</p>	 <p data-bbox="874 808 1378 835">Figure 21 - Urban adaptation responses Philippines</p>

“Implement mixed-use, medium-to-high density integrated land use-transportation plan in developing new urban communities or in expanding existing ones” (NCCAP, Mitigation response: Transport and Land use and planning, p. 21).

“Establish ecosystem towns in protected areas and key biodiversity areas” (NCCAP, Adaptation responses: Urban nature-based solutions and ecosystem-based approaches, p. 15).

The NDC does not explicitly mention urban mitigation responses, although it refers to other national policies that identify urban mitigation responses.

The NCCAP explicitly identifies urban mitigation responses related to transport, waste, water, energy, land use and urban planning.

The NDC does not explicitly mention urban adaptation responses, although it refers to other national policies that identify urban adaptation responses.

The NCCAP explicitly identifies urban adaptation responses related to social inclusion and gender, disaster risk reduction, urban planning and design, nature-based solutions, urban infrastructures, buildings and informal settlements.

Key climate policies reviewed for urban content in the Philippines were:

- Nationally Determined Contribution (NDC) – communicated on 15 April 2021.
- National Framework Strategy on Climate Change (NFSCC; 2010-2022).
- National Climate Change Action Plan (NCCAP; 2011-2028).

While the NDC *per se* contains no specifically urban content, it references several other policies that do. Referenced policies that contain the clearest urban content are the NFSCC and the NCCAP. Their urban content is as follows.

URBAN CLIMATE CHALLENGES

Mitigation

Climate policies reference key mitigation challenges and opportunities. Some challenges and opportunities identified broad cover swathes of the Filipino economy, including its urban economy, even if that is not explicitly mentioned; other passages make direct reference to urban areas. Mitigation challenges are as follows:

Energy

“The energy sector is a major source of GHG emissions...” (NCCAP, p. 25). “[There is] mitigation potential for cleaner... energy” (NFSCC, p. 7).

Moderate/implicit urban content

Urban mobility and transport

“Within the energy sector, the transport... subsector [is one of] the biggest... emitters” (NCCAP p. 25). “[Future emissions are] based [in part] on... the projected increases in urban population” (NFSCC, p. 23). “[There is] mitigation potential for cleaner... transport”. (NCCAP pp. 7&31).

Strong/explicit urban content

Buildings

“The residential and commercial sectors – human settlements – are major producers of GHG.... High rise buildings consume most... energy supply” (NFSCC, p. 24). “An analysis of the energy... efficiency of... [urban] buildings... showed [substantial] potential savings” (NCCAP, p. 27).

Strong/explicit urban content

Waste

“Unmanaged waste aggravates the emission of methane...” (NFSCC, p. 21). “The country has a [substantial] potential installed capacity... from biogas resources” (NCCAP, p. 29).

Moderate/implicit urban content

Industry

“Industrial processes... show mitigation potential” (NFSCC, p. 21).

Moderate/implicit urban content

Adaptation

Diagnostics paint a sobering picture of the shocks and stresses brought about by climate change in the Philippines. These broad impacts that affect both urban and rural areas include the following:

Storm events

“The country is ranked highest in the world in terms of vulnerability to tropical cyclone occurrence...” (NFSCC, p. 7). “[...] There is an expected increase in the severity and frequency of extreme weather...” (NCCAP, p. 17).

Moderate/implicit urban content

Sea level rise

“Projected impacts of... sea level rise... [will] affect coastal communities” (NFSCC, p. 10).

Strong/explicit urban content⁸

Flooding

“The risk of flooding... will increase.... Inundation [will] affect coastal settlements...” (NFSCC, p. 10).

Strong/explicit urban content

Saltwater intrusion

“In some highly urbanized areas [...] water demand has resulted in over extraction of groundwater and saltwater intrusion” (NCCAP, p. 11).

Strong/explicit urban content

Droughts

“There may be an increasing number of disasters linked to... droughts...” (NCCAP, p. 16).

Moderate/implicit urban content

⁸ Per the 1991 Local Government Code of the Philippines, “Local government unit[s]... will meet the priority needs and service requirements of its communities” (Section 3(b), emphasis added). See <https://officialgazette.gov.ph/downloads/1991/10oct/19911010-RA-7160-CCA.pdf>.

Temperature rise

“The country’s average annual mean temperature is projected to increase...” (NFSCC, p. 9).

Moderate/implicit urban content

Diseases

“Likely impacts of climate change include... increases in endemic morbidity and mortality due to... an expansion of... vector-borne and water-borne diseases...” (NFSCC, p. 15).

Moderate/implicit urban content

Other urban adaptation challenges relate to underlying social conditions or the existing built environment. These circumstances increase the vulnerability of people and assets exposed to climate change impacts.

Urban poverty / informal settlements

“The country is ranked... third [globally] in terms of people exposed to [tropical cyclone] events.... Poverty limited the... population’s capacity to bounce back immediately in the face of disasters...” (NFSCC, pp. 7 & 15). “Poor people... tend to inhabit disaster-prone and environmentally precarious areas...” (NCCAP, p. 37).

Moderate/implicit urban content

Other social & gender vulnerabilities

“Age distribution... influence[s] level of vulnerability” (NFSCC, p. 15). “Women... children and other[s]... [are] vulnerable.... Poor people, including women, tend to inhabit disaster-prone... areas...” (NCCAP, pp. 36-37).

Moderate/implicit urban content

Unplanned urban development

“In many cities... expansion has occurred without appropriate development planning...” (NCCAP, p. 31). “Ecosystems [are] already suffering from... uncontrolled development.... [and] unplanned land conversion...” (NFSCC, pp. 7 & 12).

Strong/explicit urban content

Inadequate urban infrastructure

“Infrastructure facilities are threatened by climate change...” (NFSCC, p. 14). “In many cities... expansion has occurred without... the provision of adequate infrastructure...” “Water infrastructures... [including in] Metro Manila... are designed for less variable climate conditions...” (NCCAP, pp. 11 & 31).

Strong/explicit urban content

Insufficient access to potable water

“The problem of water scarcity is already felt.... Waterless municipalities... [are still a concern]”. (NCCAP, pp. 11-12).

Strong/explicit urban content

Untreated wastes

“The problem [of water scarcity] is aggravated by the deterioration of water quality due to pollution from untreated sewage...”. (NCCAP, p 11).

Strong/explicit urban content⁹

Inadequate buildings

“Climate change... places greater demands on... public buildings...” (NFSCC, p. 14).

Moderate/implicit urban content¹⁰

Ecosystems degraded by urban development

“Climate change... threatens the ability of the country’s ecosystems to provide life-support services....” (NFSCC, p. 7). “Almost all of the country’s ecosystems have been significantly transformed or degraded... [including] through... settlements...” (NCCAP, p. 14). “Domestic and industrial wastes discharged into the sea... aggravate the vulnerabilities of coastal ecosystems” (NFSCC, p. 13).

Strong/explicit urban content

URBAN CLIMATE RESPONSES

In response to these challenges, the NCCAP contains a substantial number of urban measures.

Mitigation

Energy systems

“Off-grid, decentralized community-based renewable energy systems” (Output 2 under Priority Area 6, p. 26).

Strong/explicit urban content¹¹

⁹ Per the 1991 Local Government Code of the Philippines, facilities for management of sewerage represents a local government responsibility (Section 17(2)(viii)).

¹⁰ Per the 1991 Local Government Code of the Philippines, Local Government Units are responsible for a number of types of public buildings, including health centers, day-care centers, multi-purpose halls, public markets and so on (see, for example, Section 17 (b)(1) (ii, vi, vii and viii); Section 17 (b)(2) (ix) and so on).

¹¹ Per the 1991 Local Government Code of the Philippines, the “system of decentralization” involves a process whereby “local government units shall be given more powers... [and] responsibilities” (Section 2(a)).

Urban mobility & transport / Urban planning

“Implement mixed-use, medium-to-high density integrated land use-transport plan in developing new urban communities or in expanding existing ones” (Activity 3.2.2 under Priority Area 4, p. 21).

Strong/explicit urban content

Solid waste management

“Ecological solid waste management implemented towards climate change mitigation and adaptation” (Output 3.3 under Priority Area 5, p. 21).

Moderate/implicit urban content¹²

Adaptation

Resilient settlements for the urban poor

“Adaptive... settlement areas for vulnerable communities... defined” (Output Area 3.1 in Priority Area 4). Under this Output Area, Indicator 4100.3.1 is “Number of... informal settler communities in highly climate change vulnerable... areas resettled” (NCCAP, pp. 18 & 89).

Strong/explicit urban content

Reduced social & gender vulnerabilities

“Mainstreaming... of gender-responsive climate change adaptation (CCA) and disaster risk reduction and management (DRRM) in local plans...” (p. 19).

Strong/explicit urban content¹³

Improved urban planning & design

“Formally adopt... and integrated land-use and transport planning processes at the... local levels” (NCCAP, Activity 3.1.2 under Priority Area 6, p. 26). “Climate change adaptive housing and land use development implemented” (Output 3.2 under Priority Area 5, p. 21). Also see Indicator No. 4200.3.2: “Number of Local Government Units implementing a settlement plan” (p. 90).

Strong/explicit urban content

¹² Per the 1991 Local Government Code of the Philippines, “solid waste collection” and a “solid waste disposal system... and services or facilities related to... sanitation” are local government responsibilities (Section 17(b)(1)(iii) and (2)(vi)).

¹³ Per the 1991 Local Government Code, “Local government units shall... exercise such other powers and discharge such other functions... as are necessary, appropriate, or incidental to efficient and effective provision of the [assigned] basic services and facilities” (Section 17(a)). This presumably includes the development of local plans.

Strengthened urban infrastructure & systems

“Infrastructures in cities... climate-proofed” (Output 3.1 under Priority Area 5, p. 21) “Energy and transport systems infrastructures assessed for climate change... vulnerability” (Output 4.2.1 under Priority Area 6, p. 26).

Strong/explicit urban content

More resilient building stocks

“Climate change adaptive housing... implemented” (Output 3.2 under Priority Area 5, p. 21). Activity 3.2.3: “Implement green building principles...”.

Moderate/implicit urban content

Disaster risk reduction

CCA) and DRRM integrated in local plans (Output 1.1 under Priority Area 4, p. 18).

Strong/explicit urban content¹⁴

Urban nature-based solutions

“Establish ecosystem towns in protected areas and key biodiversity areas”. (Activities 1.2.2 in Priority Area 3, p. 15). Also see discussion of ‘Ecotowns’ (pp. 42-44).

Strong/explicit urban content

¹⁴ For local plans, see previous footnote.

REPUBLIC OF RWANDA Africa | Eastern Africa

GENERAL INDICATORS		NDC INDICATORS
Total pop. 2020 12.9 mil	CO2 Emissions per country 2018 6,170 kt	Submission date 5/1/2020
Total pop. 2010 10.3 mil	CO2 Emissions per capita 2018 0.1 metric tons per capita	Mitigation Target Conditional and unconditional
% Urban pop. 2020 17.4%	Total GHG emissions per country 2018 6,170 kt of CO2 equivalent	Mitigation Contribution Type GHG target
% Urban pop. 2010 16.9%	GDP Country in 2020 10,333.99 current US\$	GHG Target type Baseline scenario target
Urban pop. trend 2030 19.6%	GDP per capita in 2020 2,214 current US\$	Target quantity 38% compared to BAU in 2030
Urban pop. trend 2040 23.9%	Income categorization Low income	Reference year 2015
Urban pop. trend 2050 29.6%	Human Development Index 2019 0.543	Target year 2030
	Global ranking 2019 160/189	NDC Urban content Cluster A
		NDC Urban content Mitigation/Adaptation Both

List of policies analysed:

Nationally Determined Contributions (NDC, communicated in May 2020)

National Environment and Climate Change Policy (NECCP, 2019)

Urban MITIGATION challenges

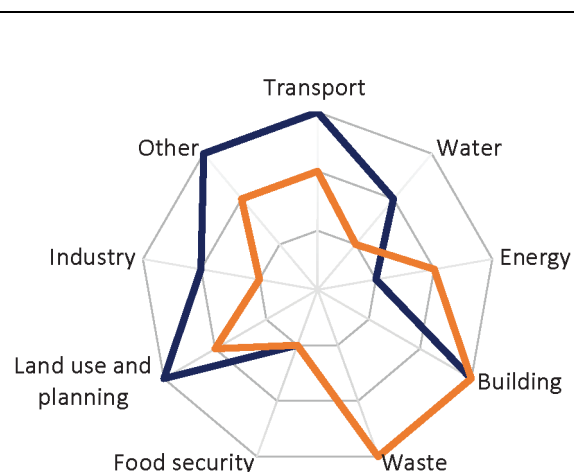


Figure 22 - Urban mitigation challenges Rwanda

Urban ADAPTATION challenges

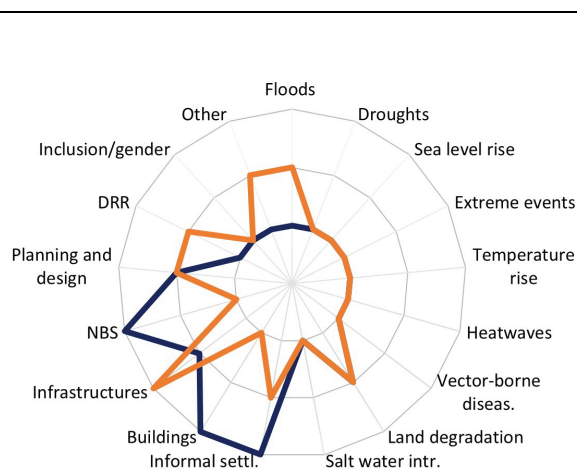


Figure 23 - Urban adaptation challenges Rwanda

"In 2016, it was reported that 62.60% of the urban population live in informal settlements, while less than 20% of the urban population live in areas covered by master plans had storm water considerations in 2016 (MININFRA, 2017)".
(NDC, Rwanda's impacts and vulnerability to climate change, p.46)

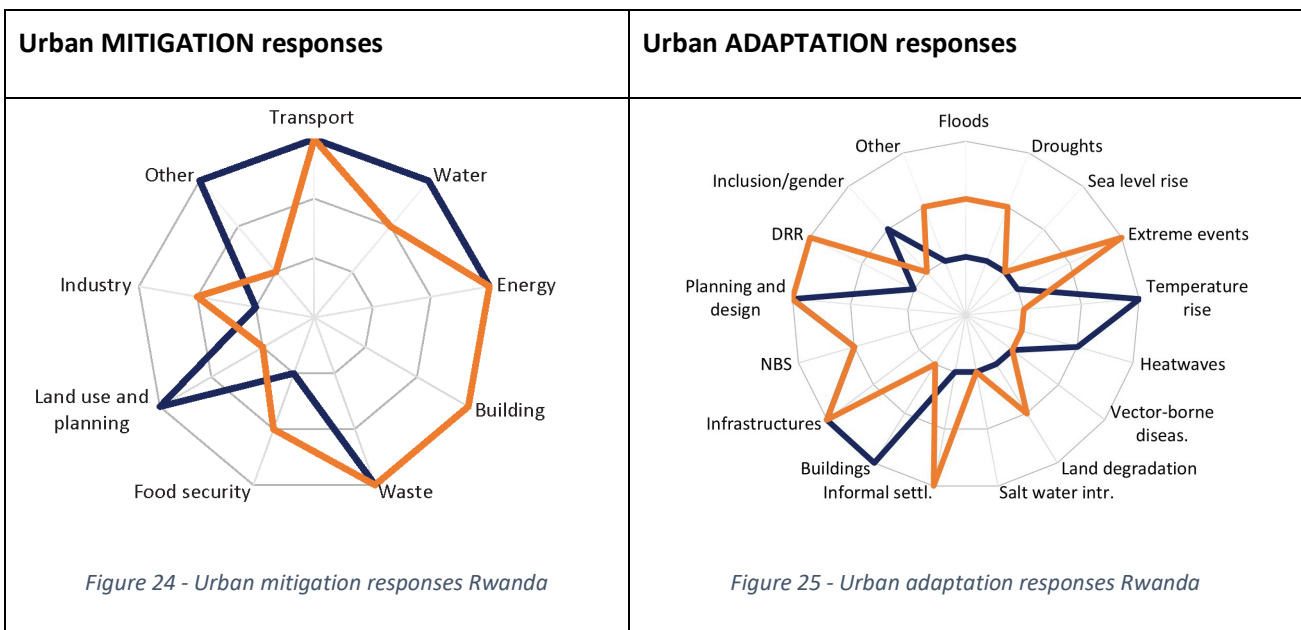
"Limited environmentally friendly transport systems: Existing transportation systems contribute significantly to air pollution[...] (REMA, 2018). Key issues include high densities of vehicles in Kigali [...], poor traffic management systems and road conditions and lack of mass and low-carbon transport systems [...]. In addition, there is still a lack of efficient infrastructure for non-motorised transport modes, especially in urban areas." **(NECCP, Key Underlying Issues and Emerging Challenges: Limited environmentally friendly transport system, p. 22)**

The NDC explicitly mentions urban mitigation challenges related to building and waste management, and it implicitly refers to transport, energy, land use and planning, and other mitigation challenges.

The NECCP explicitly mentions urban mitigation challenges related to land use and planning, waste, building, transport, and other challenges, and it implicitly refers to water and industry mitigation challenges.

The NDC explicitly identifies urban adaptation challenges related to urban infrastructures; it implicitly refers to floods, land degradation, informal settlements, planning and design, disaster risk reduction and other urban adaptation challenges.

The NECCP explicitly mentions urban adaptation challenges related to nature-based solutions, buildings and informal settlements; it implicitly refers to infrastructures, planning and design urban adaptation challenges.



"Solar water heater (SWH) programme - Installation of solar thermal water heaters within urban residential buildings supported by use of loans and grants to subsidise purchase costs, as part of the National Green Building Code minimum compliance system." (NDC, Mitigation measure: Building, p.38)

"Promote private sector investment, especially the development of appropriate water and sanitation, technologies and infrastructure for waste management. Promote technologies for efficient and safe water use, especially in respect to safe wastewater use and recycling." (NECCP, Policy Statement 4: Promote green urbanization and green rural settlements, p. 28)

The NDC explicitly identifies urban mitigation responses related to waste, buildings, energy and transport; it implicitly refers to food security and industry sectors for urban mitigation responses.

The NECCP explicitly identifies urban mitigation responses related to transport, water, energy, buildings, waste, land use and planning and other sectors.

The NDC explicitly identifies urban adaptation responses related to extreme weather events, informal settlements, infrastructures, urban planning and design, and disaster risk reduction sectors; it implicitly refers to floods, droughts, land degradation, nature-based solutions, and other sectors for urban adaptation responses.

The NECCP explicitly identifies urban adaptation responses related to temperature rise, buildings, infrastructures, planning and design sectors; it implicitly refers to heatwaves, nature-based solutions, planning, inclusion and gender sectors for urban adaptation responses.

Key climate policies reviewed for urban content in Rwanda were:

- Updated Nationally Determined Contribution (NDC) – communicated in May 2020.
- National Environmental and Climate Change Policy (NECCP, 2019).

The Green Growth and Climate Resilience Strategy (GGCRS, 2011) is another policy to guide the country's response to climate change. However, the policy is dated 2011 and is currently under update. It will be reviewed once released.

Further, the NDC and NECCP embed the GGCRS strategies and other national guiding policies, such as the National Strategy for Transformation (NST1).

The NDC and the NECCP contain specifically urban content, mainly outlined in the responses to climate change impacts. The NDC sets clear measures for mitigation and adaptation, while the NECCP provides broader statements and policy actions.

Their urban content can be summarized as follows.

URBAN CLIMATE CHALLENGES

The two policies mostly refer to other documents, reports and policies to outline the challenges, which are presented briefly, as follows.

Mitigation

Urban mobility and transport

"Rwanda's [Transport] GHG emissions in 2015, MtCO₂e, [count] 13% [of total]." (NDC, p. 24). "Existing transportation systems contribute significantly to air pollution [...] there is still a lack of efficient infrastructure for non-motorised transport modes, especially in urban areas." (NECCP, p. 22)

Moderate/implicit urban content

Urban Energy Systems

"[...] Public sector consumption of electricity (6%) is mainly used for public buildings, street lighting and water pumping" (NDC, p. 15). "[...] major sources included CO₂ emissions from fuel combustion for heating and cooking in buildings, which accounted for 14% of the total" (NDC, p.24)

Moderate/implicit urban content

Buildings

"[...] meeting the needs of this growing concentration of people living in urban areas poses a critical environmental challenge. This includes lack of low-carbon materials for housing and green infrastructure development," (NECCP, p.21)

Strong/explicit urban content

Waste

"Rwanda is experiencing a rapid urbanization process associated with rapid population growth in its towns and cities. [...] resulting in huge waste generation and high demand in public services including solid waste management services." (NDC, p.16)

Strong/explicit urban content

Urban Planning and Design

" The high population density [...] puts pressure on natural resources [...]. Without proper land use planning and implementation, and with a growing population, these pressures are likely to increase." (NDC, p.46). "If not properly planned and managed, this [population growth] will likely lead to further encroachment of economic activities to protected [...] ecosystems, [...]." (NECCP, p. 21).

Strong/explicit urban content

Adaptation

Floods

"[...] building in flood prone areas, high population density in prone areas, increased value of assets in flood-prone areas, and poor management of soil erosion." (NDC, p.11)

Moderate/implicit urban content

Droughts, landslide, storm

"The main risks/impacts that adversely affect the population include droughts, floods, landslides and storms. These are associated with damages to infrastructure, loss of lives and property including crops, soil erosion, water pollution, etc. (GoR, 2017b; REMA, 2015)." (NDC, p.11).

Moderate/implicit urban content

Land degradation

"The most pressing problems of pollution in Rwanda are those associated with air, water and land degradation. [...]" (NECCP, p.34)

Moderate/implicit urban content

Urban informal settlement

"In 2016, it was reported that 62.60% of the urban population live in informal settlements" (NDC, p.46). "[...] there are still many people living in unplanned settlements and high-risk zones with poor environmental conditions in both rural and urban areas." (NECCP, p.21)

Strong/explicit urban content

Urban infrastructure and systems

"[...] less than 20% of the urban population living in areas covered by master plans had storm water considerations in 2016 (MININFRA, 2017)". (NDC, p.46). "[...] the frequency and severity of natural disasters, [...] have significantly increased, [...] resulting in [...] damage to infrastructure" (NECCP, p.21)

Strong/explicit urban content

Ecosystems

"Rwanda's natural resources are being subjected to overwhelming pressure from competing land uses activities such as agriculture, industry, human settlement and infrastructure development [...]" (NECCP, p.22)

Moderate/implicit urban content

Urban planning and governance, data management

"Institutional and regulatory framework for sector coordination; [Gaps in] Data availability, [...] Institutional and technical capacity (GoR, 2018c)." (NDC, p.46). "To inform decision-making processes and citizens (MoE, 2017)." (NECCP, p.23).

Moderate/implicit urban content

URBAN CLIMATE RESPONSES

In response to these challenges, the NDC and NECCP contain a substantial number of urban measures.

Mitigation

Urban mobility and transport

"[...] the introduction of electric vehicles. [...] bus promotion as part of public transport development, [...] and the promotion of mass rapid transportation." (NDC, p.15) "measures including bus rapid transport (BRT) project, bus lanes, non-motorised transport lanes, and other modal shift projects contained in the Transport Sector Strategic Plan as part of the NST1." (NDC, p.38). "Promote green mobility [...] in urban [...] areas." (NECCP, Policy Obj. 1 – Statement 5, p. 28)

Strong/explicit urban content

Water

"Promote green urbanization [...] Promote technologies for efficient and safe water use, especially in respect to safe wastewater use and recycling." (NECCP, Policy Obj. 1 – Statement 4.7, p. 28)

Strong/explicit urban content

Energy and Building

"Installation of solar lighting and LED systems [...] for street lighting and public spaces within populated areas and main roads by 2024. [...]" (NDC, p. 36) "Installation of solar thermal water heaters within urban residential buildings [...]" (NDC, p.38). "Promote and incentivise the use of low-carbon materials in construction. [...] Enforce [...] green construction practices for buildings and other structures [...]." (NECCP, Policy Obj. 1 – Statement 4.2, p. 28).

Strong/explicit urban content

Waste management and Circular Economy

"Landfill gas utilization [...] for power generation in [...] landfills for urban areas. [...] Waste-to-energy (WtE) plants [...] in Kigali and other urban areas. Waste-water treatment plants (WWTP) investment and reuse technology" (NDC, p.41-42). "Promote circular economy" (NECCP, Policy Ob.1 – Statement 2, p. 27). "Promote waste recovery options as a high value resource stream especially in urban areas." (NECCP, Policy Obj. 4.4 – Statement 2, p. 33).

Strong/explicit urban content

Urban Planning and governance

"[...] Enhance and develop early warning systems for better planning in all sectors [including] urbanization." (NECCP, Policy Obj. 3, Statement 2.3, p. 32). "Strengthen environment and climate change governance" (NECCP, Policy Obj. 6, p. 36 and following)

Moderate/implicit urban content

Industry

"Efficient brick kilns. Phasing out use of clamp kilns, and applying energy efficiency measures in the brick manufacturing industry." (NDC, p. 36)

Moderate/implicit urban content

Adaptation

Floods

"Reduction of length of roads vulnerable to flood and landslides" (NDC, Measure n.19, p.54)

Moderate/implicit urban content

Land degradation

"Develop sustainable land management practices (soil erosion control; landscape management)" (NDC, Measure n. 7, p. 51) "Develop a harmonized and integrated spatial data management system for sustainable land use management" (NDC, Measure n. 14, p. 53).

Moderate/implicit urban content

Urban Informal Settlement

"High density buildings and informal settlement upgrading" (NDC, Measure n. 16, p. 53)

Strong/explicit urban content

Urban infrastructure and systems

"Stormwater management" (NDC, Measure n.17, p. 53). "Promote private sector investment, especially the development of appropriate water and sanitation technologies and infrastructure for waste management."

Strong/explicit urban content

Ecosystem and Wetland management

"Promote ecosystem-based approaches to climate change adaptation in local development agendas". (NECCP, Policy Obj. 4, Statement 1.5, p.33). "Promote sustainable management of wetlands" (NECCP, p. 30). "Develop a National Water Security [including] wetlands restoration" (NDC, Measure n.1, p.50)

Moderate/implicit urban content

Urban Planning

"Promote "green spaces" in urban centres to moderate temperatures and provide fresh air for healthy living." (NECCP, Policy Obj. 1 – Statement 4.4, p.28). "Strengthen adaptation mechanisms in planning and implementation (NECCP, Policy Obj. 4, Statement 1, p. 33).

Strong/explicit urban content

Disaster risk reduction

“Disaster risk monitoring - Number of effective city contingency plans developed” (NDC, Measure n..21, p.54)
“Establish an integrated early warning system and disaster response plans” (NDC, Measure, n.22, p. 54).

Moderate/implicit urban content

Social inclusion, gender, and community engagement

“Promote and encourage the mainstreaming of gender considerations in climate change issues”. (NDC, p. 73).
“Strengthen the implementation of community-based integrated ecosystem management plans [...]”. (NECCP, Policy Obj. 6 – Statement 2.3, p. 37) “Promote inclusivity in environmental management” (NECCP, Policy Obj. 6 – Statement 3.2, p. 37)

Moderate/implicit urban content

CONCLUSIONS AND RECOMMENDATIONS

KEY FINDINGS

The key findings of the preliminary global analysis of the urban content of the NDCs are:

- Over two-thirds of the NDCs analysed have a Strong or moderate urban content (132 out of 157).
- NDCs with urban content (Cluster A+B) have significantly increased in comparison with the 2016 analysis (from 69% in 2016 to 84% in 2021).
- NDCs with strong urban content (Cluster A) have significantly increased in comparison with the 2016 analysis (from 16% in 2016 to 45% in 2021).
- NDCs with combined urban mitigation and adaptation content is high (94 NDCs on 157 analysed).
- NDCs with strong adaptation content (Cluster A) have a very high combined urban mitigation and adaptation content (56 of 70 total in Cluster A).

The key findings of the in-depth country analysis in the three pilot countries are:

- The urban climate responses are not always aligned with the identified urban climate challenges.
- The urban content in the NDCs is not always fully harmonized with the urban content in other national climate policies.
- The urban content referred to climate mitigation and adaptation, also including the identified sectors, may require further integration for fully exploiting co-benefits.
- The lack of urban content in the NDCs does not necessarily equate with a lack of urban content in other national climate policies.

CONCLUSIONS

The initial global analysis shows a very significant inclusion of urban content in the NDCs in absolute terms compared to the first analysis released in 2016. A relevant 84% of the NDCs analysed has urban content (Cluster A+B), and 45% of the NDCs analysed have strong urban content with dedicated headers/section/paragraphs (Cluster A).

Although, it must be noted that countries that submitted NDCs with no explicit urban content do not necessarily lack climate urban policies and actions, which has become evident through the in-depth country analysis. Likewise, the NDCs with urban content, particularly those with moderate urban content (Cluster B), may still require further strengthening and integrating urban climate policies and actions.

The initial global analysis also shows that there is consistent progress on including combined urban mitigation and adaptation considerations in the NDCs, 60% of the NDCs address both mitigation and adaptation, of which 56 have strong urban content (Cluster A); although this does not directly equate in integrated urban policies generating co-benefits for both climate mitigation and adaptation.

The in-depth country analysis shows that the urban content is present in national policies, including NDCs, tackling both the identification of key climate urban challenges and responses for both climate urban mitigation and adaptation. Although, some key aspects may require further improvements, such as the

alignment between urban climate challenges and responses, the integration of urban mitigation and adaptation actions, and the harmonization of urban climate policies and actions across climate policies.

Overall, the analysis highlights a positive trend in the inclusion of urban content in national policies, but it is also evident that the current combined global climate efforts are still insufficient to tackle the causes and the effects of the climate crises. Cities are crucial for raising the ambition of global climate action and for achieving the goals of the Paris Agreement.

The preliminary global analysis and the in-depth country analysis, conducted on three countries, provides very useful information on the current status and perspective of the inclusion of urban content in the NDCs, and its integration in other climate policies. It is also clear that a more extensive global analysis and a scaling-up of the country analysis are also required to support informed policymaking in relation to the NDCs and other national climate policies and ultimately strengthen urban climate actions, which are fundamental for the successful implementation of the Paris Agreement.

RECOMMENDATIONS

As a key policy process at the core of the Paris Agreement, the NDCs and associated policies represent a valuable opportunity that countries can use to communicate their priorities and intended actions, which can in turn trigger access to technical assistance and access to finance. While there is encouraging progress on the inclusion of urban content in the recently updated NDCs, there is ample opportunity at the global level for greater articulation of the urban dimension in the NDC process cycle through the provision of tools and analytical approaches that provide methodological and strategic guidance towards implementation and future updates.

Furthermore, applying an urban lens to the NDC process can ratchet up climate action and help set countries on track for their intended targets and global progress towards the Paris Agreement goals. It is widely accepted that urbanization is rapidly expanding in almost every country. The urban system and the urban sub-sectors hold potential for innovation and economy-wide transformation. Considering sectoral targets and measures – both mitigation and adaptation – through an urban lens also promotes policy coherence and fair and inclusive multi-stakeholder participation under the principles of multi-level governance. Therefore, it is critical to institutionalise the inclusion of urban dimensions into the long-term NDC process.

As noted above, the present review summarises countries' self-diagnostics and self-assessments of opportunities for climate action in the urban sector, identified in the national climate policies analysed; it does not represent a full and direct assessment of opportunities for urban climate action. Upon request (and subject to available funding), UN-Habitat would be prepared to help countries explore opportunities for urban mitigation and adaptation solutions. Such priorities could be included in future NDCs or related climate policies.

Based on preliminary findings, the present analysis identifies five key areas with potential to enhance urban action within the NDC cycle of revision and implementation, as follows.

1. Climate ambition: increase ambition and harness the potential of city-level action, with additional emphasis on the rural-urban continuum.
 - While most Parties have submitted their updated or second NDCs by the 2021 deadline, there remains opportunity to continue strengthening the reach and magnitude of urban climate ambition through the continuous NDC update, implementation and evaluation cycle

that allows updates anytime and expects five-year revisions within a ten-year framework in addition to global stocktaking milestones.

- Consider the notion of systems thinking recognizing the continuity between the rural and urban environments to promote far-reaching integrated measures to both mitigation and adaptation challenges, also within a rural-urban continuum that is intrinsically interconnected.
2. Multi-level governance: strengthen multi-level climate governance structures through horizontal and vertical alignment in the NDC process.
 - Identify barriers to multi-level climate collaboration and incorporate enabling activities that advance coordination and unlock opportunities for integration of Regional and Local Contributions¹⁵ (RLCs).
 - Engage all levels and sectors of government and promote authority, financial autonomy and accountability accordingly.
 - Within the urban sector, it is pivotal to engage across all relevant urban sectors, for instance, energy, water, housing, transport and finance, and promote their participation in implementation to ensure long-term urban climate potential.
 3. Implementation and the role of sub-national actors: increase collaboration and participatory consultative processes with sub-national level stakeholders.
 - With the current second round of new/updated NDCs as of 2021, Parties are now embarking on operationalizing their commitments for the next five years. Local and regional governments can engage in dialogue to inform and guide in-country programming, national implementation plans and budget allocation efforts.
 - Urban and subnational stakeholders vary on a country basis but usually include stakeholders outside of government who can also play a vital role in leveraging urban climate action. This includes the private sector, community organizations, associations and in general civil society, particularly those representing vulnerable groups, the urban poor, informal workers, women, and youth. Promoting private sector involvement and establishing public-private partnerships can help ensure long-term investment.
 - Continuous participatory multi-stakeholder dialogue with local government, in particular, can help channel input from the local to the national level and positively influence decision-making and facilitate implementation.
 4. Policy coherence: as the above analysis demonstrates, the potential of NDCs to communicate and coordinate climate action has not been fully leveraged for more ambitious climate action. Policy coherence is critical, particularly the alignment of NDCs with relevant policies and planning instruments at the national and sub-national levels.

¹⁵ As proposed by the upcoming GCoM-led multi-partner publication “Multi-level Climate Action Playbook”, RLCs are a formal acknowledgement of the commitments and achievements of local and regional government authorities and their role in the global climate governance system. RLCs are designed to be integrated into the development of each Party’s NDC in a process of complementarity with existing commitments.

- Key policy documents such as National Adaptation Plans (NAPs), which are expected to serve as a tool for finance mobilization, need to be adequately referenced and aligned with the NDCs to maximize potential.
 - Integrate and harmonize national, sectoral and sub-national policies and planning frameworks with the measures, targets and actions proposed in the NDCs to ensure horizontal alignment between mitigation and adaptation challenges and responses in the urban sector.
 - Incorporate key elements of existing local climate plans to inspire a multiplying national effect.
5. Maximize how-to resources: utilize how-to and normative guides, research-based policy analysis, toolkits and case studies.
- How-to guides and technical assistance from partners can bolster the NDC process, providing a frame for accelerated climate action and sustainable urban development. (Annex A3 below contains a list of resources). For instance, the multi-partner guide promoted by UN-Habitat entitled “Enhancing Nationally Determined Contributions through Urban Climate Action” provides a user-friendly methodological approach to including urban content throughout the NDC process.¹⁶ Other actors such as GCoM, ICLEI, NDC Partnership, leading academia, EU and various UN agencies have a wealth of knowledge products that help inform the NDC process.

¹⁶ UN-Habitat, 'Enhancing Nationally Determined Contributions through Urban Climate Action', *UN-Habitat - A Better Urban Future*, 2020, https://unhabitat.org/sites/default/files/2020/06/ndc_guide_19062020.pdf (accessed 4 November 2021).

THE WAY FORWARD

In 2022, the United Nations Human Settlements Programme (UN-Habitat) and the University of Southern Denmark (SDU) intend to continue working on the global study of urban content in NDCs. It is expected that the feedback and input gathered in response to this white paper will strengthen the methodological approach presented above and, therefore, the magnitude and reach of the global study. UN-Habitat and SDU will continue to actively seek engagement with strategic partners to advance in this endeavour. Given the considerable interest in the first study and in earlier drafts of the White Paper, UN-Habitat and SDU expect to engage in potential partnerships with global partners like GCoM, ICLEI, NDC partnership, UNDP's NDC Support Programme, and various initiatives by other UN agencies including UNEP and UNFCCC as well as donors to ensure in-depth country analyses and follow up support becomes possible.

In parallel, UN-Habitat plans to continue the dialogue with the three countries featured in the current in-depth analyses to seek constructive engagement for potential programmatic support (January – June 2022). Support from external partners is sought for in-country policy advisory support for NDC enhancement and NDC action plan development and programming that supports the implementation of NDC priorities on the ground.

ANNEXES

A.1. LIST OF INDICATORS USED FOR THE NDCS' URBAN CONTENT ANALYSIS 2021

Geographic Indicators

Country ISO code

Country Name

Region name

Sub-region name

Country General Indicators

Total Population in 2020

Total population in 2010

Percentage urban population in 2020

Percentage urban population in 2010

Urban population percentage trend 2030

Urban population percentage trend 2040

Urban population percentage trend 2050

CO2 Emissions per country, 2018

CO2 Emissions per capita, 2018

Total GHG emissions per country 2018

GDP Country in 2020

GDP per capita. In 2020

Income categorization

Human Development Index

Human Development Index - Global ranking

NDCs General Indicators

Submission date

Mitigation Target

Mitigation Contribution Type

GHG Target type

Target quantity

Reference year

Target year

NDC Urban content

NDC Urban content Mitigation/Adaptation

Urban challenges (NDCs + other policies)

Urban Mitigation challenges - NDC

Transport

Water

Energy

Building

Waste

Food production

Land use and planning

Industry
Other
Urban Mitigation challenges - Other policies
Transport
Water
Energy
Building
Waste
Food production
Land use and planning
Industry
Other
Urban Adaptation Challenges - NDC
Floods and/or flash floods
Droughts
Sea level rise
Extreme weather events
Temperature rise
Heatwaves
Vector-borne diseases
Land degradation
Salt water intrusion
Informal settlement
Building stocks
Infrastructure
Nature-based solutions and ecosystem services
Planning and design
Disaster risk reduction
Social inclusion and gender
Other
Urban Adaptation Challenges - Other policies
Floods and/or flash floods
Droughts
Sea level rise
Extreme weather events
Temperature rise
Heatwaves
Vector-borne diseases
Land degradation
Salt water intrusion
Informal settlement
Building stocks
Infrastructure
Nature-based solutions and ecosystem services
Planning and design
Disaster risk reduction

Social inclusion and gender

Other

Urban responses (NDCs + other policies)

Urban Mitigation responses - NDC

Transport

Water

Energy

Building

Waste

Food production

Land use and planning

Industry

Other

Urban Mitigation responses - Other policies

Transport

Water

Energy

Building

Waste

Food production

Land use and planning

Industry

Other

Urban Adaptation responses - NDC

Floods and/or flash floods

Droughts

Sea level rise

Extreme weather events

Temperature rise

Heatwaves

Vector-borne diseases

Land degradation

Salt water intrusion

Informal settlement

Building stocks

Infrastructure

Nature-based solutions and ecosystem services

Planning and design

Disaster risk reduction

Social inclusion and gender

Other

Urban Adaptation responses - Other policies

Floods and/or flash floods

Droughts

Sea level rise
Extreme weather events
Temperature rise
Heatwaves
Vector-borne diseases
Land degradation
Salt water intrusion
Informal settlement
Building stocks
Infrastructure
Nature-based solutions and ecosystem services
Planning and design
Disaster risk reduction
Social inclusion and gender
Other

A.2. LIST OF COUNTRIES WHOSE NDCS' URBAN CONTENT WAS ANALYSED



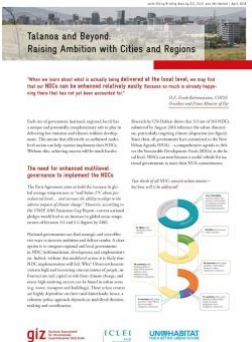

#	Country
1	Afghanistan
2	Albania
3	Algeria
4	Andorra
5	Angola
6	Antigua and Barbuda
7	Argentina
8	Armenia
9	Australia
10	Azerbaijan
11	Bahamas
12	Bahrain
13	Bangladesh
14	Barbados
15	Belarus
16	Belize
17	Benin
18	Bhutan
19	Bolivia (Plurinational State of)
20	Bosnia and Herzegovina
21	Botswana
22	Brazil
23	Brunei Darussalam
24	Burkina Faso
25	Burundi
26	Cabo Verde
27	Cambodia
28	Canada
29	Central African Republic
30	Chad
31	Chile
32	China
33	Colombia
34	Comoros
35	Congo
36	Cook Islands
37	Costa Rica
38	Côte d'Ivoire
39	Cuba
40	Democratic People's Republic of Korea
41	Democratic Republic of the Congo
42	Djibouti
43	Dominica
44	Dominican Republic
45	Ecuador
46	Egypt

47	El Salvador
48	Equatorial Guinea
49	Eritrea
50	Eswatini
51	Ethiopia
52	EU-Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden,
53	Fiji
54	Gabon
55	Gambia
56	Georgia
57	Ghana
58	Grenada
59	Guatemala
60	Guinea
61	Guinea-Bissau
62	Haiti
63	Honduras
64	Iceland
65	India
66	Indonesia
67	Israel
68	Jamaica
69	Japan
70	Jordan
71	Kazakhstan
72	Kenya
73	Kiribati
74	Kuwait
75	Kyrgyzstan
76	Lao People's Democratic Republic
77	Lebanon
78	Lesotho
79	Liberia
80	Liechtenstein
81	Madagascar
82	Malawi
83	Malaysia
84	Maldives
85	Mali
86	Marshall Islands
87	Mauritania
88	Mexico
89	Micronesia (Federated States of)
90	Monaco
91	Mongolia
92	Montenegro

93	Morocco
94	Mozambique
95	Myanmar
96	Namibia
97	Nepal
98	New Zealand
99	Nicaragua
100	Niger
101	Nigeria
102	Niue
103	Norway
104	Oman
105	Pakistan
106	Panama
107	Papua New Guinea
108	Paraguay
109	Peru
110	Philippines
111	Qatar
112	Republic of Korea
113	Republic of Moldova
114	Russian Federation
115	Rwanda
116	Samoa
117	San Marino
118	Sao Tome and Principe
119	Saudi Arabia
120	Senegal
121	Serbia
122	Seychelles
123	Sierra Leone
124	Singapore
125	Solomon Islands
126	Somalia
127	South Africa
128	South Sudan
129	Sri Lanka
130	St. Lucia
131	State of Palestine
132	Sudan
133	Suriname
134	Switzerland
135	Syrian Arab Republic
136	Tajikistan
137	Thailand
138	The Republic of North Macedonia
139	Timor-Leste
140	Togo

141	Tonga
142	Trinidad and Tobago
143	Tunisia
144	Turkmenistan
145	Uganda
146	Ukraine
147	United Arab Emirates
148	United Kingdom of Great Britain and Northern Ireland
149	United Republic of Tanzania
150	United States of America
151	Uruguay
152	Uzbekistan
153	Vanuatu
154	Venezuela (Bolivarian Republic of)
155	Viet Nam
156	Zambia
157	Zimbabwe

A.3. UN-HABITAT ACTIVITIES/PUBLICATION

COVER	TITLE	YEAR	SUMMARY	LINK
 <p>ADDRESSING CLIMATE CHANGE IN NATIONAL URBAN POLICY A Policy Guide for Low-Carbon and Climate-Resilient Urban Development</p> <p>CITIES AND CLIMATE CHANGE INITIATIVE POLICY GUIDE NO. 4</p> <p>UN-HABITAT FOR A BETTER URBAN FUTURE</p>	<p>Addressing Climate Change in National Urban Policy</p>	<p>2016</p>	<p>This Guide recommends how to mainstream considerations of climate change in cities and human settlements into National Urban Policy.</p>	<p>https://unhabitat.org/addressing-climate-change-in-national-urban-policy</p>
 <p>SUSTAINABLE URBANIZATION IN THE PARIS AGREEMENT</p> <p>UN-HABITAT FOR A BETTER URBAN FUTURE</p>	<p>Sustainable Urbanization in the Paris Agreement</p>	<p>2017</p>	<p>An analysis of the Nationally Determined Contributions (NDCs) towards the Paris Agreement on Climate Change, with a special focus on the urban context.</p>	<p>https://unhabitat.org/sustainable-urbanization-in-the-paris-agreement</p>
 <p>Talanoa and Beyond: Raising Ambition with Cities and Regions</p> <p>UN-HABITAT FOR A BETTER URBAN FUTURE</p>	<p>Talanoa and Beyond: Raising Ambition with Cities and Regions, Joint Policy Briefing Note</p>	<p>2018</p>	<p>Short paper presenting evidence to demonstrate that each tier of government (national, regional, local) has a unique and potentially complementary role to play in delivering low emission and climate resilient development.</p>	<p>https://unhabitat.org/talanoa-and-beyond-raising-ambition-with-cities-and-regions</p>
 <p>Enhancing Nationally Determined Contributions through Urban Climate Action</p> <p>UN-HABITAT FOR A BETTER URBAN FUTURE</p>	<p>Enhancing Nationally Determined Contributions through Urban Climate Action</p>	<p>2020</p>	<p>This guide provides practical opportunities for incorporating urban climate action and human settlement issues into the current NDC revision and enhancement process, drawing on existing knowledge.</p>	<p>https://unhabitat.org/enhancing-nationally-determined-contributions-through-urban-climate-action</p>