Global Alliance for Buildings and Construction

Roadmap for Buildings and Construction in Latin America

Presentation and feedback

Agenda

Global Alliance for Buildings and Construction

1. Welcome and introduction (10 mins)
2. Activities in 2019 (5 mins)
3. Summary of findings (25 mins)
4. Discussion (30 mins)
5. Summary of next steps (5 mins)

GlobalABC in a nutshell

Global Alliance for Buildings and Construction

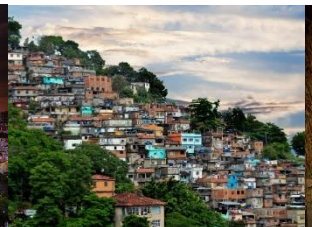
Founded at COP21 and hosted by UNEP, the Global Alliance for Buildings and Construction (GlobalABC) is an international initiative with 128 members, including 29 countries, focused on:

- ✓ ***Raising ambitions to meet the Paris climate goals***
- ✓ ***Mobilizing all actors along the value chain***

In a nutshell, *the GlobalABC is working towards zero-emission, efficient, and resilient buildings and construction through:*

Giving a voice	**to the buildings sector regarding it's impact and potential.**
Collaborating	**for partnerships, technology and know-how sharing.**
Finding solutions & pathways	**that put the building sector on a below 2°C path:**




UN environment
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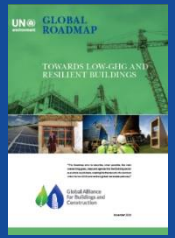
Key Activities

Forging pathway towards zero-emission, efficient, and resilient buildings and construction



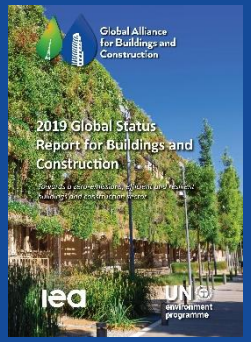
Global & regional roadmaps

NDC guide

Facilitating regional knowledge exchange & bridging fragmented value chains

Regional Roundtables & national alliances

Keeping the buildings and construction sector under review



Global Status Report for buildings and construction

Shaping the global agenda

High-Level Events

Global Alliance for Buildings and Construction

UN environment
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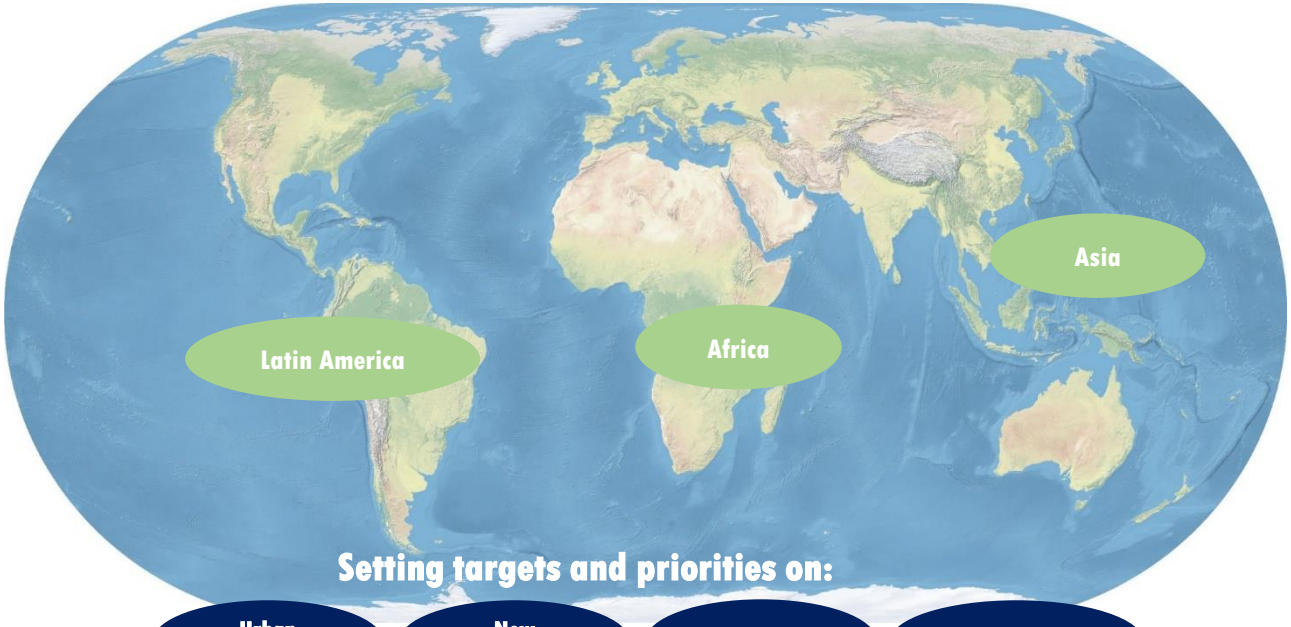
Regionalizing the Roadmap

Forging regional pathways towards a zero-emission, efficient, and resilient buildings and constructions sector 2020-2050

Aim: Raise ambition levels in regions - roadmaps and the targets outlined can be used as benchmarks for developing national policies or roadmaps. Developed jointly with the International Energy Agency IEA



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For more information

- www.globalabc.org
- global.abc@un.org
- Twitter: twitter.com/join_GlobalABC
- Linkedin: www.linkedin.com/company/join-GlobalABC

Contact us and learn more about becoming a member!

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Latin America Roadmap for Buildings and Construction

2020-2050

Targets and timelines to achieve zero-emission, efficient and resilient buildings and construction

Read more about the project here and here.

A collaboration of the IEA (Clean Energy Transitions and Energy Efficiency in the Emerging Economies programmes) and the Global Alliance for Buildings and Construction | United Nations Environment Programme (UNEP)
Supported by WRI and WorldGBC

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Overview of document structure

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Document structure:

- **Summary timelines + key actions**
- **Regional Overview**
- **8 activities:**

- Regional trends
- Key actions
- Stakeholders
- Policy timelines + regional examples
- Technology timelines + regional examples
- Finance
- Capacity building
- Multiple benefits

- **Enablers: capacity building, finance, stakeholders**

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Activities in 2019

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List activities undertaken in Latin America to fill the roadmap

9-12 October 2018 – Buenos Aires, Argentina: XXI Meeting of the Forum of Ministers of Environment of Latin America and the Caribbean - ** Buenos Aires Declaration **

10 October 2018 – Buenos Aires, Argentina: Regional Roundtable for Latin America

16 May 2019 – San Jose, Costa Rica: Congreso Internacional Ciudades Sostenibles 2019

30 July 2019 – Webinar: Regional Roadmap for Latin America (Spanish)

20 August 2019 – Webinar: Regional Roadmap for Latin America (Portuguese)

21 August 2019 – Salvador, Brazil: LACCW- ICLA| urban areas and informal settlements session

September - November – Over 70 responses to online surveys for Latin America

26 September 2019 – Mexico D.F, Mexico: ALENER | Relaunching of GlobalABC Mexico | LAC roadmap

31 October 2019 – Online: GlobalABC Roadmaps: Latin America call on Building Operations and Systems

19 November 2019 – Webinar: Latin America Enablers

26 November 2019 - Rio de Janeiro, Brazil: Workshop “Urban Planning, Clean Energy and Resilience: Strategies to Advance Sustainable Buildings and Construction in Latin America”

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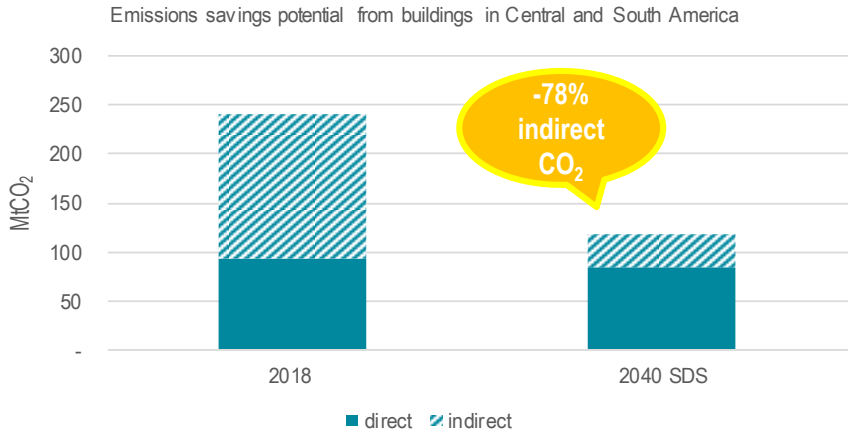
Findings – Overview

- Buildings in account for 24% final energy consumption and 21% CO_2 emissions in South and Central America
- Key sector for tackling climate change with over 120 $MtCO_2$ emissions savings possible by 2040



Energy overview – outlook to 2040

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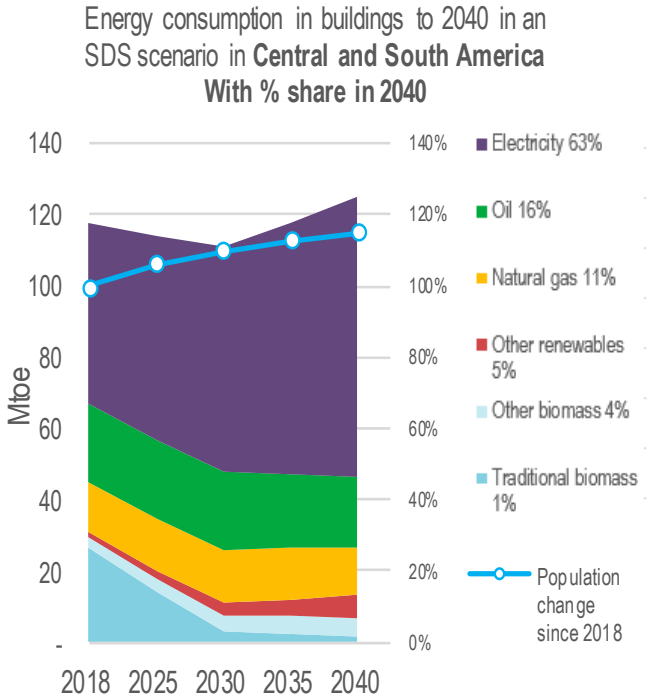

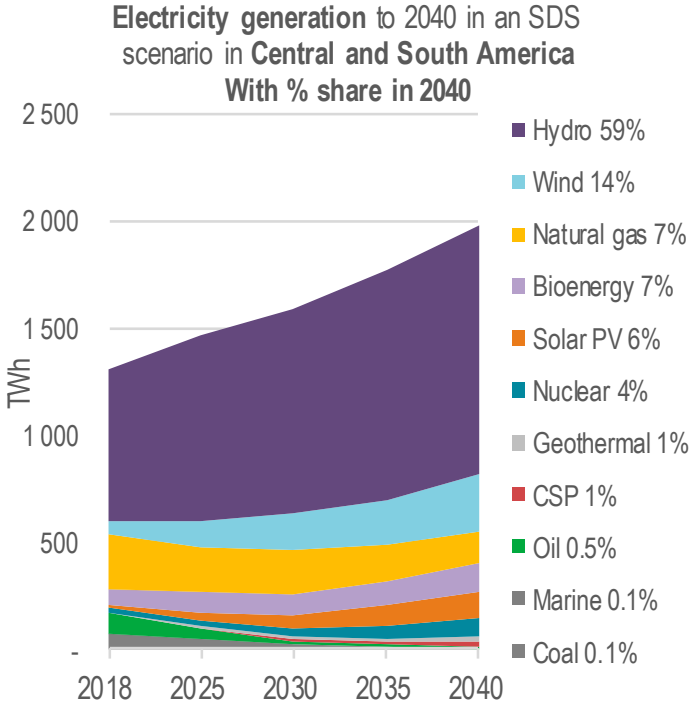

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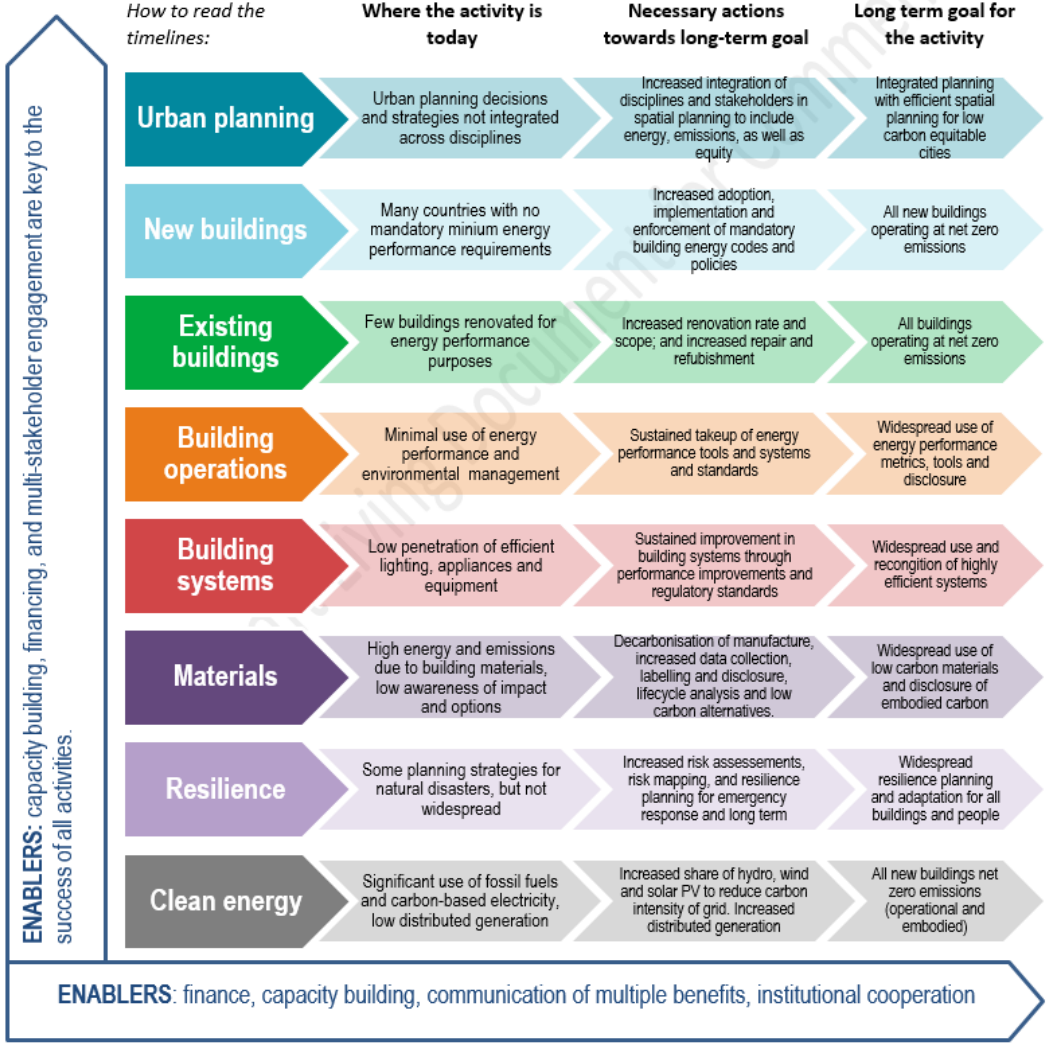

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Some common findings across the themes:

- Lack of integration and coordination across disciplines
- Lack of mandatory regulatory policies
- Lack of data and knowledge of the baseline

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Findings – New buildings

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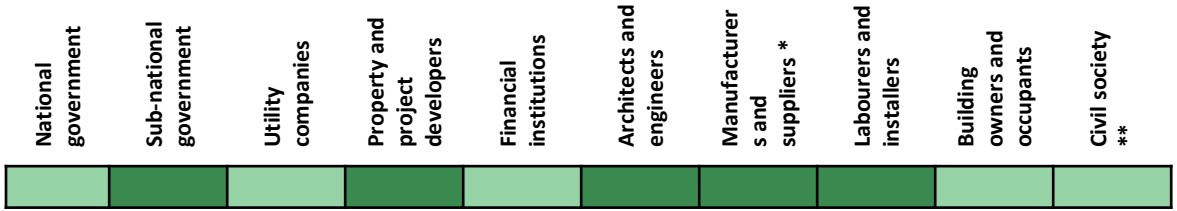
Trends and challenges in Latin America

- In LAC, floor area is expected to grow by 65% by 2050, dominated by another almost 11 billion m^2 residential buildings by 2050 (IEA, 2017). Increasing incomes are driving up floor area and appliance ownership per capita.
- A few countries have codes that are mandatory or voluntary for part of the sector, such as Argentina, Brazil, and Mexico, while others are in the process of developing their first building energy code.
- The informal sector is responsible for up to 75% new housing

Key actions

- Develop national **strategies** to decarbonise new and existing buildings
- Develop, implement, and progressively strengthen **mandatory energy codes that are integrated across relevant disciplines**
- Increase the use of **design tools**
- Reduce **embodied** and **operational carbon** through materials and clean energy measures
- Increase **awareness** and **information** on the benefits of more sustainable buildings



Notes

* of appliances and materials

** including academia, NGOs, research institutions, social networks, and community associations

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New buildings - policies

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	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.			
Building energy codes	Several countries with voluntary or mandatory codes for part of the sector	**Mandatory for most of sector, including social housing** Some with voluntary near zero codes	**Mandatory for all buildings, including social housing** Most with near zero carbon codes	**All countries with near zero carbon codes**
Compliance with building codes	Little of enforcement and monitoring of compliance by local jurisdictions	**Monitoring framework and tools for compliance in place** About half buildings compliant with code	**Most new buildings compliant with code** All buildings compliant	**All new buildings compliant with code**
Participation of the informal sector	High share of construction in the informal sector, not compliant with standards	**Tools to enable simplified compliance** Most countries monitor informal building	**Tools for simplified compliance in all countries** Most informal building sector compliant	**Both informal and formal sector meeting minimum standards of regulation**
Building labelling	Few buildings receiving volutuntary labels or certifications	**About half new buildings with labels** Labelling is mandatory for most buildings	**Most new buildings with labels** Mandatory for all buildings	**All countries to make building labelling mandatory**
Labelling of building components	Little information on performance of building materials	**Mandatory labelling for main components** Includes embodied carbon	**Mandatory labelling including carbon** Compliance in all countries	**Mandatory comprehensive labels for roof, wall and glazing materials**

There is strong consensus that requirements for net zero buildings should be on a voluntary basis from 2030, and mandatory for all new buildings by 2050.

Ambition gap: *There is consensus that reaching 100% compliance will be challenging, with only "about half" to "most" new buildings reaching compliance by 2050.*

Data gap: *The high participation of the informal construction sector was raised by several respondents as a key barrier.*

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New buildings - policies

Global Alliance for Buildings and Construction

	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.			
Building passports	Limited voluntary adoption and silo information collection	**Widespread with basic information** Includes materials	**Includes embodied carbon** About half buildings with full passport	**Widespread use of comprehensive passports for all new buildings**
Lifecycle analysis	Minimal lifecycle analysis tools and adaptation	**LCA mandatory for most new buildings** National database for main materials	**Complete database for all materials** LCA mandatory for all new buildings	**Comprehensive LCA mandatory for all buildings. All countries have data for all materials**
Incentives	Minimal incentives for low energy/ carbon buildings	**Increased use of financial and non-financial incentives to reward high performance**		

Data gap: *The respondents in the regions stated that few tools to enable robust lifecycle analysis are available today. It is estimated that only up to "about half" new buildings will be undertaking lifecycle analysis by 2050.*

New buildings - technologies

Global Alliance for Buildings and Construction

	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.			
Building envelope	Typical: 180 W/m² Overall Thermal Transfer Value (OTTV)	**Reduce typical OTTV by 20-30% over its current value** Reduce by 40%	**Reduce typical OTTV by 40-50% over its current value** Reduce by 50%	**Reduce OTTV to half its current value**
Insulation	Insulation is used very little in hot climates, some in colder climates.	**Insulate roofs in about half new buildings** Insulate roofs and walls in half new buildings	**Insulate roofs in most new buildings** Insulate roofs and walls in most new buildings	**Insulate roofs and walls in all new buildings, in all climates**
Windows (thermal)	Typical: single glazing, high thermal transmittance	**Increased use of double glazing in commercial sector** Increased use in residential buildings	**Use of double glazing further increased** Increased use of triple glazing	**Double or triple glazing availalbe and used where appropriate**
Windows (solar)	Simple, unprotected glazing common	**Low-e coatings in commercial buildings** Increased use of low-e in residential	**Increased use of low-e coatings** Use of low-e in residential further increased	**Widespread use of low-e or solar control glass where appropriate**
External shading	Use of external shading not widespread.	**External shading in about half new buildings** In more than half new buildings	**In more than half new buildings** In almost all new buildings	**Use of static and movable external shading widespread in all buildings**

Data gap: *There was large divergence and uncertainty in common typical values, however there was consensus on the rate of improvement of the typical value.*

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New buildings - technologies

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	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.			
Reflective surface finishes	Use of light or reflective surfaces not widepread in all countries	**Reflective surfaces for roofs for most new buildings** Reflective roofs and walls	**Reflective surfaces for roofs for all new buildings** Reflective roofs and walls	**Use of light or reflective roofs and walls widespread in all countries**
Passive cooling	Natural ventilation not always optimised in non-residential buildings.	**Few new buildings optimise natural or hybrid ventilation** About half new buildings	**About half new buildings to optimise natural or hybrid ventilation** Most new buildings	**Maximum utilisation of natural or hybrid ventilation in all types of buildings**
Daylighting	Typically minimal opimisation of natural light through design or controls.	**About half new buildings optimise daylight** Most new buildings	**Most optimise daylight** All new buildings	**All new buildings to undertake analysis to optimise daylight**
Design tools	Little use of tools in the design process of new buildings	**Integrated design in most projects** BIM and simulation used in design phase	**Integrated design in all projects** Increased use of BIM and simulation	**Integrated design process and simulation tools for all construction projects**

Ambition gap: *There is consensus that the optimisation of daylight is an area of improvement between now and 2050, however some believed it would only become widespread in about half of new buildings.*

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Findings – Resilience

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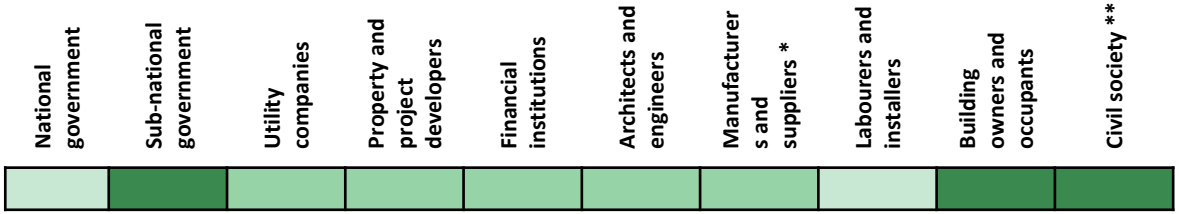
Trends and challenges in Latin America

- Main risks: flooding, sea level rise. Warming and change in rainfall in the Andean countries, drought and flooding in south.
- Currently at least 15 cities in nine Latin American countries have developed resilience strategies.
- Integrated resilience planning and coordination across government is a challenge

Key actions

- Use data and information for integrated urban planning and risk zoning
- Develop risk maps and integrated assessment plans
- Develop adaptation construction techniques to resist wind, water, heat, humidity



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Resilience - policies

Global Alliance for Buildings and Construction

	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)	
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.				
Risk mapping	Not all countries have mapped risks and vulnerability of population	**All countries with basic risk and vulnerability mapping**	**All countries with comprehensive risk and vulnerability mapping**	**All countries with comprehensive risk and vulnerability mapping**	Data gap
Resilience strategy	Few national resilience strategies. Few city level resilience strategies.	**Most countries with National Strategy** About half jurisdictions with Local Strategy	**All countries with National Strategy** Most jurisdictions with Local Strategy	**Comprehensive local and national resilience strategies**	
Resilience in building codes	Minimal resilience incorporated in building codes	**50% codes in high risk cities include resilience** 50% all codes	**75% codes in high risk cities include resilience** 75% all codes	**All building codes to incorporate resilience**	
Adaptation programmes for existing buildings	Minimal adaptation of at risk buildings, and minimal equity in decisions	**Most jurisdictions have strategies in place for adaptation of most vulnerable buildings**	**All jurisdictions implement measures for adaptation of all buildings at risk**	**All buildings adapted to local risks or not located in risky areas**	Data gap
Data and monitoring	Minimal data collection and monitoring of risks and events	**About half jurisdictions monitor risks/events** Early warning systems in most vulnerable cities	**Most jurisdictions monitor risks** Comprehensive data and monitoring available	**Comprehensive data collection and monitoring of risks and events in all jurisdictions**	Data gap

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Resilience - technologies

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	Current status (2019)	Short-term (2030)	Medium-term (2040)	Long-term (2050)	
	Note: in **bold** is the **proposed regional target.** Below that is the proposed accelerated target.				
Social networks	Fragmented or powerless community networks	**Most vulnerable populations supported by community networks**	**All vulnerable populations supported by community networks**	**Strong and cohesive social networks**	**Data gap**
Adaptation tools to extreme weather	Few tools and low knowledge to adapt buildings to extreme heat	**Strategies for emergency response to extreme weather** Adaptation strategies for about half buildings	**Adaptation strategies for about all buildings** Strategies for short and long term response to extreme weather	**Widespread awareness and strategies in events of extreme weather**	**Data gap**
Stormwater management	Limited use of vegetation or other stormwater management strategies	**Most buildings and cities with stormwater strategy** Permeable areas in risk areas increased by 50%	**Most buildings and cities with stormwater strategy** Permeable areas in risk areas increased by 100%	**Widespread vegetation strategies for stormwater management**	**Data gap**
Resilient power distribution	Frequent power outages due to extreme weather	**Increased back-up power distribution systems (not fossil fuel)** Power outages reduced by 50%	**Increased back-up power distribution systems (not fossil fuel)** Power outages reduced by 80%	**Resilient power distribution systems in event of extreme weather**	**Data gap**

Data gap: *How are risks and preparedness plans being communicated and what systems are in place to provide resilience?*

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Findings – enablers

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Training	Data	Institutional coordination	Financing
Core university curricula	Baseline data & tools	Vertical and horizontal	Need reliable data
Professional training	Little consensus around what needs are	Clear responsibilities	Best practice sharing
	Need political will	GBCs or equivalent convening role	Tools needed to unlock finance already available

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Moderated discussion

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Help us fill some of the gaps:

- Access the questions and submit your answers clicking on the link in the webinar chat box.

- See the results here:
- https://www.mentimeter.com/s/87f978aa460c708304bd9232aae1511a/88ea1cfe056d

Help us fill some of the gaps

Global Alliance for Buildings and Construction

1) What are common practices of nature-based solutions, local building designs and materials used to address climate conditions in your region?

- Passive design
  - Solar shading, louvres, large eaves, pots (MX, BR)
  - Designing according to climate (MX project to regulate this with housing developers)
  - Green roofs (fiscal incentive in Mexico City), green walls, vegetation for shading, native plants requiring little or no irrigation
  - ventilation openings, cross ventilation, natural ventilation (MX, BR)
  - Traditional architecture and construction techniques (stone, passive design, local materials etc)
- Material choices for thermal properties
  - local materials: ceramic tiles for better insulation (BR)
  - Local wood, clay, adobe materials for temperate/cold weather for insulation (MX)
  - Peru: stone and adobe in highlands, wood, bamboo and straw in the Amazon rainforest. Problem on coast where not using appropriate materials
- Construction techniques:
  - Straw based structural systems, straw and mud (Quincha), brick (Peru)
  - Slope stabilisation with structure soil confinement, deep-root vegetation
  - Stormwater management: retention ponds, vegetation
  - Use of local materials becoming increasingly difficult with cheaper imports becoming available (Uruguay)
  - Planning: multi use land services, adaptation of public spaces
- Regulation
  - Some countries with policies to encourage traditional architecture and passive design (MX,
  - Costa Rica – starting to include sustainable construction and decarbonisation requirements in policies
  - Requirements for social housing (BR, MX)
  - Many passive design measures driven by voluntary rating systems
  - RESET certification system for tropical climates (Costa Rica also using as basis for policies)

Help us fill some of the gaps

Global Alliance for Buildings and Construction

2) What are examples of resilience to climate vulnerability of buildings in your region?

- **Stormwater management**
  - Sustainable urban drainage
  - Increased vegetated infrastructure
  - Monitoring and cleaning rivers
- **Water conservation**
  - Water conservation, reuse
  - Drip irrigation
- **Construction techniques**
  - temporary movable constructions (BR, Chile)
- **Data collection and monitoring**
  - Risk maps, flood maps (Uruguay)
  - Identifying and monitoring vulnerable settlements (Uruguay)
  - Quantify cost-benefit of resilient design (Costa Rica)
- **Inclusion of resilience in land use planning policies**
  - Argentina, Uruguay, Chile. Incentives for subnational governments
  - Adaptation in the hotel sector in Mexico

Help us fill some of the gaps

Global Alliance for Buildings and Construction

3) How can we ensure that these Roadmaps are inclusive, including for example, the informal sector?

- Political will
  - Specific programmes to support their inclusion, supported by the public administration
  - Ensure topics aligned with housing and urban policies in the region
- Education
  - Training, learning networks
  - Communicating the importance and benefits
  - Guidelines, identify solutions for social housing
  - Local housing institutions could have central role
- Dissemination, advocacy
  - By local, municipal housing entities, formation of alliances
  - Collaborate with authorities in charge of social programmes
  - Work with leaders of native populations and non-urban areas
- Use incentives, reduce costs
- Data collection and monitoring
  - Informal sector responsible for 85% residential units (BR)
  - 70% construction sector is informal in Peru
  - Collect more data at local government level, monitor

Moving forward

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4) How do you think these documents could best be used to create impact in your region?

- Dissemination of the Regional Roadmap
  - Strong marketing, seminars, workshops, congresses, social media, publications, interviews
  - Synchronise dissemination across countries to create more momentum
  - Use in training material
  - Translate into local languages
  - Dissemination among government, academia, private and public sector, by local representatives of that sector
  - Ensure dissemination among municipalities and local regulators
- Creation of national versions
  - National roundtables to help governments adapt to national context
  - Including local actors (public and private across sectors)
  - Use regional roadmap as a benchmark between local and national stakeholders and create implementation strategies based on what similar countries have achieved
- Creation of implementation strategies
  - Consider regular housing, informal housing, (commercial?) buildings
- Use data as basis for climate policy
  - NDC, LTS
  - Use some of the transferable core aspects as common directives for mitigations
- Platform for knowledge sharing
  - including policies and successful implementation strategies
  - Best practices and local examples
- Ensure evaluation strategy and data collection on policies from start

Moving forward

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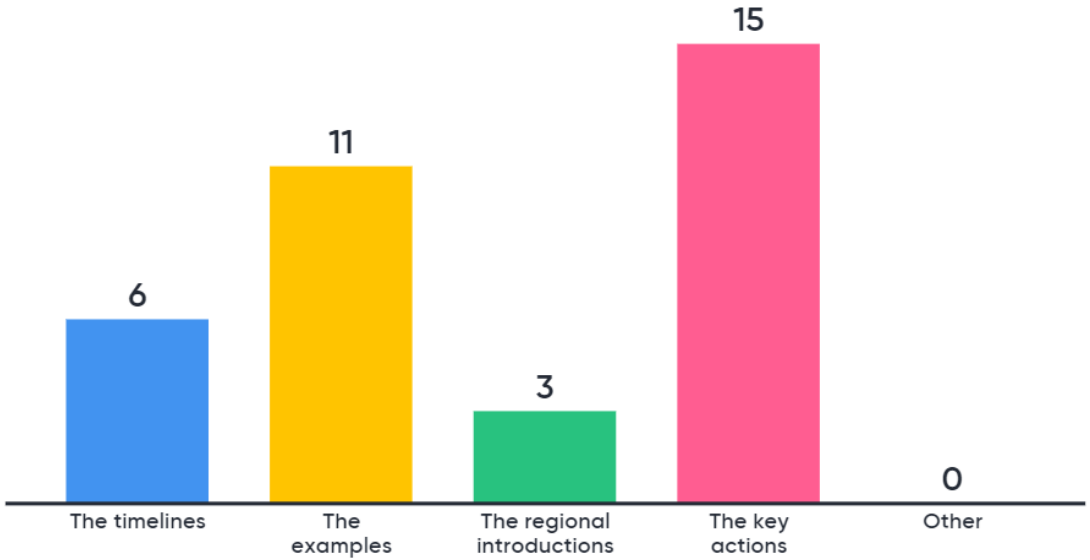
5) Which parts or aspects of the documents are the most interesting or useful to disseminate?



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Moving forward

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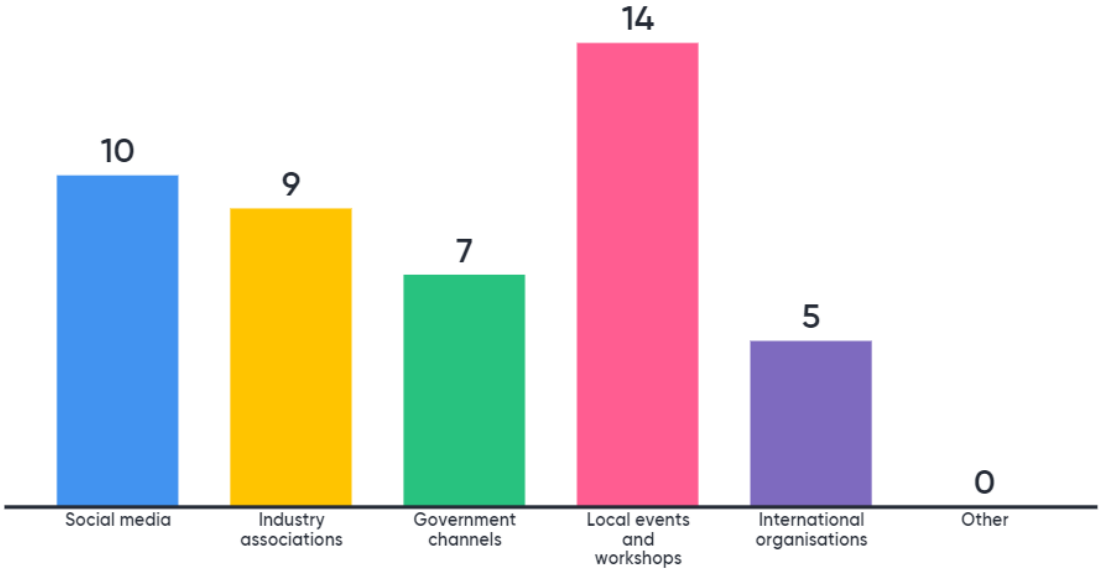
6) Which are the communication channels that will create most visibility for this document?



Moving forward

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We'd like to hear your ideas on how the Roadmaps should best be used to create the most impact:

- Access the questions and submit your answers clicking on the link in the webinar chat box.

Practical information

- **Provide comments by 3rd February** (e.g. examples, missing information, suggestions on timelines, etc)
- **Launch in March 2020 – downloadable pdf's on IEA and GlobalABC websites**
- **Informing National Roadmaps and National Implementation Plans -> get in touch if interested for your country**

Thanks again for your collaboration!

Global Alliance for Buildings and Construction

Contact: global.abc@un.org and buildings@iea.org

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