



Global Alliance  
for Buildings and  
Construction

# Roadmap for Buildings and Construction in Asia

*Presentation and feedback*



# Agenda

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

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 its 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:**





# Key Activities

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



**Global &  
regional  
roadmaps**

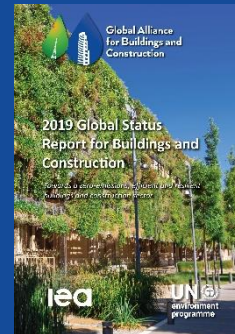
**NDC guide**

**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**



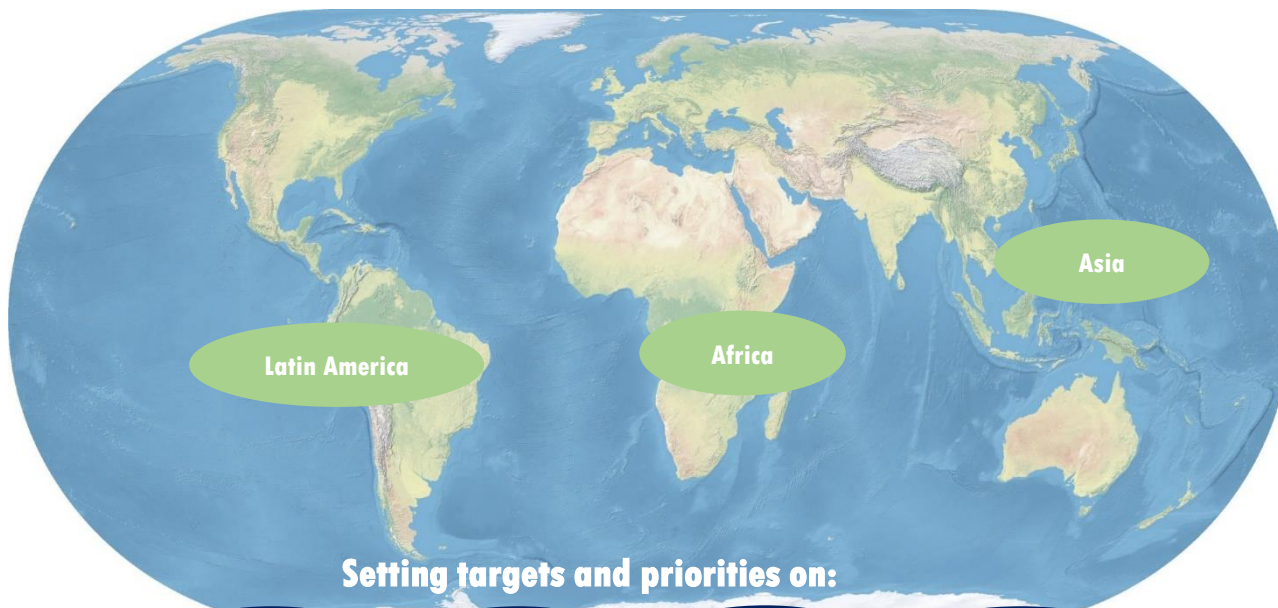
**High-Level Events**



# 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



**Setting targets and priorities on:**



# For more information

- [www.globalabc.org](http://www.globalabc.org)
- [global.abc@un.org](mailto:global.abc@un.org)
- Twitter: [twitter.com/join\\_GlobalABC](https://twitter.com/join_GlobalABC)
- LinkedIn: [www.linkedin.com/company/join-GlobalABC](https://www.linkedin.com/company/join-GlobalABC)

Contact us and learn more about becoming a member!



# Asia 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](#).

# Overview of document structure

## Document structure:

- Summary timelines + key actions
- 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

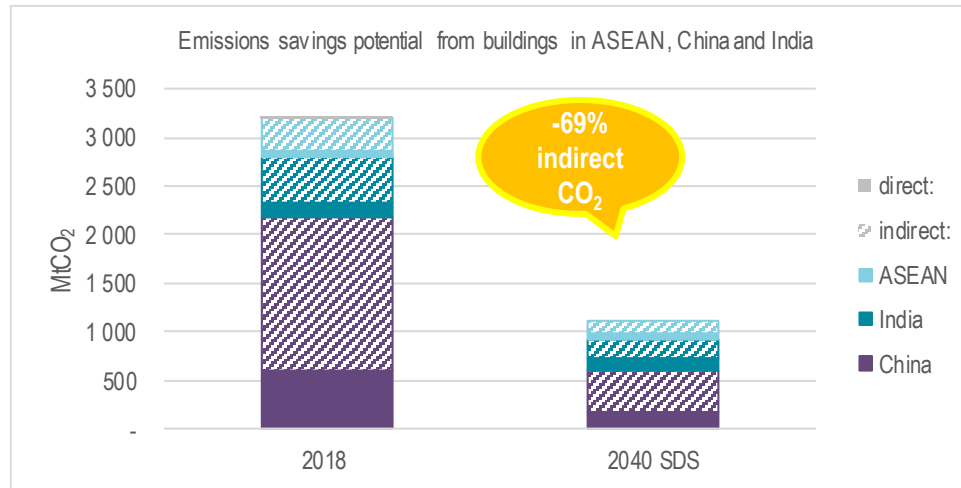


## Activities undertaken in Asia to fill the roadmap:

- [16-18 July 2019](#) - Singapore: Singapore-IEA Regional Training Programme on Green Buildings
- [6 August 2019](#) - New Delhi, India: Stakeholder consultation with the Bureau of Energy Efficiency of India
- [5 September 2019](#) - Bangkok, Thailand: Regional Roundtable for Asia Pacific - APCW2019
- [September - November](#) - Almost 60 responses to online surveys for Asia
- [15-17 October 2019](#) - Penang, Malaysia: Asia Pacific Urban Forum - APUF 7
- [20 November 2019](#) - Webinar: Asia Enablers

# Findings - Overview

- Buildings account for 27% final energy consumption and 24% CO<sub>2</sub> emissions (in ASEAN + China + India)
- Key sector for tackling climate change with over 2000 MtCO<sub>2</sub> emissions savings possible by 2040

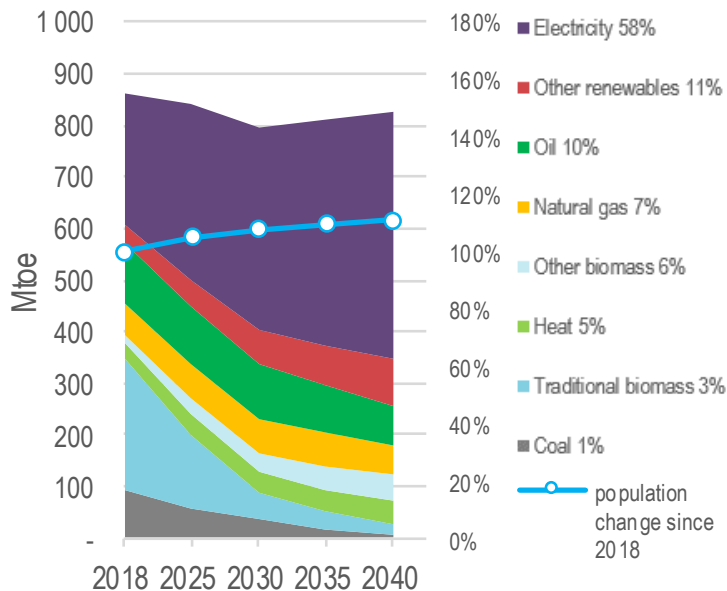


Note: operational emissions only

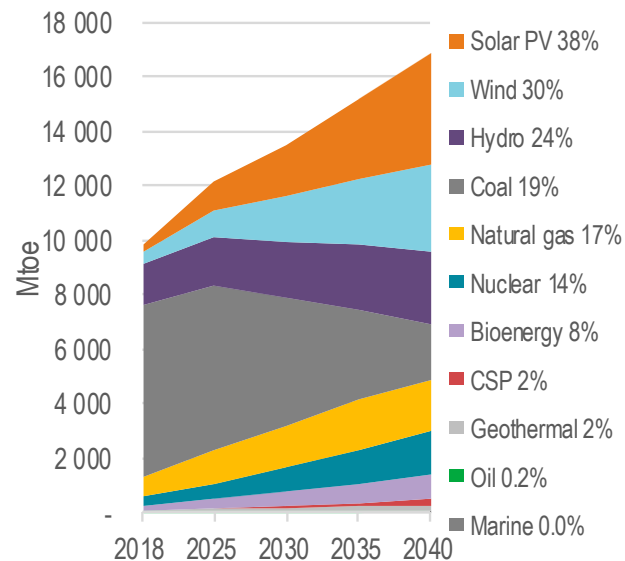
Source: 2019 World Energy Outlook, IEA

# Energy overview - outlook to 2040

Energy consumption in buildings to 2040 in an SDS scenario in ASEAN, China and India  
With % share in 2040



Electricity generation to 2040 in an SDS scenario in ASEAN, China and India  
With % share in 2040



Source: 2019 World Energy Outlook, IEA

How to read the timelines:

Where the activity is today

Necessary actions towards long-term goal

Long term goal for the activity



Global Alliance for Buildings and Construction

ENABLERS: capacity building, financing, and multi-stakeholder engagement are key to the success of all activities.



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

ENABLERS: finance, capacity building, communication of multiple benefits, institutional cooperation



WORLD GREEN BUILDING COUNCIL



WORLD RESOURCES INSTITUTE

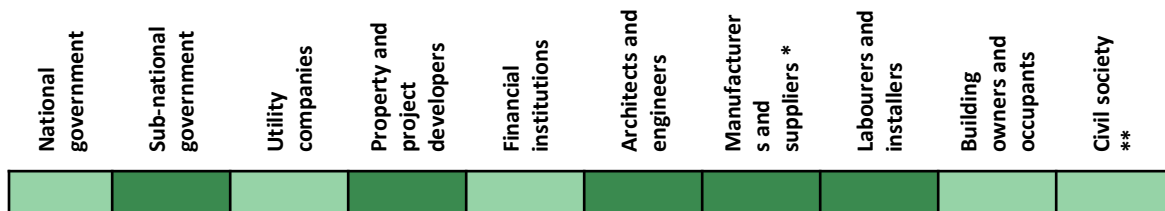


## Trends and challenges in Asia

- Region with greatest rise in floor area in coming years. Another 70 billion m<sup>2</sup> in ASEAN, China and India alone by 2050 (IEA 2017).
- Increasing incomes are driving up floor area and appliance ownership per capita.
- Majority of countries have no building codes in place. Some have voluntary codes, and only Japan, China and Korea have mandatory codes for all sector.
- Challenges in building code implementation and enforcement.

## Key actions

- Develop a national **strategy** to decarbonise new and existing buildings
- Develop, implement, and progressively strengthen **mandatory energy codes that are integrated across relevant disciplines**
- **Avoid the need for space cooling by design**
- 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

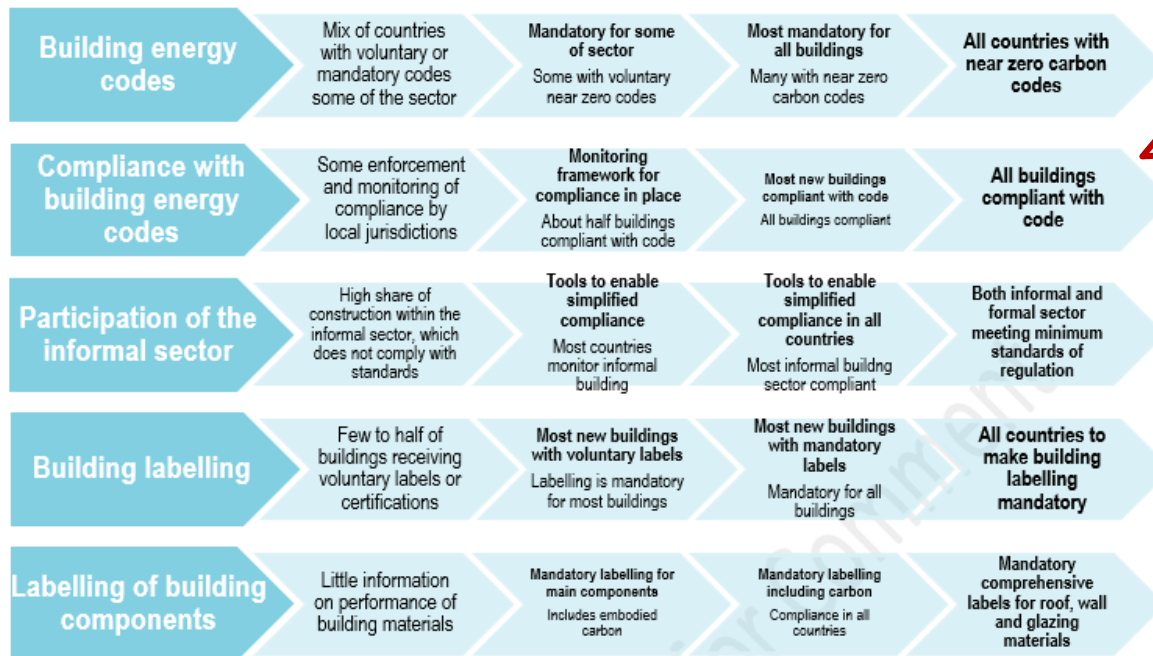
\*\* including academia, NGOs, research institutions, social networks, and community associations



# New buildings - policies

Current status (2019)      Short-term (2030)      Medium-term (2040)      Long-term (2050)

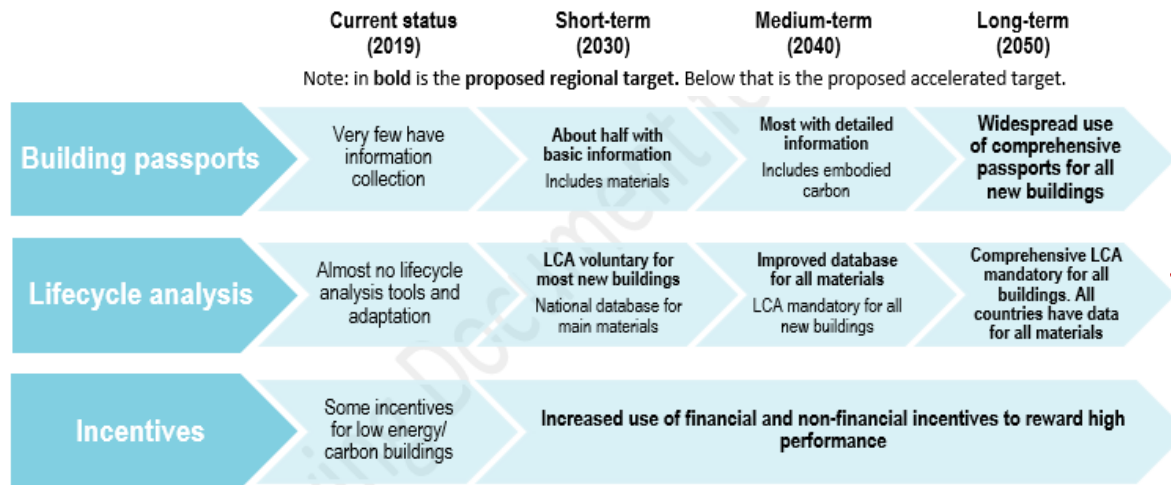
Note: in **bold** is the proposed regional target. Below that is the proposed accelerated target.



**Ambition gap:** Responses indicated that monitoring and enforcement was adequate but not widespread, due to the codes being voluntary. A focus on broader mandatory codes would help ensure “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.

# New buildings - policies



Note: in **bold** is the proposed regional target. Below that is the proposed accelerated target.

**Ambition gap:** *The respondents in the regions stated that few buildings are designed using lifecycle analysis and that it was unclear when such an approach would be more widely adopted.*

# New buildings - policies

## Examples:

- **India:** The Ministry of Power of India launched ECO Niwas Samhita, an Energy Conservation Building Code for Residential buildings (ECBC-R)
- **China:** The Passive Ultra-low Energy Green Building Technical guidance for residential building was issued by the Ministry of Housing and Urban-Rural Development (MOHURD). China also launched the Nearly Zero Energy Building Technical Standard and it was put into action on 1st, September 2019.
- **Malaysia** has codes for Energy efficiency and use of Renewable Energy for non-residential (MS 1525) and residential (MS 2680) buildings. The code has guidelines on energy efficient measures relating to the building design as well as systems for new and existing buildings.
- The **Korean Building Code** includes provisions for Zero Energy Building. ZEB is defined as “the green building that has minimised building load and energy requirement by supply of new & renewable energy”. The Ministry of Land, Infrastructure and Transport and Ministry of Trade, Industry and Energy started the ZEB Certification System in 2017.

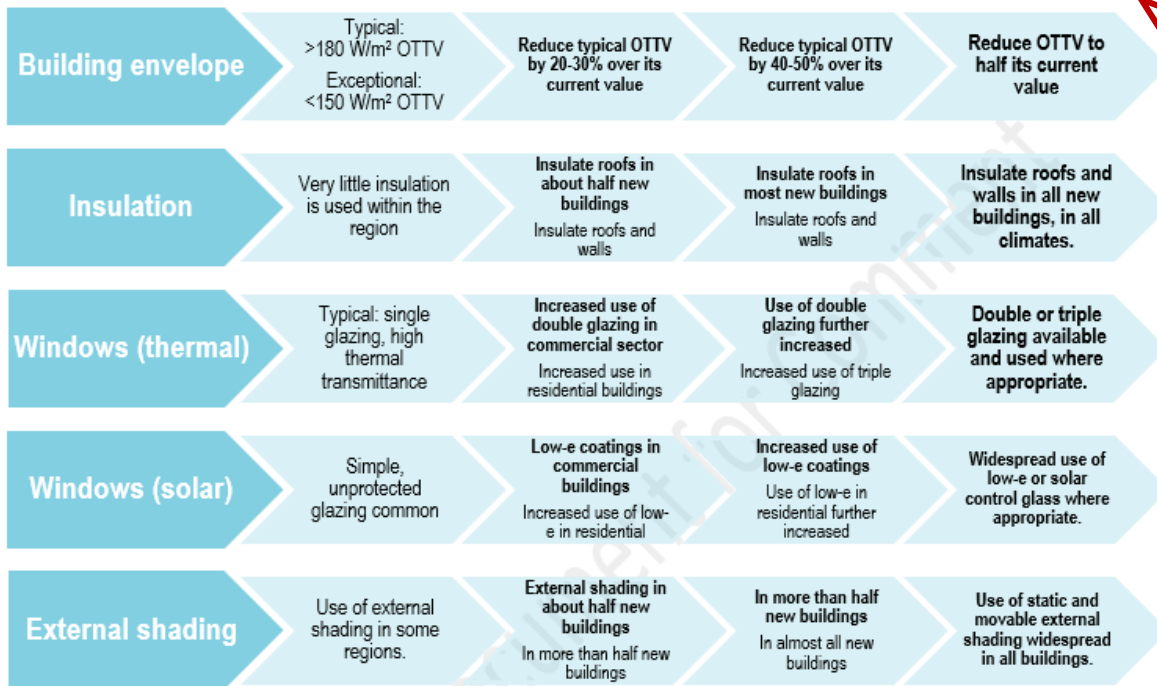


Diamond Building, the headquarters of the Energy Commission (Suruhanjaya Tenaga) of Malaysia in Putrajaya.

# New buildings - technologies

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.

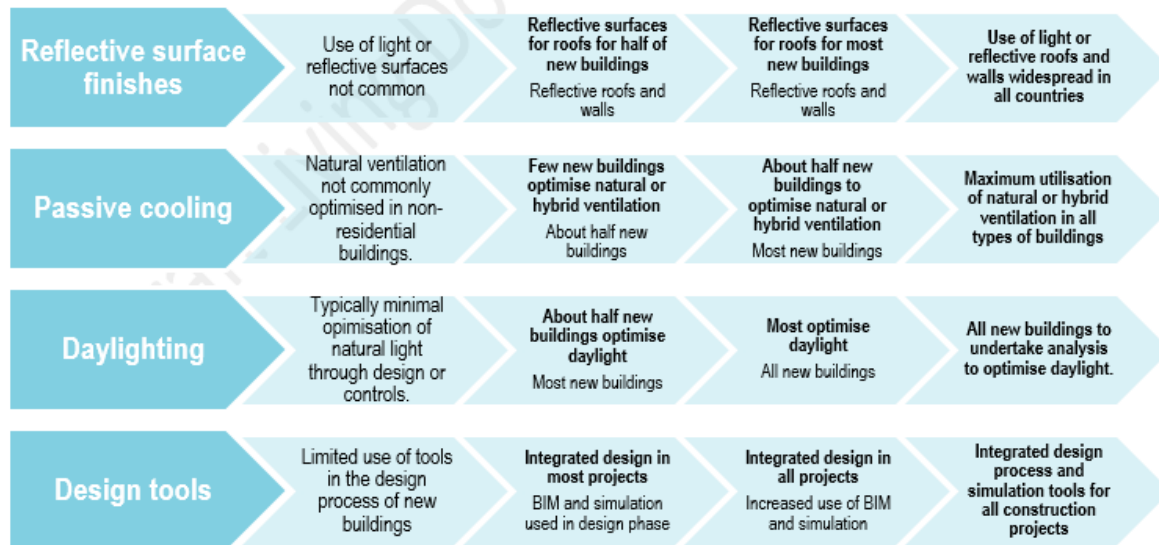


**Strategy:** First: Focus on shading and roof insulation and reflective materials integrated now, along with high/er performance air conditioning. Next: increase requirements on wall insulation and use of double glazing with low SHGC. Then: put in place higher standards for all of those and better controlled ventilation and air leakage.

# New buildings - technologies

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.



**Ambition gap:** *The adoption of passive cooling strategies is limited and most designs have not sought to address cooling thermal comfort through passive cooling. There was a lack of consensus as to whether such approaches could be widely adopted for 2040 and beyond.*



## Trends and challenges in Asia

- Very few countries have National plans for resilience to climate change
- Many major cities are at high risk of flooding
- Need for informal development upgrading
- Limited integration in building plans

## 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



Notes

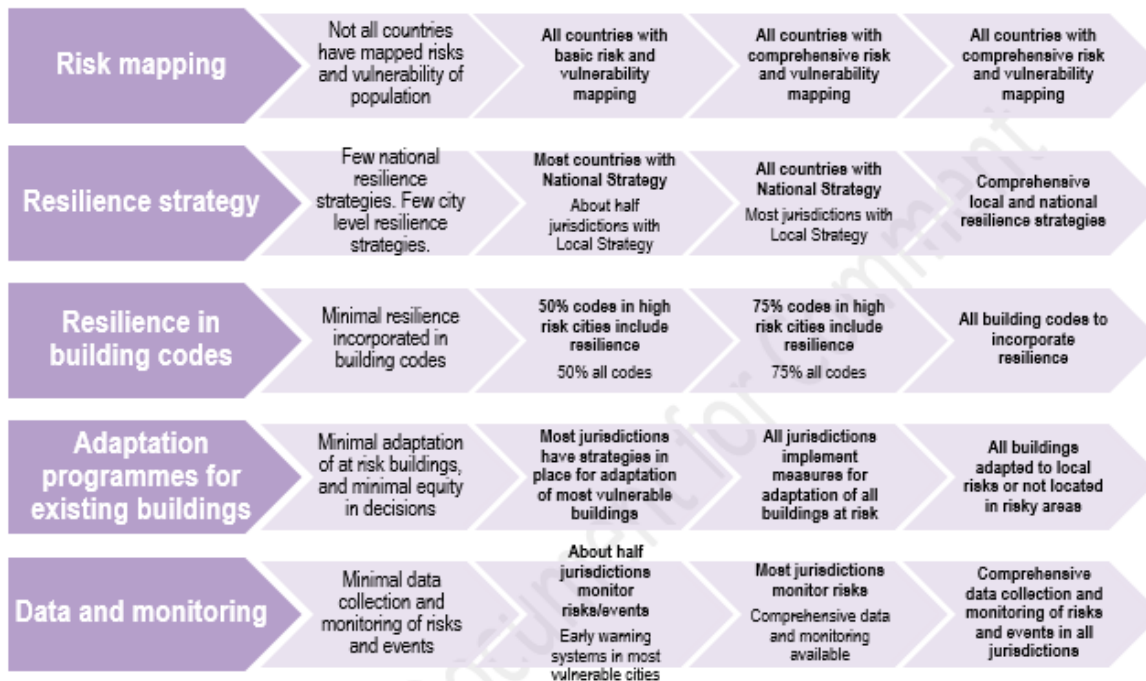
\* of appliances and materials

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# Resilience- policies

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.



**Data gap**

**Data gap:** *What are the main risks and issues for buildings within your country and environment? And, how are these risks being prioritised in building policy?*

**Data gap**

**Data gap**

# Resilience - technologies



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.



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

# Findings - enablers

## Training

Core university  
curricula

Professional  
training

## Data

Baseline data &  
tools

Little consensus  
around what  
needs are

Need political will

## Institutional coordination

Vertical and  
horizontal

Clear  
responsibilities

GBCs or  
equivalent  
convening role

## Financing

Need reliable  
data

Best practice  
sharing

Tools needed to  
unlock finance  
already available

# Moderated discussion

Help us fill some of the gaps:

Go to **www.menti.com** and use the code **75 67 35**

See the results here:

<https://www.mentimeter.com/s/d403326e1f9bee6754d2b69f023184c0/b424118b06fa>



# Help us fill in some of the gaps

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

- **Passive design**
  - Natural ventilation
  - Evaporative cooling
  - Optimised daylighting
  - Need for bioclimatic guidelines by climatic region
  - Use of vernacular or traditional architecture
    - Eg. In India: deep eaves, peripheral balconies, shading, channels for air circulation, reduced window area, use of courtyards
- **Local materials**
  - compressed earth blocks

# Help us fill in some of the gaps

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

- **Spatial planning**
  - Locating residential areas in higher parts of the city (in flood risk zones)
  - Stilts
  - Cross-bracing for walls for structural stability
- **Identify local threats**
  - In India: heat waves, desertification, tsunamis and flooding depending on region
- **Challenge of increase urbanisation**
  - Causing more pressure on urban infrastructure and increasing informal settlements

# Help us fill in some of the gaps

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

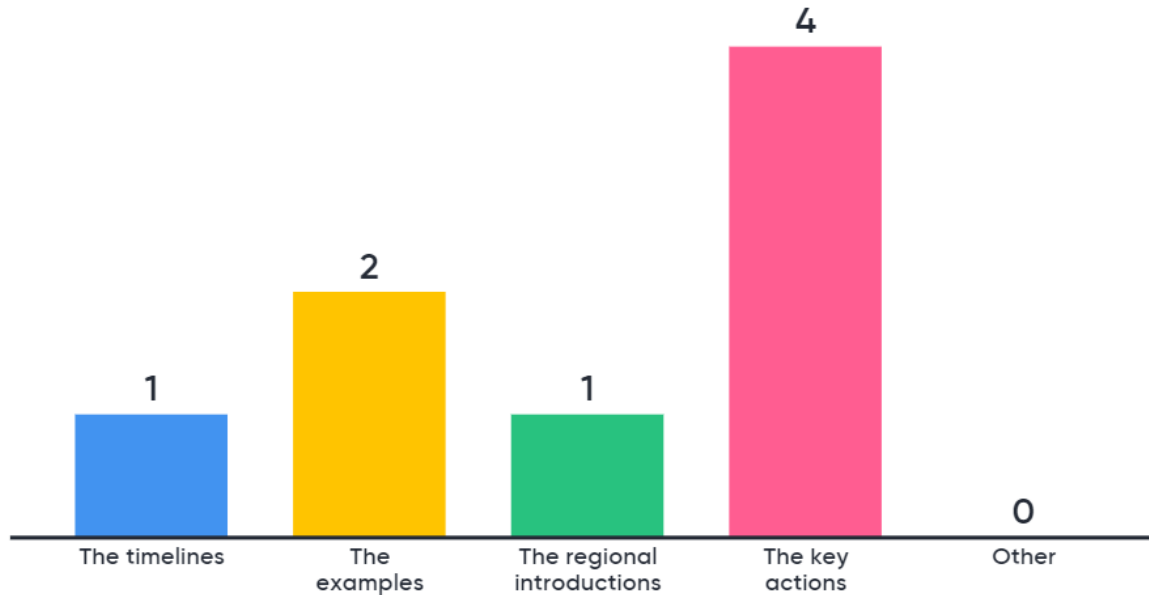
- Ensuring high level of outreach and dissemination
  - Media
  - Schools
  - Community groups

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

- Need to link to climate pledges or targets
  - to support adoption of suggested actions
- Will help inform plans of action
  - Help cities develop roadmaps for cities
  - Develop local versions to inform local action plans
- Identify where biggest opportunities lie by working with local governments
- Learn from best practices
- Can be useful to have buy in from academia (Japan)

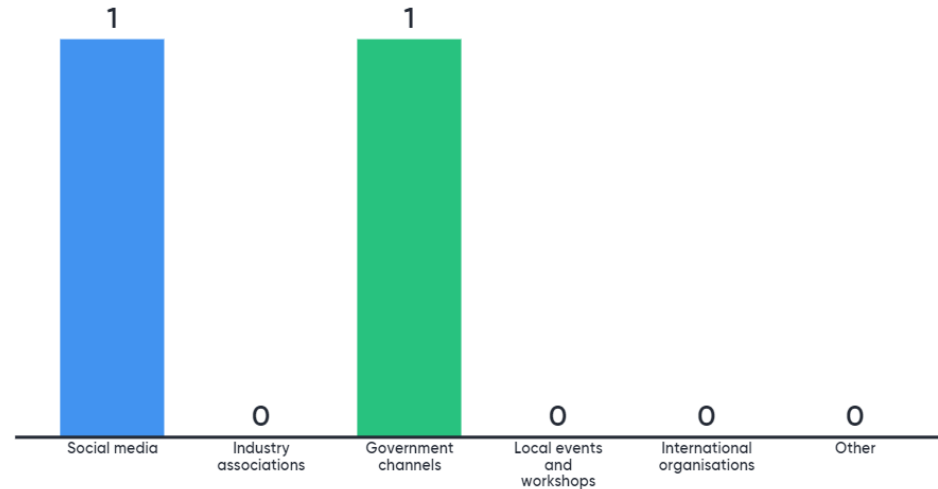
# Moving forward

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





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



- **Collecting comments until 3<sup>rd</sup> 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!

Contact: [global.abc@un.org](mailto:global.abc@un.org) and [buildings@iea.org](mailto:buildings@iea.org)