Climate Action Roadmaps for Buildings and Construction
Step-by-step Guidance

Foreword UNEP

Gulnara Roll
Head of Cities Unit, UNEP
Head of the GlobalABC Secretariat

Decarbonizing the buildings and construction sector is critical to achieving the emission cuts required by the Paris Agreement and addressing the triple planetary crisis of climate change, biodiversity loss, and pollution. However, the sector remains off track to achieve decarbonization by 2050, and the gap between its actual climate performance and the necessary decarbonization pathway is widening. The latest Global Status Report for Buildings and Construction published in March 2024 tells us that overall energy demand and emissions of the buildings sector continued to grow. The need to take action has never been greater: about 60 per cent of the buildings that will exist by 2050 have not been built yet and stronger policies are needed to enhance energy efficiency and address carbon emissions to put the sector on track to reach the goals of near-zero emission buildings for new buildings by 2023 and existing buildings by 2050.

Decarbonizing buildings across their entire life cycle is achievable, but it demands a sector-wide transformation and deep collaboration between all stakeholders across its highly fragmented value chain. Four years ago, the Global Alliance for Buildings and Construction (GlobalABC) launched Global and Regional Roadmaps for Africa, Asia, and Latin America, aiming to support and inspire countries and local authorities worldwide in finding their own pathway and setting their own targets for building decarbonization and resilience. Since then, the work on roadmap development has made significant strides, now being cascaded to national and subnational levels and moving towards implementation in over 30 countries.

This step-by-step guide builds on lessons learnt and experience accumulated over the past four years by the GlobalABC community supporting countries in the development of roadmaps to decarbonise the buildings and construction sector. It provides detailed guidance for setting goals, identifying key actions, and creating a pathway towards a more efficient, low-carbon, resilient and inclusive buildings and construction sector. Designed to unite stakeholders across the value chain, the step-by-step guide fosters a common vision and sets the stage for the systemic changes needed to achieve zero-emission, efficient, and resilient buildings and construction.

I would like to express my sincere gratitude to UNOPS and UN-Habitat for joining forces with UNEP to support countries in the development of Climate Action Roadmaps for Buildings and Construction and accelerate the transition towards a zero-emission, efficient, and resilient built environment. I also thank the GlobalABC members for their valuable contributions, and to the German Federal Ministry for Economic Cooperation and Development for their support and financial contribution to this work.

Foreword UNOPS

Steven Crosskey
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As the climate crisis intensifies, the need for swift and decisive action in all sectors, especially buildings and construction, has never been more critical. The GlobalABC's *Global Status Report 2023* highlights the urgency of this challenge: the building and construction sector is a major contributor to global greenhouse gas emissions, and both energy demand and emissions from buildings continue to rise.

To achieve the 1.5ºC target outlined in the Paris Agreement, updated National Determined Contributions (NDCs) must encompass all sectors, including buildings and construction. However, many countries' NDCs lack specific targets and actions for decarbonizing this crucial sector. Often, this is due to the absence of baseline data or a standardized methodology for identifying the actions required to address key challenges.

The 2024 *State of Cities Climate Finance* report also underscores the need for increased investment in urban climate action, highlighting that by 2030, cities will need an estimated USD 1 trillion annually for building retrofits and new construction to achieve their mitigation goals.

To bridge this action and finance gap and place buildings at the center of national climate strategies, countries need to develop comprehensive and actionable Climate Action Roadmaps that turn climate goals into real results. This step-by-step guidance, developed in partnership with the UN Environment Programme (UNEP) and UN-Habitat, supported by BMZ, provides a practical and replicable framework for countries to create such roadmaps. It proposes a comprehensive analysis of both the physical and the enabling environment, capturing essential data alongside institutional dynamics, policies, financing, stakeholder engagement, etc. to allow countries to define strategies tailored to their specific circumstances.

UNOPS, with its focus on offering practical solutions, is committed to creating a world where people can live full lives supported by sustainable, resilient and inclusive buildings and infrastructure and by the efficient and transparent use of public resources in procurement and project management. We are dedicated to working with partner organizations and governments worldwide to meet the Sustainable Development Goals (SDGs) and advance on climate action. We believe that this guidance, developed through an iterative process involving experts, stakeholders and pilot testing, will support countries to craft actionable roadmaps that contribute to a more sustainable, inclusive, and climate-resilient future.

Together we can make a difference.

Foreword UN-Habitat

Rafael Tuts
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The buildings and construction sector plays a foundational role in shaping the urban environment and the homes where we live. It also constitutes the largest industry in the global economy, accounting for 13 per cent of the world's GDP, and is projected to grow even more in the coming decades, especially in Africa and Asia, since much of the building stock that will exist in 2050 is yet to be built. At the same time, this sector is responsible for producing 21 per cent of global greenhouse gas emissions, consuming 37 per cent of global energy, generating vast amounts of waste and pollution, and causing harm to natural ecosystems. For these reasons, the buildings and construction industry holds a unique potential to either accelerate the ecological crisis or lead the transition towards a sustainable and harmonious future. At UN-Habitat, we believe that the latter is not just a possibility, but a necessity.

Local action is essential to achieve effective, positive change at the global level. The methodology presented in this publication supports the development of

sustainability roadmaps that are carefully tailored to the specific contexts of different countries and regions and to the needs and aspirations of their peoples. This ensures that solutions are relevant and practical on the ground, and that they tangibly improve the lives of local communities. Another key strength of this approach is its emphasis on integrating environmental and social sustainability. It goes beyond simply reducing emissions and conserving resources: it includes elements aimed at promoting the inclusion of vulnerable communities in policy formulation and project development and supporting the right to adequate housing for all in its different components, including cultural adequacy. Furthermore, it advocates for the implementation of sustainable production and consumption patterns for affordable housing, the enhancement of local cultures and vernacular building materials and techniques, and the fundamental principle that the costs of the ecological transition should not disproportionately fall on the poor.

This work aligns closely with several key global frameworks, including Sustainable Development Goals 11 (sustainable cities and communities), 12 (responsible consumption and production) and 13 (climate action), as well as several transformative commitments outlined in the New Urban Agenda, promoting a paradigm of urban development that is environmentally sustainable, resilient and inclusive.

I want to thank our partners from the Global Alliance for Buildings and Construction for their efforts in advancing the development of Climate Action Roadmaps and promoting sustainable buildings and construction worldwide, and BMZ for recognizing the value of this endeavour and committing resources to it. I also extend my deepest gratitude to UNEP and UNOPS for their partnership to build on UN-Habitat's urban expertise.

The approach presented in this publication is based on robust research and has been successfully tested by UN-Habitat in Bangladesh, Ghana and Senegal. I sincerely hope that it will be adopted by more and more countries, regions and organizations across the world, providing a significant contribution towards achieving sustainable buildings and construction, adequate housing for all, and, ultimately, a harmonious future for our cities and our whole planet.

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Introduction

The urgency of climate action in the buildings and construction sector
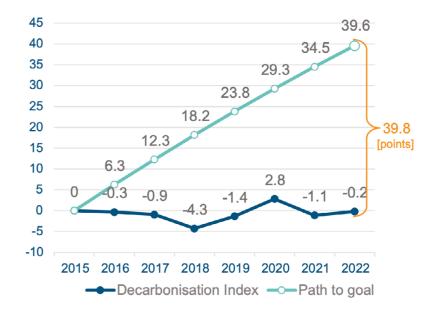
The buildings and construction sector accounts for a staggering 37 per cent of global energy-related carbon dioxide (CO_2) emissions, making it the second largest emitting sector after electricity generation (UNEP, 2024). This sector is also responsible for significant global material consumption and waste generation, further exacerbating environmental pressures.

National and subnational governments, together with cities and municipalities, are crucial drivers in catalyzing the transition towards a low-carbon and circular built environment. They hold jurisdiction over land use and authority over housing programmes, lead in developing and implementing national policies and building codes, commission and oversee building and construction projects, and coordinate with local construction value chain stakeholders. While many of them have committed to ambitious climate action through their Nationally Determined Contributions (NDCs), a significant gap exists between these commitments and actual implementation. This 'action gap' is particularly pronounced in the buildings and construction sector, where progress towards decarbonization has been slow *(see Figure 1)*. As of December 2023, only 11 of the NDC updates submitted by governments expanded on building-related actions (UNEP, 2024), highlighting the limited coverage of buildings in national climate plans. To bridge this gap, countries need to develop comprehensive and actionable Climate Action Roadmaps that translate ambitious goals into tangible actions.

The need for a robust and replicable approach

The Global Alliance for Buildings and Construction (GlobalABC), whose secretariat is hosted by the United Nations Environment Programme (UNEP), is leading efforts to support governments and their partners to develop regional, national and local Climate Action Roadmaps for the buildings and construction sector to achieve zero-emissions, efficient and resilient buildings by 2050. As of September 2024, the GlobalABC has developed one global and three regional roadmaps for Asia, Africa and Latin America, which have been used as a framework and methodology by several countries and regions to draft their own. To ensure a more standardized and easily replicable approach, the United Nations Office for Project Services (UNOPS) developed this step-by-step guidance, which includes a roadmap assessment tool and further resources to support countries in developing their Climate Action Roadmaps.

Figure 1. Decarbonization gap

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Purpose of the publication

This publication aims to support governments and key stakeholders to develop effective Climate Action Roadmaps for their buildings and construction sectors. Therefore, this guidance is designed to:

- **Enable the development of comprehensive and actionable roadmaps:** The methodology will help countries define clear goals, identify key challenges, prioritize actions, and establish timelines and responsibilities for implementation.

- **Bridge the implementation gap:** The guidance will support countries in setting ambitious targets and actions to move from planning to implementation of their strategies.

- **Support the integration of building sector targets into NDCs:** The guidance provides a framework for developing roadmaps that align with and contribute to national climate commitments, including those related to the buildings and construction sector. This will help countries incorporate specific targets and actions for decarbonizing the built environment.

- **Foster a collaborative and inclusive approach:** The guidance emphasizes stakeholder engagement, ensuring that roadmaps reflect the needs and priorities of all involved parties.

- **Promote a data-driven approach:** The methodology encourages the use of a robust baseline assessment to inform decision-making and track progress.

- **Support the implementation of the roadmap:** The guidance provides tools and resources to facilitate the implementation of the roadmap and monitor progress towards achieving decarbonization goals.

Roadmap framework

The Climate Action Roadmaps Framework is based on a comprehensive review of existing roadmaps, extensive consultations with experts and stakeholders who participated in the development of past building and energy roadmaps, and results of pilot testing carried out across multiple countries, regions and contexts. It aims to offer a more holistic approach to decarbonization by better considering the entire building value chain and the carbon emissions related to material manufacturing and building construction, as well as integrating climate adaptation and inclusion as central pieces of any decarbonization strategy.
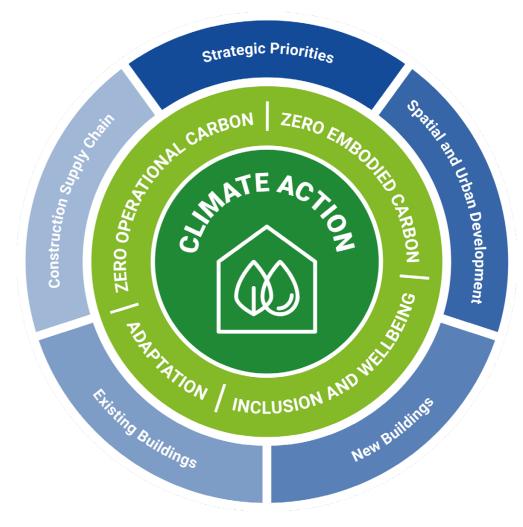
In order to facilitate goal setting and monitoring, this new framework *(see Figure 2)* comprises four objectives to align with the Paris Agreement and the Climate Action Pathways: **(1) Zero embodied carbon, (2) Zero operational carbon, (3) Adaptation and (4) Wellbeing and inclusion**. These four objectives cut across five action areas:

- **Action Area 1: Strategic Priorities** refers to national, regional and local development planning processes that define development objectives, their prioritization and implementation. This action area recognizes the importance of embedding inclusive climate action in the buildings and construction sector at the highest level of governance to give a clear direction and mandate to line ministries and local governments for its implementation.

- **Action Area 2: Spatial and Urban Development** refers to the ways in which people use land at a country, regional and urban scale and the supportive regulations and processes, including land use regulations, urban development planning (i.e., master plan), urban project implementation and natural environment protection. Many spatial planning decisions impact the capacity to mitigate carbon emissions and ensure the adaptation and resiliency of the buildings and construction sector and the inclusion and wellbeing of the population.

- **Action Area 3: Existing Buildings** considers all building management phases, including operation, maintenance, renovation, refurbishment and decommissioning. It also includes the ways in which materials, systems and appliances are used and selected during the building's useful life. This action area considers, more specifically, the reduction of operational carbon emissions, the climate adaptation of the building stock, and circularity.

- **Action Area 4: New Buildings** includes all phases of planning and delivering a new building: project preparation, procurement, design and construction. It also considers material, system and appliance choices. Construction planning and delivery are critical phases for climate action. During those phases, architects, engineers and developers have the opportunity to make sustainable choices for the future.

- **Action Area 5: Construction Supply Chain** includes raw material extraction, system, appliance and material manufacturing, commercialization, importation and the norms regulating the supply chain. This action area is critical to reducing the building's embodied carbon by acting upstream, implementing circularity principles and ensuring sustainable production.

These five action areas were defined to cover the entire building and construction value chain and life cycle to ensure climate action is comprehensive, leverages synergies and promotes circularity. The guidance is structured according to and follows the five action areas and four cross-cutting objectives.

Figure 2. GlobalABC roadmap framework

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Methodology to develop Climate Action Roadmaps for buildings and construction
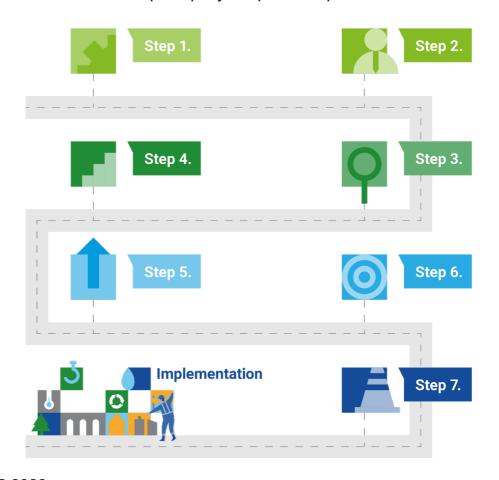
The methodology for roadmap development follows a seven-step process designed to promote inclusion and adaptability in diverse local contexts, and it is underpinned by easy-to-use tools, such as the [Roadmap Assessment Tool](#). The process is grounded in a theory of change framework, which outlines the logic behind interventions and their expected impact on achieving the roadmap's objectives. Below is an overview of the seven steps and their key focus:

- **Step 1. Mobilization:** Mobilizing the team and leadership necessary to develop the roadmap. The main objective is to engage with relevant authorities with a mandate covering sustainable, resilient, and inclusive buildings and construction in the country. This step includes defining the roadmap objectives and scope and creating a Steering or Technical Committee to provide direction for the roadmap's development.

- **Step 2. Stakeholder engagement:** Mapping and engaging with relevant buildings and construction sector stakeholders in the country from the public and private sectors, academia and research institutions, as well as relevant donors and financing entities support the elaboration and future implementation of the roadmap.

- **Step 3. Baseline assessment:** Understanding the current status of the buildings and construction sector in the country or region, encompassing both the physical and the enabling environment. It includes collecting quantitative and qualitative data to identify a baseline, make projections and identify gaps to achieve the country's decarbonization goals.

- **Step 4. Identification of challenges and opportunities:** Identifying information gaps, challenges and opportunities per action area. It proposes the drafting of problem trees to visualize the relationship between the challenges and opportunities and the country objectives to be achieved.

- **Step 5. Prioritization of domains of change:** Defining priority areas of intervention or areas that need to change (i.e., domains of change), and agreeing with the authorities on the final goals and targets the roadmap would help achieve.

- **Step 6. Action development:** Identifying and prioritizing the actions. It also involves defining the timeline and the entities responsible for implementation.

- **Step 7. Setup for implementation and monitoring:** Setting the next steps towards the implementation of the roadmap and the monitoring mechanism.

Figure 3. GlobalABC roadmap step-by-step development

© GlobalABC 2023

Table 1. Overview and timeline indication of the roadmap development process

Steps and sub-steps per month	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
Step 1: Mobilization	▓	▓	▓												
1.1 Government agreement			First steering committee meeting												
1.2 Preliminary stakeholder identification															
1.3 Steering committee mobilization															
1.4 Definition of objectives and scope			Ideally finalize the draft Roadmap Strategic Brief before signing the MOU in 1.1												
1.5 Project management setup															
1.6 Delivery team creation			Kick-off workshop												
Step 2: Stakeholder engagement		▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
2.1 Stakeholder and initiative mapping			Finalize initial mapping before the first steering committee meeting in sub-step 1.3												
2.2 Establishment and management of stakeholder groups				Management of stakeholders throughout the entire roadmap development process											
2.2.1 Multi-stakeholder group															
2.2.2 Thematic working groups															
2.2.3 Building and Construction National Alliance				Organize the kick-off workshop once project management mechanisms are set up and the multi-stakeholder group is created in sub-step 2.2.1											
Step 3: Baseline assessment				▓	▓	▓	▓	▓							
3.1 Physical environment assessment				Assessment											
3.2 Enabling environment assessment								Review and finalization of the baseline assessment							
Step 4: Identification of challenges and opportunities								▓							
4.1 Listing of challenges and opportunities															
4.2 Root cause analysis or problem tree mind mapping								Challenges and opportunities workshop							
Step 5: Prioritization of domains of change									▓	▓					
5.1 Prioritization of domains of change															
5.2 Development of solution trees															
5.3 Review of objectives and targets										Prioritization workshop					
Step 6: Action development										▓	▓	▓			
6.1 Identification of actions															
6.2 Prioritization of actions															
6.3 Definition of timeline and responsibilities											Roadmap workshop				
6.4 Completion of theory of change															
6.5 Project concept definition															
6.6 Roadmap drafting															
Step 7: Setup for implementation and monitoring														▓	▓
7.1 Endorsement and formal adoption															
7.2 Publication and dissemination														Roadmap launch event	
7.3 Development of a funding plan for implementation															
7.4 Definition of implementing and monitoring arrangements															

Icon glossary

This guidance uses icons to represent specific concepts and provide visual cues. Below is an overview of the icons used and their significance *(see Table 2)*.

Table 2. Icon guidance
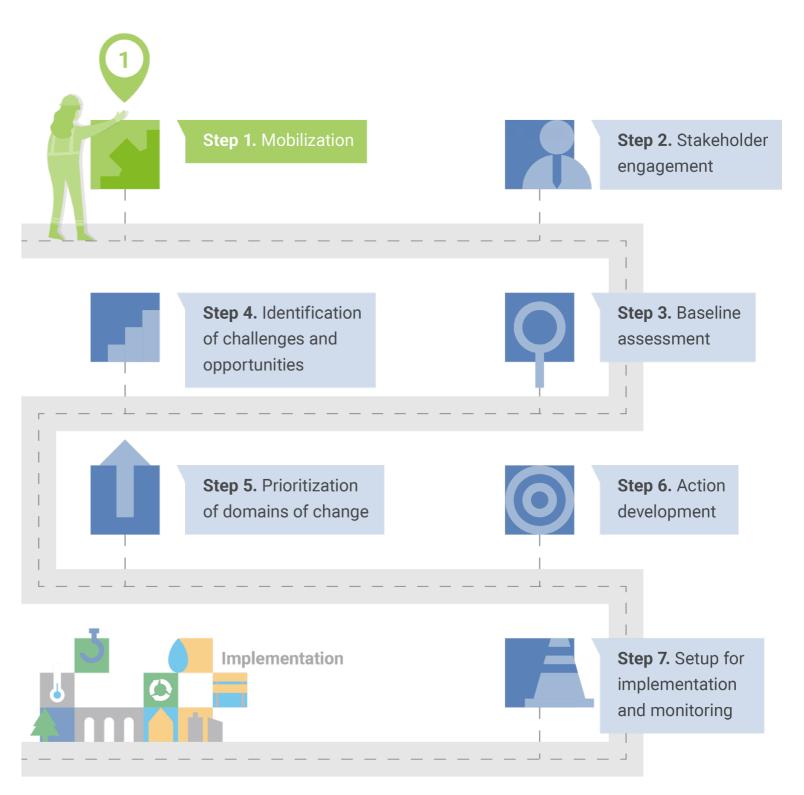
Sub-step The individual phases or components of each step.	**Timeline** The estimated time frame or level of effort required for each sub-step.	**Task ownership** The individuals or teams responsible for implementing each sub-step.	**Resources** The tools, templates or supporting materials required for the implementation of each step.	**Deliverable** The main outputs or deliverables expected from each step.
Actions The specific actions or tasks that need to be completed within a step.	**Roles** The roles and responsibilities of different stakeholders involved in the roadmap development process.	**Participants** The different groups or individuals involved in a specific activity or step.	**Tips** Suggestions to improve the implementation of a step or activity.	**Good practice** Successful approaches taken by countries during the development of their roadmaps.
GlobalABC objectives	**Zero embodied carbon**	**Zero operational carbon**	**Adaptation**	**Wellbeing and inclusion**

STEP 1:
Mobilization

Step 1 sets the stage for roadmap development. In this step, roadmap objectives and scope are defined, the implementation team, the authorities, and the steering committee are mobilized, and the timeline and budget are developed and validated.
This step is critical to ensuring the success of the roadmap's development and its alignment with the country's context and objectives. The overall Step 1 is to be completed in approximately three months.

12 weeks

Figure 4. GlobalABC Roadmap step-by-step development (Step 1)

Step 1. Mobilization

Step 2. Stakeholder engagement

Step 4. Identification of challenges and opportunities

Step 3. Baseline assessment

Step 5. Prioritization of domains of change

Step 6. Action development

Implementation

Step 7. Setup for implementation and monitoring

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Step overview

Sub-step	Timeline	Task ownership	Resources	Deliverable
1.1 Government agreement	**One to two months.** Starts in parallel with *sub-step 1.4*.	Implementing organization	• [Government focal point terms of reference (TOR)](#) • [Memorandum of understanding (MOU)](#)	MOU or agreement with the government
1.2 Preliminary stakeholder identification	**One month.** Starts at the beginning of the initiative.	Implementing organization (or government if leading directly)	• [Stakeholder checklist (tab 2A)](#)	Initial stakeholder list
1.3 Steering committee mobilization	**One month.** Starts once *sub-steps 1.1* and *1.2* are advanced.		• [Team chart template (tab 1A)](#) • [SC management plan template](#) • [Agenda for the first steering committee meeting](#)	Steering committee team and management charts First SC meeting agenda
1.4 Objective and scope definition	**Two to three months.** Starts in parallel with *sub-step 1.1*.		• [Country Roadmap Strategic Brief template](#)	Draft strategic brief
1.5 Project management setup	**Two to three months.** Starts at the beginning of the initiative and is finalized when *sub-step 1.4* is complete.		• [Timeline template (tab 1B)](#) • [Risk log template (tab 1C)](#)	Timeline/budget/risk log
1.6 Delivery team creation	**Two to three months.** Starts at project inception. Hiring process begins after the first steering committee meeting (SC).		• [Organigram template](#) • [Team chart template (tab 1A)](#) • [Urban Planning and Resilience TOR](#) • [Buildings and Materials TOR](#)	Organigram Delivery team and management charts Technical expert TORs and contracts

*Please note that many of the sub-steps may need to be carried out in parallel, so the order is just indicative and may vary from country to country.

Understanding the roles

The organigram above shows the suggested management structure when an external organization supports the government in roadmap development.

Government: The government is the primary stakeholder and is ultimately responsible for implementing the roadmap. They will define the country's decarbonization goals, policies and regulations. Government representatives may also be actively involved in the roadmap development process, contributing their expertise and ensuring alignment with national priorities. A designated government focal point will typically coordinate with or manage the delivery team, depending on whether an external organization or the government is leading the process.

Implementing organization: The implementing organization is the entity, or group of entities, that leads and manages the overall roadmap development project. This organization may consist of one or more partners, and typically has a presence in the country. It works closely with. This organization typically has a presence in the country and works closely with the government to define the project scope, objectives and timelines. The implementing organization is responsible for securing funding, establishing partnerships and overseeing the overall implementation of the roadmap development process. In close collaboration with the government, it is also responsible for developing and implementing a comprehensive communications strategy to keep stakeholders informed about the process. In some cases, the government may choose to directly lead the roadmap development process, acting as both the implementing organization and the responsible body for the roadmap.

Delivery team: The delivery team consists of a dedicated group of experts responsible for carrying out the day-to-day activities of the roadmap development process. It may include staff from the implementing organization or partner organizations, as well as external consultants. The delivery team is responsible for conducting stakeholder mapping and the baseline assessment, identifying challenges and opportunities, developing actions and drafting the roadmap document in close consultation with stakeholders.

Sub-steps

There are six sub-steps in the mobilization step: (1) Government agreement, (2) Preliminary stakeholder mapping, (3) Steering committee mobilization, (4) Definition of objectives and scope, (5) Project management setup, and (6) Delivery team creation. **[In orange]** are indications of when a sub-step should be completed before starting another one.

🔗 MOU template

1.1 Government agreement

This sub-step applies only when an external organization is supporting the government in developing the roadmap. The objective of this sub-step is to ensure government ownership of the roadmap and define the implementing organization's mandate. This sub-step should be adapted to the local context with a flexible approach.

◉ **What are the actions to set up an agreement for roadmap development?**

☐ **Identify the government entity that will lead the initiative –** it should be the entity with the highest interest and influence in decarbonizing the buildings and construction sector, e.g., a task force under the prime minister, or a line ministry with a mandate related to buildings and construction or climate and the built environment. To identify the entity, you can refer to *sub-step 2.1: Stakeholder mapping.*

☐ **Appoint or identify the focal point within the identified government entity.** This person should have the capacity to mobilize personnel within different government bodies (e.g., line ministries, local governments, task forces) and the available time to follow the initiative closely.

🔗 Government focal point terms of reference

☐ **Sign a memorandum of understanding (MOU) or another type of agreement** with the government. The document should specify the agreed objectives, scope and coordination mechanisms *(see sub-step 1.4)*. The draft strategic brief should be included in the MOU as an annex. Please note that an MOU may not be applicable to all contexts. In some cases, a simple letter from the government agreeing to implement the project may be sufficient. **[Complete sub-step 1.4: Definition of objectives and scope, before signing the MOU.]**

🔗 MOU template

1.2 Preliminary stakeholder mapping

This sub-step focuses on identifying key stakeholders who will be involved in the initial stages of roadmap development, particularly in the formation of the steering committee. This initial identification is a quick assessment, drawing upon existing knowledge and resources.

◉ **What are the actions to conduct the preliminary stakeholder mapping?**

☐ **Engage with the government focal point to identify key government entities** and representatives who should be involved.

☐ **Review existing stakeholder lists,** project reports, etc. to identify potential stakeholders. Use the Stakeholder checklist (tab 2A) to identify where to start.

☐ Based on the initial stakeholder identification, **select potential members for the steering committee,** focusing on those with high influence and interest in roadmap development.

Note: This preliminary identification is a starting point. A more comprehensive stakeholder mapping will be conducted in Step 2 and updated throughout the roadmap development process.

1.3 Steering committee mobilization

The steering committee provides the vision for the roadmap's development. It advises on implementation and advocates for the roadmap's mainstreaming. Additionally, it provides comments and direction for each development step and addresses questions raised by the delivery team. The steering committee is the first project body created.

Who are the members of the steering committee?

The steering committee is a small group of around 10 key decision-makers who provide direction for the roadmap's development. These stakeholders usually have high interest and influence, as defined in the stakeholder mapping exercise *(see sub-step 2.1)*. The group should include representatives from:

- **Key government entities,** including representatives from all line ministries with mandates over the buildings and construction sector (e.g., Ministry of Local Governments, Ministry of Housing and Urban Development).

- **Organizations offering technical and coordination support** (e.g., United Nations entities and local Green Building Councils).

- **Main country donors** that are supporting the buildings and construction sector.

- **Principal private sector organizations** (i.e., manufacturing, design and builders'/developers' corporations).

- **Relevant non-governmental organizations and civil society groups** that focus on the sustainable buildings and construction sector.

- **Academia**, including a representative with expertise in sustainable buildings and construction.

What are the actions to mobilize the steering committee?

☐ **Use the preliminary stakeholder mapping to identify potential organizations and their representatives to participate** in the steering committee.

☐ **Reach out to potential participants** to request their involvement in the steering committee. You can share a formal invitation letter with them to provide details about the initiative, preferably through the ministry focal point (who should eventually chair the steering committee).

☐ **Complete the steering committee team chart** once you have received confirmation of the steering committee members' participation.

🔗 Team chart template (tab 1A)

☐ **Draft the steering committee management plan** indicating members, roles, frequency of team meetings, communication channels, etc.

🔗 SC management plan template

☐ **Circulate the management plan for validation.**

☐ **Organize a first steering committee meeting** to present the draft of the Country Roadmap Strategic Brief, confirm roadmap objectives, scope and steering committee coordination mechanisms, and identify next steps. This is normally done around two weeks prior to the kick-off workshop. **[Complete sub-step 1.4: Drafting the Country Roadmap Strategic Brief, and sub-step 1.5: Defining the timeline and budget, before organizing the first meeting.]**

🔗 Agenda for the first steering committee meeting

1.4 Definition of objectives and scope

This sub-step is critical to creating a common understanding of the objectives and scope of the roadmap. This information should be compiled into the **Country Roadmap Strategic Brief.** This document will be attached to the signed agreement with the government focal point and will support discussions during the first steering committee meeting and the kick-off workshop.

🔗 **Country Roadmap Strategic Brief template**

What are the actions to define the roadmap objectives and scope?

- ☐ **Draft the Country Roadmap Strategic Brief.** The brief should address the following questions:

  a. What does decarbonizing the buildings and construction sector mean in the country?

  b. Why is transforming the buildings and construction sector key for decarbonization?

  c. What are the roadmap objectives?

  d. How does the roadmap align with national and global development objectives?

  e. What is the process to develop the roadmap?

- ☐ **Share the draft with steering committee members,** including the government focal point, for feedback. The draft can also be shared with other stakeholders (e.g., academia) for advice.

- ☐ **Review the draft** to ensure it captures a consensus.

- ☐ **Present the draft Country Roadmap Strategic Brief to the steering committee for their approval.** The agreement should focus on the roadmap objectives and scope.

- ☐ **Present the strategic brief during the kick-off workshop and collect feedback** on the document from the multi-stakeholder group. The strategic brief can also be included in the invitation letter as an annex.

  Note: Stakeholder feedback is crucial, and the strategic brief may need to be revised after the workshop based on stakeholders' input. The revised strategic brief may then require further review and approval by the steering committee.

- ☐ **Use the Country Roadmap Strategic Brief to advocate for the initiative** with key stakeholders.

1.5 Project management setup

This sub-step is critical to developing the project management tools that will ensure successful roadmap development. It includes defining the timeline, budget, risk log, and communication plan. This work is usually carried out collaboratively between the implementing organization and the government focal point, and validated by the steering committee.

What are the actions to determine the project management tools for roadmap development?

- ☐ **Establish the roadmap development timeline** in collaboration with the government focal point.

🔗 **Timeline template (tab 1B)**

☐ Based on the timeline and the roadmap objectives, **develop or consolidate the budget** with budget lines for project coordination, workshops (venue, IT, daily subsistence allowance), technical consultants, graphic design and content review, and national or local mainstreaming and communication.

☐ **Develop a communications plan** to define channels and strategies to communicate with stakeholders about roadmap development. This may include setting up a website, social media platforms, newsletters and other tools to ensure consistent and effective communication throughout the process.

Note: In *Step 7*, a dissemination strategy for the roadmap itself will need to be developed *(see sub-step 7.2)*. This should build on the communications plan established in this phase.

☐ **Identify risks** that can impair roadmap development at an early stage.

🔗 Risk log template (tab 1C)

☐ **Consult the steering committee on the timeline, budget, and communication plan, and discuss risks.** You can use the first steering committee meeting as an opportunity to discuss these issues.

Note: Some organizations may have policies or preferences regarding budget disclosure. While it is recommended to inform the steering committee of the overall project budget, individual organizations may choose not to disclose this information. This step should be treated as optional.

☐ **Finalize the timeline, budget, and communications plan, and update the risk log** based on the feedback received. Make sure this information is shared with all delivery team members and the steering committee.

☐ **The timeline and risk log should be updated regularly to reflect changes, and expenses should be closely monitored.**

1.6 Delivery team creation

The establishment of the delivery team is critical to ensuring that tasks leading to the roadmap's creation are completed according to the highest standards, the roadmap development is data driven, and stakeholders are consulted.

Who are the members of the delivery team?

The team setup will vary from one roadmap to another. The suggested delivery team includes the following roles:

• **The project manager or country lead,** who coordinates the country delivery team and is responsible for roadmap delivery. They make sure the step-by-step guidance is followed, maintain the quality of the assessment and the roadmap, and ensure country ownership. This role is usually performed by a member of the implementing organization. It is preferably based in the country.

• **Technical experts,** who are responsible for delivering the different sections of the roadmap following the step-by-step guidance and report to the project manager. Their roles include conducting desk research, consulting and engaging stakeholders on technical topics, and writing up the country baseline assessment and the roadmap. The team will include between three to four experts to cover all the roadmap action areas. From experience, the following expertise is needed:

1. Expert 1: Strategic priorities and urban and spatial development. This expert should have a deep understanding of national and local development planning processes, including policies, regulations and strategies for sustainable, resilient and inclusive urban development. Additionally, they should understand the intersection of urban planning and carbon management, particularly how spatial planning influences energy consumption, energy grids and carbon emissions.

2. Expert 2: New and existing buildings. This expert should have in-depth knowledge of building design, construction, operation, and maintenance, and expertise in energy efficiency and renewable energy technologies. Additionally, they should also have a strong understanding of carbon emissions related to building construction and operations, including heating, cooling, lighting and appliances. Adequate knowledge of circularity in buildings and life cycle emissions will be crucial in this role.

3. Expert 3: Construction supply chain. This expert must have expertise in raw material extraction, manufacturing, transportation, and waste management, with a focus on embodied carbon emissions related to materials and construction processes. A strong understanding of circular economy principles, sustainable production practices, and carbon footprint reduction strategies within the construction supply chain is also essential.

All experts should have a thorough understanding of the carbon data and policy landscape, as well as proven skills in data collection, analysis and reporting related to energy consumption and carbon emissions in the built environment. Additionally, it is important that they have strong communication skills, including the ability to effectively communicate technical information to the variety of stakeholders and audiences they will interact with during the roadmap development process.

- **The administrative and communications support**, who handles administrative tasks for project implementation, including budget assignment, organizing and coordinating administrative tasks for the consultation process, and other requirements. They also play a crucial role in supporting the communications strategy, ensuring stakeholders and the general public are informed and engaged during the roadmap development process.

What are the actions to identify and establish the delivery team?
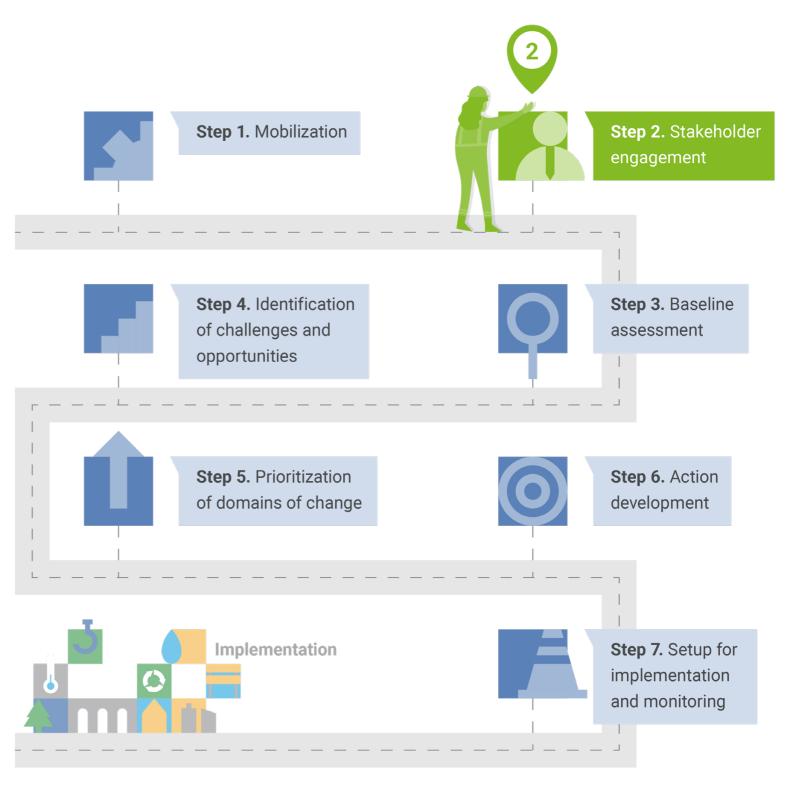
☐ **Define and agree with partners on the organigram and the terms of reference.** Organigram template, Urban Planning and Resilience TOR and Buildings and Materials TOR.

☐ **Present the organigram to the steering committee** for their validation during their first meeting.

☐ **Identify suitable consultants, staff or organizations** for the previously defined roles as described in the terms of reference.

☐ **Conduct the hiring process.** Please note the hiring process usually takes a few months to be completed and therefore should be started as early as possible.

☐ **Complete the** team chart template (tab 1A)**.**

☐ **Define the delivery team coordination mechanisms** (e.g., frequency of team meetings, communication channels).

☐ **Circulate the delivery team coordination mechanisms** among relevant stakeholders for comments.

STEP 2:
Stakeholder engagement

Step 2 establishes the stakeholder groups and develops the strategy for their engagement and participation over the course of the roadmap's development. It is to be completed in around three months and starts in parallel with *Step 1: Mobilization*.

12 weeks
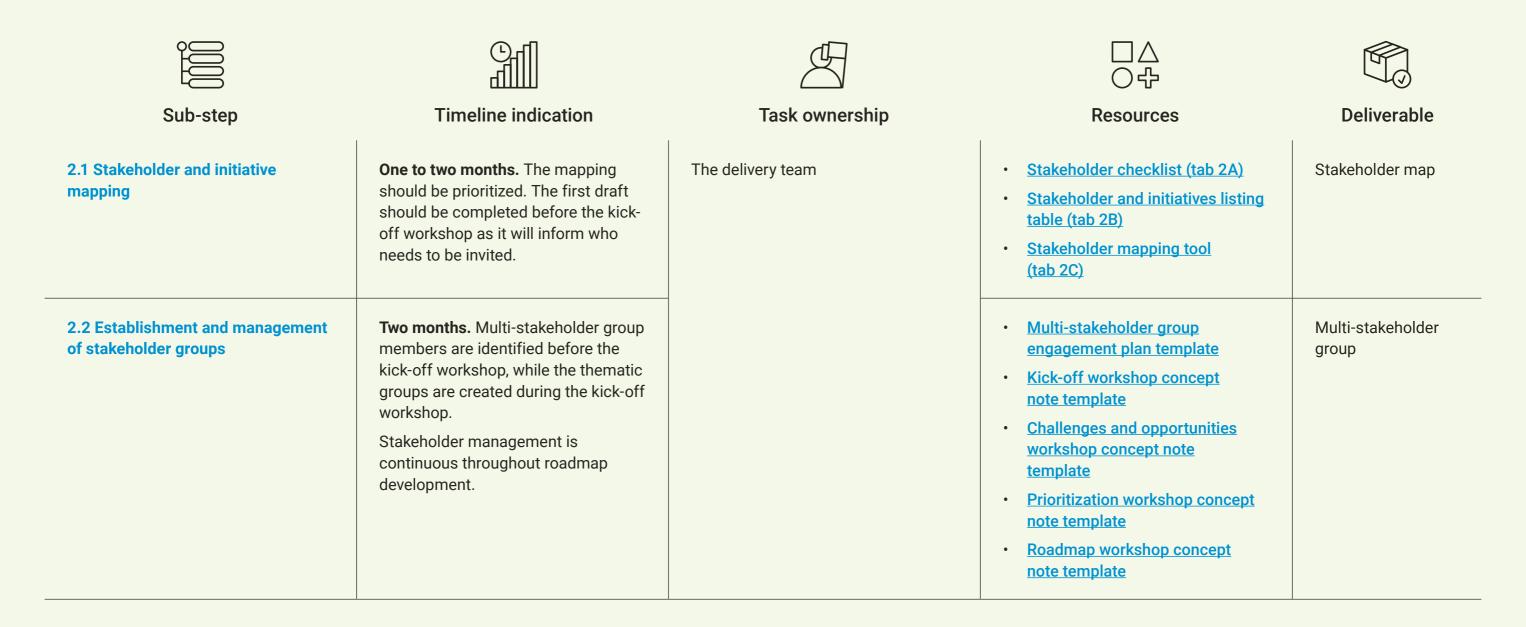
Figure 5. GlobalABC Roadmap step-by-step development (Step 2)

Step 1. Mobilization

Step 2. Stakeholder engagement

Step 4. Identification of challenges and opportunities

Step 3. Baseline assessment

Step 5. Prioritization of domains of change

Step 6. Action development

Implementation

Step 7. Setup for implementation and monitoring

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Step overview

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
2.1 Stakeholder and initiative mapping	**One to two months.** The mapping should be prioritized. The first draft should be completed before the kick-off workshop as it will inform who needs to be invited.	The delivery team	• [Stakeholder checklist (tab 2A)](#) • [Stakeholder and initiatives listing table (tab 2B)](#) • [Stakeholder mapping tool (tab 2C)](#)	Stakeholder map
2.2 Establishment and management of stakeholder groups	**Two months.** Multi-stakeholder group members are identified before the kick-off workshop, while the thematic groups are created during the kick-off workshop. Stakeholder management is continuous throughout roadmap development.		• [Multi-stakeholder group engagement plan template](#) • [Kick-off workshop concept note template](#) • [Challenges and opportunities workshop concept note template](#) • [Prioritization workshop concept note template](#) • [Roadmap workshop concept note template](#)	Multi-stakeholder group

Sub-steps

Step 2 involves two sub-steps: (1) Stakeholder and initiative mapping, and (2) Establishment and management of stakeholder groups.

2.1 Stakeholder and initiative mapping

Stakeholder mapping is critical to identify who to engage in the roadmap development process. On the other hand, initiative mapping helps understand current and past projects so the roadmap development process can leverage recommended actions. Stakeholder and initiative mapping is a continuous process, and the initial map should be regularly updated.

What are the actions to develop the stakeholder and initiative map?

- **Conduct desk research** to identify stakeholders and add the relevant information (i.e., focal points, action areas and previous or ongoing projects) in the [stakeholder and initiatives listing table (tab 2B)](#). Additionally, use the [stakeholder checklist (tab 2A)](#) to identify stakeholders. Keep in mind that the checklist is not localized or exhaustive, so you may need to consider other stakeholders to develop a comprehensive and diverse stakeholder map.

- **Share the draft stakeholder list with the government focal point.** The government focal point can add stakeholders and their projects to the list. A meeting can be organized with the government focal point during which the participants can brainstorm to identify other stakeholders.

- **Share the draft stakeholder list with the steering committee members** and ask them to add other stakeholders and their projects. This can be done in person or via emails. In-person meetings can be useful to develop a strong relationship.

- **Consolidate the list of stakeholders.** At this stage, the list should include the following information: (1) organization name, (2) action areas, (3) projects and initiatives, (4) focal point names, and (5) contact information as per tab 2B in the tool.

- **Organize a mapping session with the government focal point to discuss the level of priority and influence** of each stakeholder. For guidance on how to rate level of influence and interest, you can refer to the notes in tab 2B.

  Note: At this stage, it is also important to begin developing a funding plan to ensure adequate financial resources are secured for roadmap implementation. Mapping financing organizations and relevant initiatives is key, as it will provide valuable insights for the funding plan. While further details of the funding strategy will be developed in *Step 7 (see sub-step 7.3)*, once the roadmap actions are clearly defined, it is critical to start conceptualizing the funding plan early. This plan should be revised and refined as the roadmap evolves, allowing funding to be ready for deployment as soon as possible after the roadmap launch.

- **Finalize the first iteration of the stakeholder map.** Use the [stakeholder mapping tool (tab 2C)](#) to visualize the information input in tab 2B.

- **Present the stakeholder mapping during the kick-off workshop** and ask participants pinpoint stakeholders and projects that should be added or removed.

- **Develop a stakeholder map report** summarizing and analyzing the collected information.

  Note: This action is optional. The delivery team should evaluate if developing a report brings added value for knowledge management.

☐ **Regularly add new stakeholders to the list.** The question "Do you know of other stakeholders to include?" should be a recurring one when meeting with stakeholders.

> ### TIPS BOX:
>
> **Key strategies for effective stakeholder mapping**
>
> • When identifying stakeholders, consider entities that will play a role in the implementation of the roadmap. For example, local governments often have mandates over urban planning and construction regulations, making them key implementers; therefore, it is critical to include them.
>
> • Involve donors and private sector entities early on in the discussion to increase the likelihood of future investment and collaboration in the implementation of the roadmap actions.
>
> • Use a network-based approach to stakeholder selection: ask the identified stakeholders to list other relevant ones.

2.2 Establishment and management of stakeholder groups

This part describes the different groups to mobilize and how to engage them throughout the roadmap development process. Three key stakeholder categories have been identified: **(1) the multi-stakeholder group, (2) the thematic working groups, and (3) the Building and Construction National Alliance**. Please note the names can be changed to reflect each country's preference. Also, the National Alliance may not exist in the country and therefore, its mobilization is optional. However, it is advised to advocate for its creation.

One option is for the multi-stakeholder group to transition into the National Alliance to support the roadmap's implementation.

For each group, this guidance document answers the following questions:

a. Who are the participants?

b. What are the actions to mobilize them?

c. What are their roles during the roadmap development process?

d. How should the group be engaged throughout the roadmap's development?

2.2.1 Multi-stakeholder group

The multi-stakeholder group is the primary consultative body throughout roadmap development. It is created for this purpose and can be reconstructed to support the implementation process. The multi-stakeholder group provides advice and technical support to the delivery team and the steering committee to shape the assessment and define roadmap actions and prioritization.

Who are the participants?

Focal points from all major stakeholder groups and organizations, as defined below:

1 **The multi-stakeholder group includes actors along the entire building and construction value chain.** Please refer to the stakeholder checklist (tab 2A) for more details.

2. The multi-stakeholder group should be **diverse and inclusive** to represent all perspectives and interests, including those of marginalized groups.

3. The multi-stakeholder group should be kept **under 60 participants** to facilitate consultation.

4. The multi-stakeholder group includes **all thematic working group members.**

What are the actions to mobilize and engage the multi-stakeholder group?

☐ **Develop a participant list.** The list should include stakeholders as defined in the *"Who are the participants?"* section above. To identify these stakeholders, the delivery team should refer to the stakeholder mapping tool (tab 2B) and identify the high priority stakeholders with a high level of influence first, but also consider expanding the list to stakeholders with lower levels of interest and influence to ensure all perspectives are represented. The list should have stakeholders from all sectors (e.g., public and private organizations) working on all five action areas (i.e., strategic priorities, spatial and urban development, existing buildings, new buildings, and construction supply chain). For ease of comprehension, the stakeholders can be categorized by sector.

☐ **Validate the participant list with the steering committee.**

☐ **Send invitations to potential participants to join the multi-stakeholder group and the kick-off workshop.** The invitation should include the finalized Country Roadmap Strategic Brief? *(see sub-step 1.4).*

☐ **Consolidate the participant list** and follow up with stakeholders if necessary.

☐ **Develop a multi-stakeholder engagement plan and schedule** *(see Table 3).*

🔗 Multi-stakeholder group engagement plan template

☐ **Present and validate the engagement plan** during the kick-off workshop.

☐ **Share the engagement plan** with all multi-stakeholder group members.

What is the multi-stakeholder group's role during roadmap development?

The multi-stakeholder group plays its consultation role from *Step 2:*

Stakeholder engagement to *Step 7: Setup for implementation and monitoring of the roadmap development process*. This entails:

• **Participating in roadmap development meetings and workshops** and providing inputs and data on specific focus areas. There are five advised key events happening throughout the roadmap development process for which the multi-stakeholder group should be engaged: **(1) the Kick-off workshop, (2) the Challenges and opportunities workshop, (3) the Prioritization workshop, (4) the Roadmap workshop and (5) the Roadmap launch event.** However, each country can follow a different approach as required. *See the overview of workshops* on page 28 for more details.

• **Providing feedback on the baseline assessment and roadmap draft.** The multi-stakeholder group reviews only advanced/final drafts of the documents. Early drafts are discussed and reviewed by the thematic working groups. Each draft should include an executive summary, and when sending the draft, a suggestion can be made to stakeholders to review the executive summary or a specific part only.

• **Reaching a consensus on the contents of the roadmap and pledging to participate in its implementation.**

Table 3 on the next page shows a tentative timeline of the multi-stakeholder engagement.

Table 3. Multi-stakeholder group engagement plan

Steps per month	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	Date/Period
Step 1: Mobilization	█	█	█													**Date/Period**
Step 2: Stakeholder engagement	█	█	█	█												**Date/Period**
Kick-off workshop			Event													**Date/Period**
Thematic working group creation																**Date/Period**
Step 3: Baseline assessment				█	█	█	█	█								**Date/Period**
Review the baseline assessment draft							Review									**Date/Period**
Step 4: Identification of challenges and opportunities								█								**Date/Period**
Challenges and opportunities workshop								Event								**Date/Period**
Step 5: Prioritization of domains of change									█	█						**Date/Period**
Prioritization workshop										Event						**Date/Period**
Step 6: Action development											█	█	█			**Date/Period**
Roadmap workshop												Event				**Date/Period**
Review actions and targets												Review	Review			**Date/Period**
Step 7: Setup for implementation and monitoring														█	█	**Date/Period**
Roadmap presentation event															Event	**Date/Period**

🟧 Event   🟨 Review

Overview of workshops

Below is an overview of the five workshops proposed during the roadmap development process. These workshops are not merely information gathering sessions; they are valuable opportunities to spread key messages, build momentum and actively engage stakeholders.

1   Kick-off workshop

The Kick-off workshop is the official launch of the initiative. It is an opportunity to agree on the roadmap objectives and the development methodology. It happens once the delivery team, the steering committee, the National Alliance and the multi-stakeholder group are mobilized and the Country Roadmap Strategic Brief has been validated by the steering committee. It can be one day long, and interactive activities should be favoured during the event. The agenda includes:

- Project presentation (donor, scope, timeline, team members);
- Presentation of the national and international challenges;
- Presentation and discussion about national decarbonization and sustainability objectives and how the roadmap will serve those objectives;
- Presentation of the roadmap development methodology, the seven steps and the stakeholders' roles in this process;
- Presentation of the stakeholder map and participants' input;
- Constitution and presentation of the thematic working groups.

🔗 **Kick-off workshop concept note template**

2   Challenges and opportunities workshop

This workshop is an opportunity to reflect on the national buildings and construction sector baseline assessment. It should happen once the delivery team has finalized a first draft of the assessment. The objectives are to receive feedback, gather missing information from stakeholders to address specific gaps, and validate the assessment draft. The agenda includes:

- A presentation of the draft assessment, highlighting information gaps;
- Collection of information to fill these gaps;
- Small group discussions about specific challenges and opportunities.

🔗 **Challenges and opportunities workshop concept note template**

3   Prioritization of domains of change workshop

This workshop is an opportunity to define the main orientation of the roadmap and the challenges and action areas that will be prioritized. The objective is to agree on the main milestones and priorities. The agenda includes:

- Presentation of problem trees, with suggested areas to prioritize (i.e., domains of change);
- Small group discussions to identify a theory of change;
- Review of goals set at the beginning of the process in the strategic brief.

🔗 **Prioritization workshop concept note template**

4   **Roadmap workshop**

The Roadmap workshop is an opportunity to collectively define specific actions for each action area, the timeline for their implementation, and the actors responsible for carrying them out. The agenda includes:

- Presentation of possible short-, medium- and long-term actions for each action area;

- Small group discussions to prioritize actions and identify responsibilities;

- Validation of priorities.

🔗 **Roadmap workshop concept note template**

5   **Roadmap launch event**

The launch event is an an opportunity to showcase the roadmap and envision its implementation. It happens once the roadmap has been shared with the multi-stakeholder group for comments and is validated by the steering committee. The agenda includes:

- Presentation of the roadmap;

- Panel discussion about roadmap implementation and monitoring;

- Pledge to support the implementation of the roadmap.

🔗 **Roadmap launch event concept note template**

2.2.2 Thematic working groups

The thematic working groups are technical groups that focus on a specific topic and support roadmap development by providing inputs for the assessment and the roadmap design. There are three suggested groups that cover the five action areas and objectives of the GlobalABC framework. However, delivery teams may decide to have more or fewer working groups to cover the action areas:

1. Strategic priorities and urban and spatial development

2. Buildings (new and existing)

3. Construction supply chain

Who are the participants?

Each group should have around **10-20** participants with expertise in their respective topics. This can include practitioners and academics. Participants are all members of the multi-stakeholder group.

What are the thematic working groups' roles during roadmap development?

The thematic working group should stay engaged throughout the roadmap's development and beyond. The group members' participation in the roadmap development process includes:

- **Supporting the assessment** by sharing their knowledge and pointing out relevant resources to the assessors;

- **Conducting a technical review of the baseline assessment and roadmap drafts;**

- **Advising** on the actions to consider for the roadmap;

- **Participating in thematic group meetings** once a month and in one-on-one interviews organized by the delivery team;

- **Participating in events and workshops** as members of the multi-stakeholder group.

The three thematic working groups meet once a month on the same day, so they can be merged when needed. The technical experts, members of the delivery team, select the topic to discuss and manage the meeting. Each technical expert will be in charge of several working groups. Meetings can be either in person or online, depending on the local context and the discussion topic.

What are the actions to mobilize and engage the thematic working group?

☐ **Inform the multi-stakeholder group members before the kick-off workshop that thematic working groups will be created.** This could be part of the kick-off workshop communication.

☐ **Present the thematic working groups, their roles, member engagement needs and the participation methodology** during the kick-off workshop.

☐ **Request that people volunteer in the different groups** during the kick-off workshop. Thematic group members should have expertise in the buildings and construction sector and be available for monthly meetings. Also, it can be suggested that people participate in specific working groups based on the results of the stakeholder mapping and their areas of expertise.

☐ **Consolidate the list of participants,** and follow up and inform members of their effective participation in the groups.

☐ **Develop the meeting schedule and engagement plan.**

☐ **Share the meeting schedule and engagement plan with the participants.**

2.2.3 Building and Construction National Alliance

National Alliances are non-profit platforms that bring together the different stakeholders along the buildings and construction sector value chain who share a common objective: the decarbonization and sustainability of the sector for a better future for all. National Alliances seek to bridge the sector's fragmentation. They facilitate knowledge sharing and the identification of common goals, and play an advocacy role by raising awareness among their members and the public.

National Alliances are often financed through memberships and can be hosted by a government body that provides support (e.g., office spaces, human resources) and could be linked to an international alliance (e.g., National Alliances such as Green Building Councils or others).

Who are the participants?

National Alliance participants are voluntary members. National Alliances seek a **diverse and broad member base of actors along the buildings and construction sector value chain,** including national and local government actors, non-governmental organizations, civil society organizations, and manufacturing, recycling, design, construction, real estate and building management professionals/organizations.

For more information about National Alliances, you can read the report [National Alliances for Buildings and Construction: long-term partnerships for the energy transition](#), Programme for Energy Efficiency in Buildings (PEEB).

What is the National Alliance's role during roadmap development?

The National Alliance is a key stakeholder mobilization, advocacy and dissemination partner. Its role extends beyond roadmap development and should be sustained throughout implementation. The specifics of the role will depend on each National Alliance's capacities. Here are a few suggested roles:

- **The National Alliance co-hosts events and workshops** related to the roadmap's development.

- **The National Alliance organizes knowledge sharing events** to raise public awareness about the need to decarbonize the buildings and construction sector, e.g., conferences about ways to reduce embodied carbon in the buildings and construction sector, and ensuring equal access to green buildings.

- **The National Alliance organizes or co-hosts dissemination events** for the roadmap, once completed.

What are the actions to mobilize the National Alliance?

- **If there is already an alliance in the country,**

  □ **The government focal point should contact the National Alliance** and explain the key role it needs to play, and confirm its willingness to participate in the roadmap creation process.

  □ **The delivery team and the alliance representatives should agree on the alliance's detailed role.**

- **If there is no alliance in the country,** the delivery team should advocate to create one. The multi-stakeholder group can transition and become a National Alliance.

TIPS BOX:

How to keep the groups engaged throughout the entire roadmap development process

Stakeholders are usually willing to commit if they feel their contribution matters and see the tangible benefits of their participation. Here are a few things you can do to enhance their participation:

- Clearly define the objectives. Possible action: during the kick-off workshop, you can ask stakeholders to further detail the objectives that have been agreed upon by the steering committee. One of the questions for discussion could be "What are the outcomes you expect from the roadmap creation process?"

- Regularly update the stakeholders on the advancement of the roadmap development process. Possible action: send a newsletter detailing the progress and next steps once a month, or create a group chat with members of the thematic groups.

- Ensure consistent and visible government support. Possible action: regularly engage the government focal point to show political interest and commitment. For example, government representatives can attend key workshops and meetings, provide updates and demonstrate their active involvement in the roadmap's progress.

- Quickly answer their requests or questions. Possible action: engage someone who will be dedicated to stakeholder management and will be available to answer stakeholders in a timely manner.

- Create personal relationships so stakeholders know who to reach out to and feel engaged with that person. Possible actions: the stakeholder focal point reaches out to all stakeholders individually or has small group interactions so they can get to know and recognize each other.

- Enhance interactions among stakeholders so they feel they are all working together towards the same goals. Possible action: organize in-person meetings, events and workshops and plan breakout sessions and small group interactions so everyone gets to know each other.

- Be committed and professional so they can also reciprocate. Possible actions: stick to deadlines and communicate any changes.

- Identify and include stakeholders that have high levels of interest. Possible actions: when conducting the stakeholder mapping, assess stakeholders' priority and influence levels, and tailor your communication towards those with high levels of interest and influence.

GOOD PRACTICE:

International collaboration: Empowering ministries for climate action in Bangladesh

Actively involving leading authorities, such as representatives from relevant ministries, in international conferences and forums focused on decarbonization can significantly increase their engagement with, understanding of and ownership of the roadmap development process. In Bangladesh, the Ministry of Housing representatives' participation in international conferences and forums has demonstrably increased their understanding and commitment to developing a roadmap to decarbonize the buildings and construction sector. This exposure to global best practices and successful case studies from other countries has fostered a sense of ownership and urgency within the ministry.

STEP 3:
Baseline assessment

The purpose of Step 3 is to develop a comprehensive understanding of the current state of the buildings and construction sector in the target country or region. The baseline assessment follows the five action areas defined by the GlobalABC, namely: (1) strategic priorities, (2) spatial and urban development, (3) existing buildings, (4) new buildings, and (5) construction supply chain. For each of these action areas, the baseline assessment considers the two following dimensions:
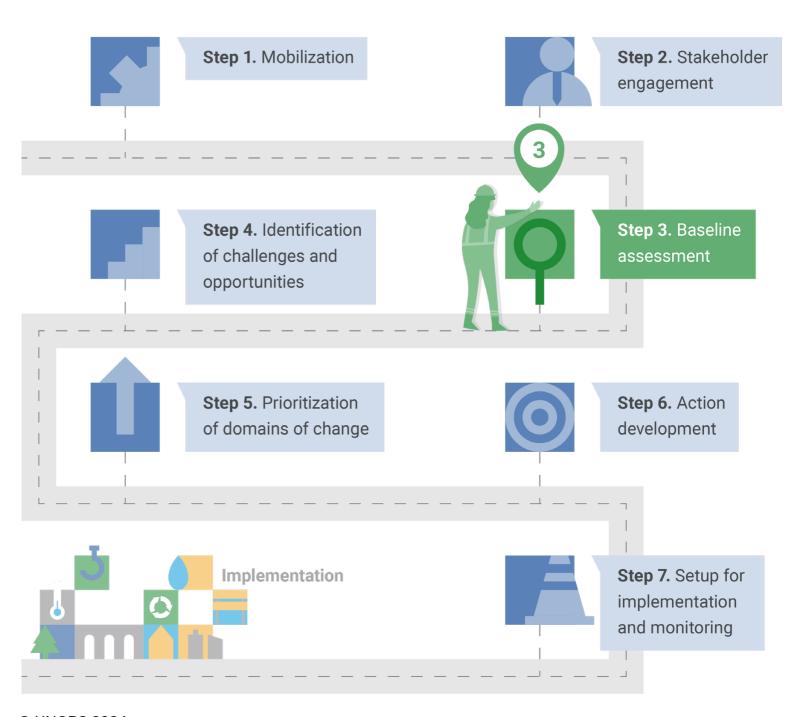
- **The physical environment,** which refers to the physical contexts related to the buildings and construction sector and how they impact carbon emission, adaptation, wellbeing and inclusion. It includes business-as-usual and built environment projections for 2030 and 2050.

- **The enabling environment,** which refers to the policies, regulations, institutional frameworks, market conditions and supporting mechanisms that influence the ability of key stakeholders to take actions for sustainability within the buildings and construction sector.

The overall Step 3 is to be completed within four to five months and starts once *sub-step 2.1: Stakeholder and initiative mapping* is completed, either in parallel with or after *sub-step 2.2: Establishment and management of stakeholder groups*.
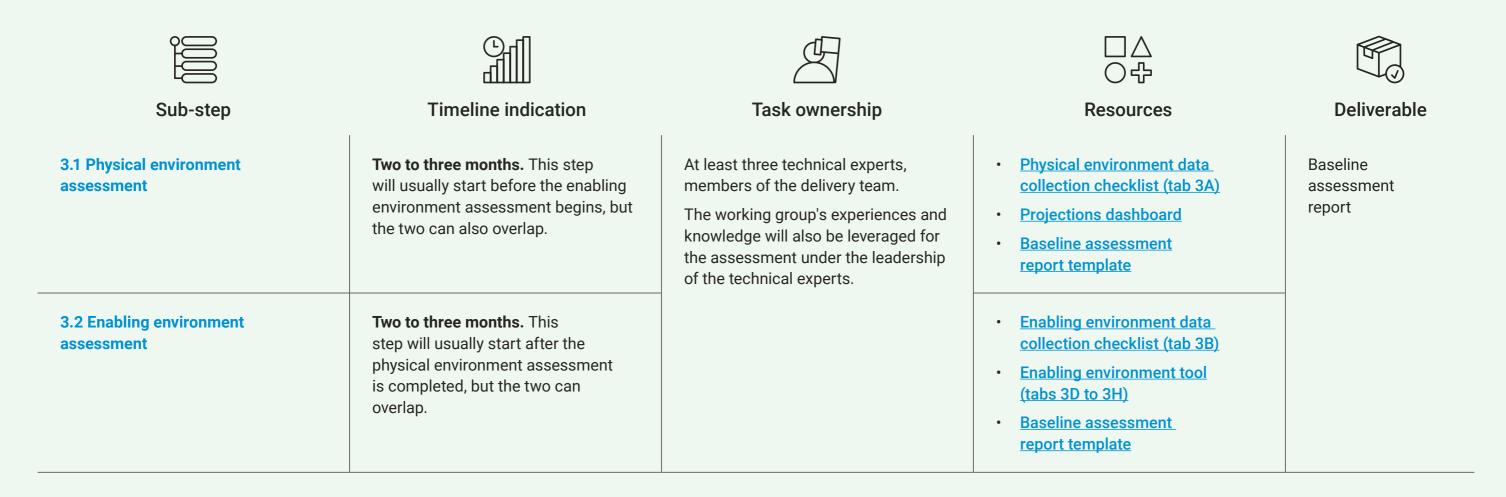
12-20 weeks

Figure 6. GlobalABC Roadmap step-by-step development (Step 3)

Step 1. Mobilization

Step 2. Stakeholder engagement

Step 4. Identification of challenges and opportunities

Step 3. Baseline assessment

Step 5. Prioritization of domains of change

Step 6. Action development

Implementation

Step 7. Setup for implementation and monitoring

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Step overview

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
3.1 Physical environment assessment	**Two to three months.** This step will usually start before the enabling environment assessment begins, but the two can also overlap.	At least three technical experts, members of the delivery team. The working group's experiences and knowledge will also be leveraged for the assessment under the leadership of the technical experts.	• **Physical environment data collection checklist (tab 3A)** • **Projections dashboard** • **Baseline assessment report template**	Baseline assessment report
3.2 Enabling environment assessment	**Two to three months.** This step will usually start after the physical environment assessment is completed, but the two can overlap.		• **Enabling environment data collection checklist (tab 3B)** • **Enabling environment tool (tabs 3D to 3H)** • **Baseline assessment report template**	

Sub-steps

Step 3 involves two sub-steps: (1) Physical environment assessment and (2) Enabling environment assessment.

3.1 Physical environment assessment

The physical environment assessment evaluates the current status of the buildings and construction sector's physical components and how they contribute to and are impacted by climate change. It uses both quantitative and qualitative data to inform the analysis. This assessment is critical tofoster an evidence-based approach to roadmap development.

The physical environment assessment seeks to draw a comprehensive picture of the buildings and construction sector and analyze its impact on carbon emissions, adaptation, and wellbeing and inclusion. The assessment evaluates four of the five GlobalABC action areas – spatial and urban development, existing buildings, new buildings, and the construction supply chain – against the four GlobalABC objectives. Key baseline metrics to be collected include urban population density, the ratio of land consumption to population growth, the share of urban population living in informal settlements, annual embodied carbon emissions from the building stock, annual operational carbon emissions from the building stock, the ratio of nationally produced to imported construction materials, and the percentage of recycled construction materials, among others. Table 4 on the next page provides further details about the metrics and topics analyzed in each action area.

Table 4. Physical environment assessment framework

	A.A.2: Spatial and urban planning	A.A.3: Existing buildings	A.A.4: New buildings	A.A.5: Construction supply chain
Drivers	• **Urbanization** (location, population, trend) • **Urban expansions** (drivers, trend and impact)	• **Building stock** (number of existing buildings, uses, periods and characteristics)	• **Construction trend** (future buildings, drivers, impact on carbon emission) • **Design and technological innovations** (prefabricated, reduced material use techniques, etc.)	• **Demand for materials** • **Material innovations** (insulation, blocks, etc.) • **Systems innovations** (Building Management Systems, etc.)
Zero embodied carbon	• **Urban and rural fabrics** (density, zoning, segregation, urban typologies, etc.)	• **Building embodied carbon** (materials and techniques) • **Decommissioning** (building lifespan, trend, drivers, practices) • **Renovation** (building condition, energy efficiency and adaptation renovation, renovation cost)	• **Recent building characteristics** (types, passive design, ventilation, insulation, materials, construction techniques, etc.) • **Building embodied carbon** • **Construction site** (construction site waste management practices, machinery, environmental protection, and health and safety)	• **Raw material extraction** (types, renewables, resource depletion, wood focus) • **National material production and importation** • **National systems production and importation** • **National appliance production and importation** • **Freight (importation and in-country routes)** • **Waste management and recycling** • **Recycled materials**
Zero operational carbon	• **Access to electricity** (grid and district energy supply) • **Heat islands** (effects, factors and vegetation coverage – parks, streets and roofs)	• **Building energy-efficient design** (specificities related to passive design, ventilation, solar protection, daylighting and insulation) • **Building energy consumption** (heating, cooling, cooking, lighting, etc.) • **Energy sources and carbon emission** (all energy sources, • renewable energies, and impact • on carbon emissions, the • environment and health) • **Heating and cooling systems** (trend, energy efficiency) • **Appliances** (trend, energy efficiency)	• **Energy consumption and emissions** (current and future trends, shares and carbon impacts) • **Heating and cooling systems** (current and future trends, and impact on emissions) • **Appliances** (current and future trends, and impact on emissions)	

	A.A.2: Spatial and urban planning	**A.A.3:** Existing buildings	**A.A.4:** New buildings	**A.A.5:** Construction supply chain
Adaptation	• **Territorial and urban resilience and adaptation** (areas at climate risk, population in climate risk areas)	• **Building vulnerability and adaptation** (building stock resilience level and adaptation needs)	• **Adaptation** (new and future building resilience, and impact)	• **Adaptation for extraction and production** (climate change impacts and adaptation measures)
Wellbeing and inclusion	• **Slums** (locations, sizes, hazards, specific issues hindering climate action objectives) • **Urban expansion, environmental degradation and environmental protection** (construction activities, carbon sequestration, health impacts, biodiversity loss, protected areas, green belt, etc.)	• **Affordability of and equal access to housing** (housing deficit, etc.) • **Accessibility** (characteristics and impacts)	• **Affordability of and equal access to housing** • **Accessibility**	• **Extraction of materials and the environmental degradation and pollution caused by production** • **Material pricing and availability** • **Vernacular materials and associated construction techniques**

What are the actions to conduct the physical environment assessment?

☐ **Define the analysis scope and each technical expert's role** so the assessment effectively supports the roadmap's creation. The strategic brief, previously developed, should help identify the following:

a. The geographic area (e.g., country, state, region);

b. A specific focus, if any (e.g., housing).

Also, technical experts will be assigned different action areas based on their expertise.

☐ **Conduct desk research** add to the quantitative and qualitative data necessary to assess the physical environment using the physical environment data collection checklist (tab 3A) and the projections

dashboard. At this stage, technical experts are advised to fill out the report template and add the data sources in the data collection checklist tab. This will help them keep track of the collected information. Artificial Intelligence (AI) can be used to support this process and browse through a large number of documents faster (nevertheless, note that AI cannot replace the work or expertise required to complete this step).

Note: Desk research for the enabling environment assessment can be initiated in parallel. The technical experts will likely find information about the enabling environment when looking for information about the physical environment.
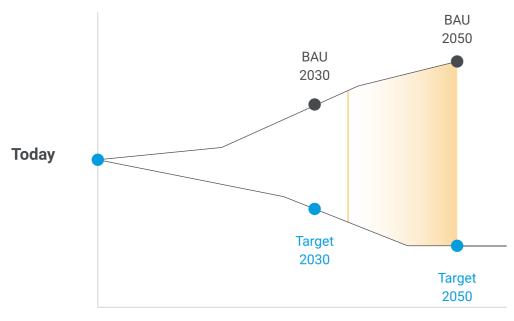
☐ **Identify key targets and achievement gaps.** [Optional, depending on whether the country has set targets for the GlobalABC objectives or not]. For those countries that have defined clear objectives and targets at this stage, it is possible, as part of the physical environment

assessment, to identify the objective achievement gap, i.e., how far the country is from achieving the targets set out in the four GlobalABC objectives. The achievement gap can be calculated as the difference between the business-as-usual (BAU) projections and the country targets set as part of the national objectives or national strategies that were included in the strategic brief *(see Figure 7)*. Additionally, to include more information about the status of the country, the projections dashboard provides objective indicators of status and projections for the next years as well as a comparison with the regional and global averages. These indicators can be used to complement the information from the desk research and assist in filling in possible data gaps. For more information about how to use the dashboard, see the section *How to set targets and identify achievement gaps using the dashboard*.

☐ **Identify information gaps that couldn't be addressed through desk research.** The technical expert should list missing information and determine the strategy to collect this data. This strategy may include:

Figure 7. Achievement gap

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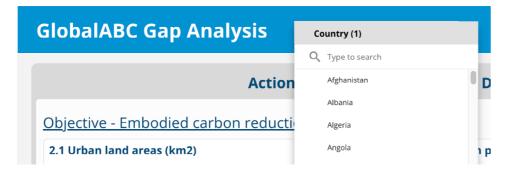
1. Requesting working groups for more information;

2. Conducting interviews with stakeholders; or

3. Requesting additional documents from government or non-government entities (e.g., to access data not available online).

☐ **Identify topics to discuss with the working groups.** The technical experts identify critical issues for climate action (e.g., the urban heat island effect, traditional materials). The objective of bringing these topics to the working group is to identify missing information sources, collect first hand experiences and initiate reflection.

☐ **Prepare a consultation plan to interview stakeholders,** collect missing information and cross-check collected information. The consultation plan should include the interviewee's contact information and questions tailored to each person. For guidance on how to prepare interview questions, *see the tips box on page 43*.

☐ **Review the consultation plan with the working groups** before starting interviews. This will help identify the right stakeholders to interview and the appropriate questions to ask.

☐ **Consult with the working groups** once a month to discuss identified topics and collect information.

☐ **Conduct interviews with stakeholders.** For guidance on how to conduct interviews, *see the tips box on page 43*.

☐ **Develop a first draft of the assessment report** using the baseline assessment report template. This first draft can be shared with the working groups for review. Each working group will review its part – for example, the spatial and urban development working group will review its corresponding part.

☐ **Finalize the report** by integrating the feedback received from the working groups.

How to set targets and identify achievement gaps using the dashboard

☐ **Open the** [projections dashboard](#) and type to search the corresponding country *(see Figure 8)*. The dashboard will show information about several indicators per action area and objective.
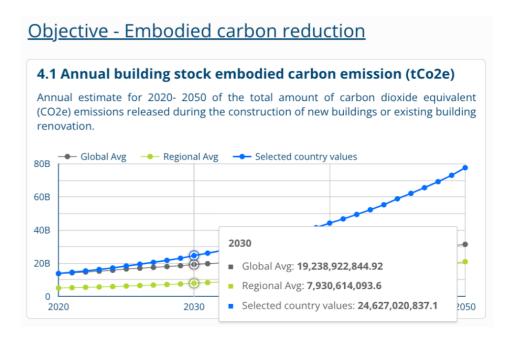
Figure 8. Country selection in projections dashboard

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☐ For each action area, **identify the projected values of indicators the country has set targets against.** For example, if you are looking at the annual building stock embodied carbon emissions of new buildings, locate the projected value for the year 2030. In the sample, this value would be 24.6 MtCO2e *(see Figure 9)*.
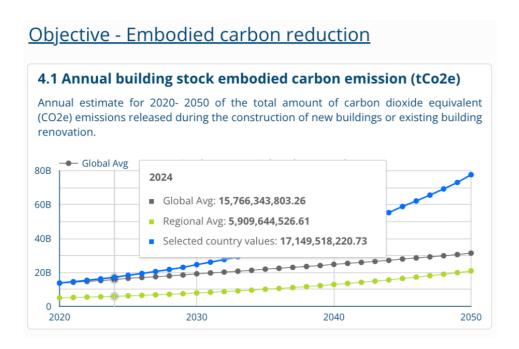
Figure 9. Projected value for the country's indicator (blue line)

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☐ **Obtain the target value** set by the country for the same indicator. This information should be defined in the strategic brief. For example, the country's target might be reducing the annual building stock embodied carbon emissions of new buildings by 40 per cent by 2030 relative to 1990 levels. To understand what that perc entage means in absolute terms, you will need to check the country emissions for the current year in the graph *(see "Selected country values" in Figure 10)*, and calculate the 40 per cent, then subtract that value from the original amount. In this case, the annual building stock embodied carbon emissions in 2024 approximately equal 17.15 MtCO2e, so the target set by the country would be 17.15 - (17.15 * 40/100) = 10.3 MtCO2e. The same table identifies the BAU value of emissions in 2030 at 24.6 MtCO2e.

Figure 10. Indicator value for the country in 2024 (blue line)

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□ **Calculate the achievement gap by subtracting the projected value from the target value and interpret the results.** The formula will look like this: **Achievement Gap =** Target Value - Projected Value.

In the example given, the achievement gap would be as follows: **Achievement Gap =** 24.6 (2030 BAU) - 10.3 (target reduction) = 14.3 MtCO2e.

The achievement gap here indicates that the country is projected to exceed its target annual embodied carbon emissions by 14.3 MtCO2e if no action is taken.

*An alternative if no targets are set by the country is to use the chart and visuals to help identify the projected values if no measures are taken. For the value above, if no actions are taken, emissions will rise by 42.6 per cent: (24.6 [2030 BAU] - 17.15 [2024 current emissions])/17.5 = 42.6%.

Another option is to compare with a peer country or the regional or global average: check if the country is over- or underperforming according to global and regional averages now and in its projections for 2030, 2040 and 2050, and why this is happening.

□ **Report the results** in the corresponding section of the baseline assessment template.
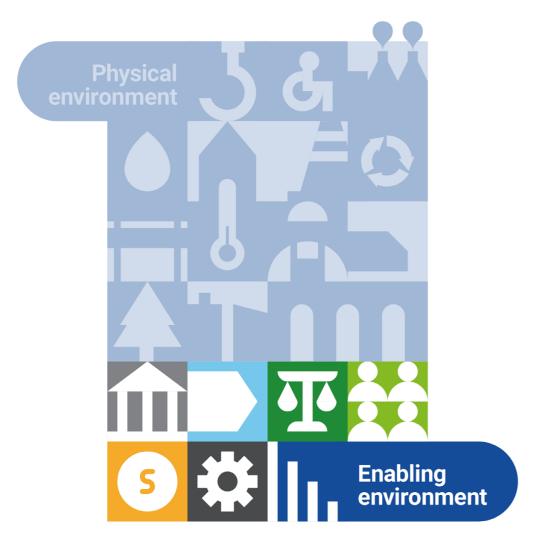
3.2 Enabling environment assessment

The enabling environment assessment evaluates the current status of the enabling environment for the buildings and construction sector, focusing on how buildings are planned, delivered and managed. Acquiring a good understanding of the enabling environment is critical to identifying what impairs or supports the physical environment to adapt to and mitigate climate change *(see Figure 11)*.

The assessment uses a question-based tool that gathers qualitative data and generates graphs that support the analysis.

The assessment looks at seven enabling domains: (1) institutional arrangements, (2) institutional processes, (3) policies, laws and regulations, (4) stakeholder engagement, (5) financial resources and funding, (6) knowledge and technical capacities, and (7) data management and reporting through the five GlobalABC action areas. For each action area, the assessment identifies the enabling environment's capacity to achieve the four GlobalABC objectives, namely (1) Zero Embodied Carbon, (2) Zero Operational Carbon, (3) Adaptation, and (4) Wellbeing and Inclusion. For a detailed picture of the analyzed topics, you can refer to the **enabling environment assessment framework (tab 3C)**.

Figure 11. The enabling environment assessment framework

Institutional arrangements, (2) Institutional processes, (3) Policies, laws and regulations, (4) Stakeholder engagement, (5) Financial resources and funding, (6) Knowledge and technical capacities, (7) Data management and reporting.

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What are the actions to conduct the enabling environment assessment?

- **Clearly define the technical experts' roles** to ensure good collaboration and coordination. Each expert will be assigned specific action areas.

- **Conduct desk research** using the [enabling environment data collection checklist (tab 3B)](#) to identify the qualitative data necessary to assess the enabling environment. Data collection happens in two ways: (1) online research and (2) reaching out to government entities and organizations to identify documents that are not available online or to access more up-to-date ones.

- **Start answering the tool questions** [(tabs 3D to 3H)](#) using the collected data. It is strongly advised to write a small narrative answer and cite the sources for each question. Also, AI can support this process by browsing through a large number of documents faster. For instance, you can use ChatPDF: upload all the documents you have collected (ensure no confidential documents are included), write the tool questions in the ChatPDF interface to get an answer and always cross-check the answers for accuracy.

- **Identify information gaps,** which include information that couldn't be identified through desk research. The technical expert should look at the unanswered questions and compile a list.

- **Determine the strategy to collect missing information.** The strategy can include:

  1. Consultation with the thematic working groups;

  2. Individual or group interviews with stakeholders.
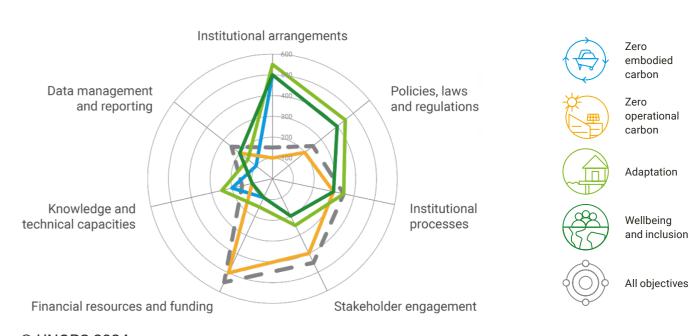
  Conversations with thematic working groups and stakeholders will be particularly beneficial for answering questions about effectiveness, graded 1 (lowest) to 5 (highest). These discussions are crucial to gather different points of view and answer the questions as objectively as possible.

- **Collect missing information** by leveraging the two identified approaches as follows:

1. **Consult with the thematic working groups:**

- **Identify topics/questions to discuss with each thematic working group.**

- **Organize thematic working group meetings.** The meetings related to the enabling environment assessment can take different shapes:

  i. Discuss the enabling environment tool questions one by one during workshops; one workshop for each action area.

  ii. Embed the tool questions within a broader discussion about a specific topic. For example, a working group meeting on the current challenges and opportunities in financing the decarbonization of the buildings and construction sector is an opportunity to collect answers to the questions related to the financial resources and funding enabling domain.

2. **Conduct individual or group interviews with specific stakeholders:**

- **Prepare a consultation plan to interview stakeholders,** collect missing information and cross-check collected information. The consultation plan should include the interviewee's contact information, interview time, location and questions. For guidance on how to prepare interview questions, *see the tips box on the next page*.

- **Conduct interviews with stakeholders.** For guidance on how to conduct interviews, *see the tips box on the next page*.

☐ **Answer all the tool questions** using the information collected during thematic working group meetings and interviews. Responding to the questions will automatically generate an output diagram for each action area and objective *(see Figure 12)*.

☐ **Analyze the output diagrams** to identify areas for improvement, which should later be highlighted in the report.

☐ **Develop the first draft of the enabling environment assessment report** using the answers to the tool questions and the generated diagrams, and following the [baseline assesment report template](#).

Note: The idea of the report is not to summarize all the sections, but to pay special attention to the key data highlights and the main challenges identified through the diagrams and the assessment. Also note synergies and other ongoing opportunities in the country.

☐ **Ask the thematic working groups to review the draft report.** Each working group will review its part – for example, the spatial and urban development working group will review the section on spatial and urban development.

☐ **Finalize the report** by integrating the feedback received from the thematic working groups.

Figure 12. Sample diagram showing the performance of the seven enabling domains for an action area

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TIPS BOX:

How to prepare interview questions

- Before conducting interviews, test the questions to ensure clarity and consistency of understanding, especially when translating concepts from English to local languages.

- Conduct semi-structured interviews. This approach combines open-ended and follow-up questions to gather more specific information and evidence.

- Limit open-ended questions to a maximum of 15 questions.

- Refrain from including yes/no questions, and questions that can be answered through desk research. However, interviews can be used to cross-check information gathered from other sources.

- Avoid leading questions, i.e., questions that prompt or encourage the answer wanted.

- Keep the questions as short and specific as possible. Avoid asking two-in-one questions.

- Avoid questions with strong positive or negative associations.

- Avoid phrasing a question as a negative.

- Include warm-up questions, e.g., about the interviewee's background, role and responsibilities.

- Start with simple and less sensitive questions, gradually moving towards more complex or sensitive ones.

- Group questions by topic.

How to conduct successful interviews

- Consider sharing a copy of the questions with interviewees in advance (optional).

- Consider assigning the same questions to different stakeholders to cross-check information and gather different perspectives.

- Aim for interviews to last approximately one hour. Adjust the number of questions asked to stay within the allotted time.

- Allow interviewees to speak without interruption, practicing active listening.

- Adjust questions according to the flow of the interview flow, e.g., skip questions if they have already been answered.

- Take notes during the interview.

- After the interviewee answers a question, restate the answer to confirm understanding.

- At the end of the interview, try to summarize the talking points and findings. Identify any necessary follow-up actions, such as scheduling another session or requesting additional information. Aim to obtain any required documents during or immediately after the interview.

- Inform the interviewee of the next steps in the roadmap development process.

- The interview notes can be shared with the interviewee for them to add information.

STEP 4:
Identification of challenges and opportunities

The purpose of Step 4 is the identification of challenges and opportunities, which includes the drafting of problem trees. These will inform the identification of priority areas of intervention later on.

The overall Step 4 is to be completed within approximately four weeks and starts once *Step 3: Baseline assessment* is well advanced.

4 weeks

Figure 13. GlobalABC Roadmap step-by-step development (Step 4)

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Step overview

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
4.1 Listing of challenges and opportunities	**Two weeks.** This step usually starts once the physical and enabling environment assessments have almost been completed. However, the technical experts may start listing the challenges and opportunities as they make progress with the baseline assessment.	The technical experts, members of the delivery team, draft the list of challenges and opportunities. The list is validated and completed with stakeholders in the Challenges and opportunities workshop.	• <u>Baseline assessment report template (section on challenges and opportunities)</u> • <u>Challenges and opportunities workshop concept note template</u>	List of challenges and opportunities per action area
4.2 Root cause analysis or problem trees	**Two weeks.** This follows the listing of challenges and opportunities.	The technical experts draft a first version of the problem trees that will serve as a basis for further discussion and finalization with stakeholders in the Prioritization workshop *(Step 5)*.	• <u>Miro digital platform</u>	A problem tree per action area

Sub-steps

Step 4 involves two sub-steps: 1) Listing of challenges and opportunities, and 2) Root cause analysis or problem tree mind mapping.

4.1 Listing of challenges and opportunities

How to draft the list of challenges and opportunities?

- **Compile an exhaustive list of the challenges and opportunities for each action area** identified during the physical and enabling environment baseline assessments. Use the tables provided in the challenges and opportunities section of the [baseline assessment report template](#) for that purpose. Table 5 shows an example of challenges for the spatial and urban development action area.

  Note: When listing the challenges, it is recommended to first list the challenges identified in the physical environment *(see central column of Table 5)*, and then the related enabling environment challenges that are underlying causes of those physical challenges *(see right column of Table 5)*. An underlying cause in the enabling environment refers to a policy, regulation, knowledge or institutional factor that contributes to or exacerbates the physical challenge. Organizing the information in this way will facilitate the drafting of problem trees at a later stage.

- **Organize a workshop with the thematic working groups to present and collect feedback on the preliminary findings of the baseline assessment and the initial list of challenges and opportunities.**

  🔗 [Challenges and opportunities workshop concept note template](#)

Table 5. Examples of challenges in the physical and enabling environments for the spatial and urban development action area

Objective	Challenges in the physical environment	Related challenges in the enabling environment
Zero embodied carbon	Urban development in main cities characterized by sprawl	Non-compliance with spatial planning guidelines and zoning regulations
		Restrictions on building height in zoning regulations
Zero operational carbon	Low perc entage of tree cover in main cities	Land use change (conversion of green areas into commercial or residential zones)
		Inadequate zoning regulations that do not include provisions to preserve green spaces or create new ones in new developments
Adaptation	25 per cent of the population living in flood-prone areas	Inadequate zoning regulations that do not restrict development in flood-prone areas
	Poor flood drainage and mitigation system	within government agencies" is repeated. I suggest: "Insufficient technical expertise and capacity within government agencies in risk reduction measures
Wellbeing and inclusion	30 per cent of the urban population living in slums	Insufficient government funding for affordable housing programmes
		Discouragement to invest in housing improvement due to insecure land tenure
	Lack of affordable housing	Speculation of housing prices

☐ **Finalize the list** by integrating the information and feedback collected during the workshop.

☐ **Use the list for** *sub-step 4.2*, i.e., root cause analysis or problem trees.

4.2 Root cause analysis or problem tree mind mapping

A root cause analysis is a systematic process used to identify the underlying causes of problems or challenges. The challenges identified during the enabling environment assessment are underlying causes of those identified in the physical environment assessment. At the same time, some enabling environment challenges are the root causes of others.

Mind mapping, on the other hand, is a visual technique used to organize and represent information in a hierarchical or interconnected manner. The purpose of this sub-step is to draft a diagram that provides a clear, systemic and comprehensive visualization of the relationships between the challenges and opportunities identified in the previous step and the objectives to be achieved, but also the connections and interdependencies between the different layers of challenges. Moving forward, we will refer to this diagram as a **problem tree**. The problem trees will facilitate the identification of intervention strategies at a later stage.

What are the actions to conduct the root cause analysis and draft the problem trees?

☐ **Look at the list of challenges and opportunities from the previous sub-step.** Also have the baseline assessment report on hand, as the narrative explaining the challenges and opportunities may help you with the next steps.

☐ Using a digital blackboard tool (i.e., Miro, Canva, Lucid Chart) or any other interactive tool for drawing diagrams, **start by linking the physical challenges**
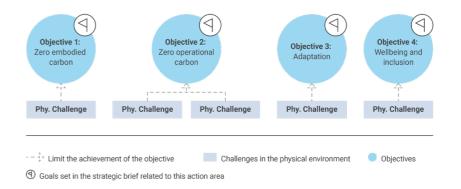
to the four GlobalABC objectives and the goals you had set in the strategic brief *(see Figure 14)*.

Note: You may not have defined goals for all the action areas related to all the objectives in the strategic brief. It is important to highlight this in the problem tree. Later on, in *Step 5*, the country team will have the opportunity to revisit the goals initially set and also identify new ones, for instance new national objectives to be incorporated into Nationally Determined Contributions.

Figure 14. Linking physical challenges to objectives

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☐ **Add the enabling environment challenges that are linked to the physical challenges in the diagram.** When doing this exercise, you may find that some of the challenges listed in *sub-step 4.1* are the root causes of others. Use the problem tree to show this relationship, i.e., organize the challenges in a hierarchical manner *(see Figure 15)*.

For example, one of the challenges identified in the enabling environment assessment could be the lack of technical expertise in risk reduction, leading to inadequate zoning regulations, in turn putting the population at risk. At the same time, the *lack of technical expertise* may be caused by *the absence of educational programmes on climate change or*
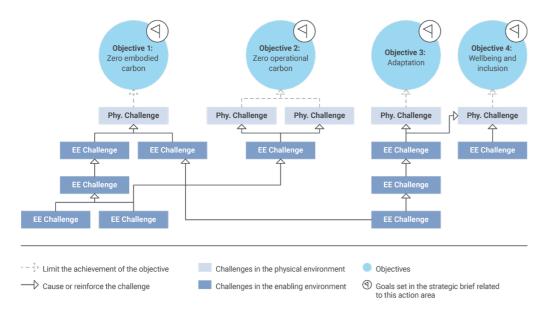
risk reduction. These technical capacity challenges should be clearly reflected in the lowest level of the problem tree *(see Figure 16)*.

☐ **Add the opportunities identified in** *sub-step 4.2* **to the diagram following the same logic** *(see Figure 17)*. The resulting problem tree should be similar to *figure18*.

Note: Figure 18 depicts only a few challenges per objective for illustrative purposes. Technical teams are expected to draft more detailed problem trees showcasing the challenges identified in the baseline assessment.

☐ **In a workshop, ask the thematic working groups to review the problem trees and provide feedback.** Each working group will review their corresponding problem tree as well as those of other groups, as some challenges and opportunities may overlap across different objectives.

☐ After the workshop, **finalize** the problem tree incorporating the feedback received.

Figure 15. Hierarchy of challenges

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Figure 16. Example of a basic problem tree showing different levels of challenges

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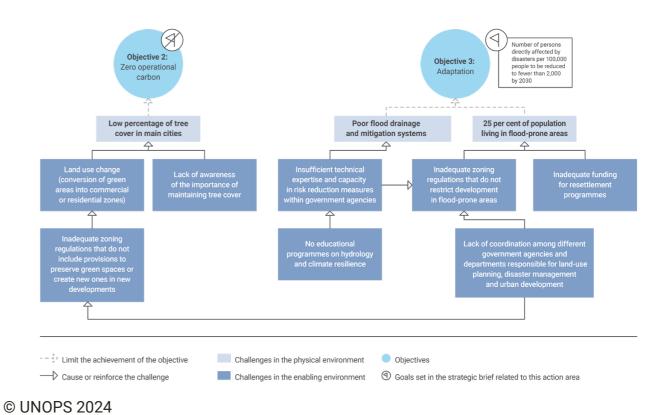
Figure 17. Root cause analysis or problem tree

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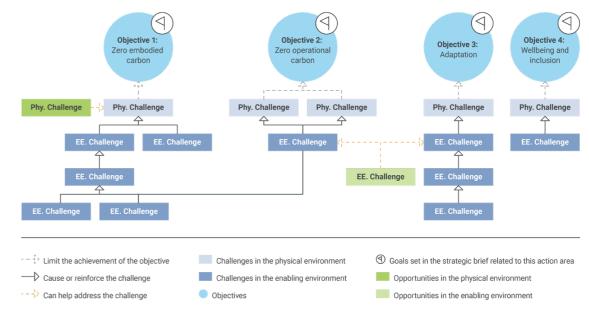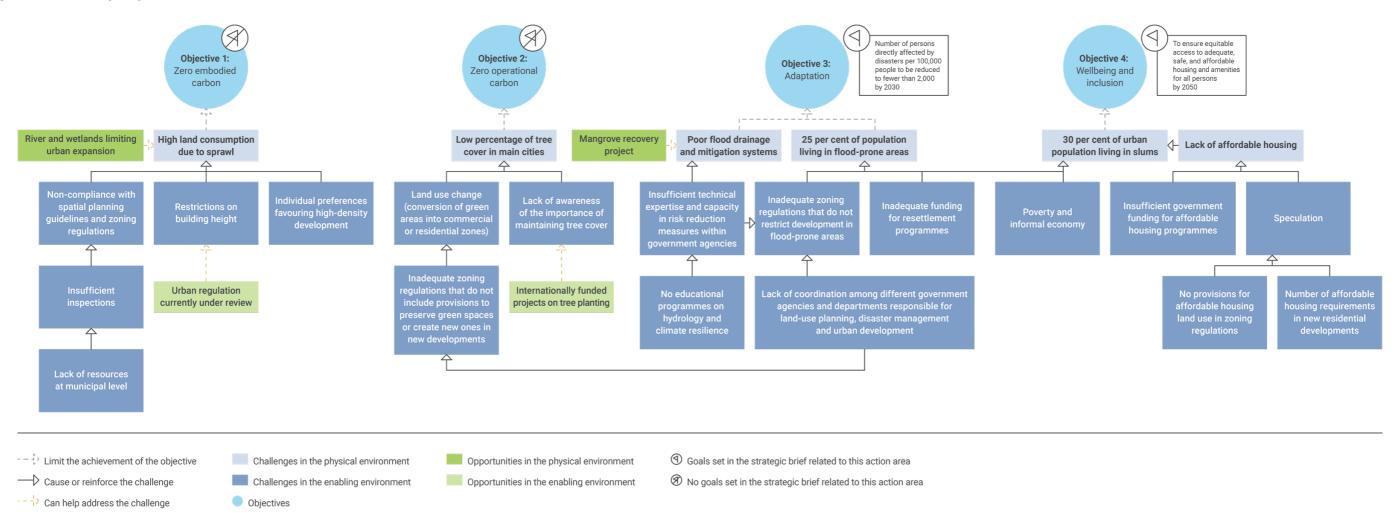
Figure 18. Sample problem tree for an action area

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GOOD PRACTICE:

Ghana's collaborative approach to identification of challenges

Ghana's journey towards a decarbonized buildings and construction sector began with a commitment to a collaborative approach. Recognizing the importance of diverse perspectives, the delivery team organized two dedicated workshops in February and March 2024, bringing together a wide variety of stakeholders across sectors and institutions. These workshops served a dual purpose: to gather additional inputs and cover information gaps identified during the initial baseline assessment, and to identify the most pressing challenges that the roadmap should address.

These workshops became a cornerstone of the roadmap development process, since they not only yielded a robust baseline assessment, but also helped identify the most pressing challenges that the roadmap should address, along with some priority areas for intervention. Furthermore, the workshops fostered a sense of ownership and commitment among stakeholders, ensuring that the roadmap aligned with their priorities and reflected the unique context of Ghana.

STEP 5:
Prioritization of domains of change

Step 5 establishes the priority areas of intervention and the final goals and targets the roadmap will help achieve. The overall Step 5 is to be completed within four to six weeks and starts once *Step 4* is finalized.

4-6 weeks

Figure 19. GlobalABC Roadmap step-by-step development (Step 5)

Step 1. Mobilization

Step 2. Stakeholder engagement

Step 4. Identification of challenges and opportunities

Step 3. Baseline assessment

5

Step 5. Prioritization of domains of change

Step 6. Action development

Implementation

Step 7. Setup for implementation and monitoring

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Step overview

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
5.1 Prioritization of domains of change	**Two weeks.** This process will start once the root cause analysis or problem trees *(sub-step 4.2)* have been completed.	The technical experts, members of the delivery team, draft a proposal for the prioritization of domains of change per action area; this will serve as a basis for further discussion with stakeholders in the Prioritization workshop.	• [Miro digital platform](#) • [Prioritization workshop concept note template](#)	Problem tree highlighting priority areas of intervention (i.e., domains of change) per action area
5.2 Development of solution trees	**One week.** This follows the prioritization of domains of change.	The technical experts, members of the delivery team, develop the solution trees.		Solution tree per action area
5.3 Review of objectives and targets	Around **two weeks.** This follows the drafting of solution trees. The process starts during the Prioritization workshop, and it is finalized by the technical team afterwards.			List, table or diagram showing objectives, sub-objectives, outcomes and corresponding targets per action area

Sub-steps

Step 5 involves three sub-steps: 1) Prioritization of domains of change, 2) Development of solution trees, and 3) Review of objectives and targets.

5.1 Prioritization of domains of change

Domains of change are those conditions (challenges or groups of challenges with associated root causes) that significantly contribute to the overarching problem and that need to change to reach the objectives. Domains of change always include at least one physical challenge and associated enabling environment challenges. Following the root cause analysis or problem trees in *sub-step 4.2*, this sub-step focuses on prioritizing the domains of change that the roadmap will tackle.

What are the actions to prioritize the domains of change?

☐ **Have a look at the problem tree diagrams drafted in** *sub-step 4.2*.

☐ **Using the information collected during the baseline assessment** *(Step 3)*, **highlight the objectives that have the biggest achievement gaps** in a different color *(see Figure 20)*. For instance, there will be a big gap related to adaptation if one of the goals set in the strategic brief is to reduce the population affected by disasters to fewer than 2,000 people by 2030, and the current population at risk is estimated at 3,500,000, or if one of the goals is reducing emissions from manufacturing cement by 20 per cent by 2030 and the current reduction annual rate is 1 per cent. Please note that the gap size will be approximate. It will be analyzed by experts and validated by the government focal point.

In cases where no goals were set for an objective in the strategic brief, or it is difficult to estimate the gap in a quantitative manner, the following criteria and questions should guide the prioritization:

• **Indirect impact/multiplier:** Which domains will enable or hinder other domains of change?

• **Opportunity:** Where are there more opportunities (e.g., political momentum, synergies with ongoing initiatives, funding)?

• **Alignment:** Are the domains of change in alignment with the current priorities and policies of the government and with international agendas (e.g., are they mentioned in the Nationally Determined Contributions, National Development Plans, National Adaptation Plans or United Nations Sustainable Development Cooperation Framework)?

• **Buy-in:** Is there political support to address this domain of change? Will it count on popular acceptance?

• **Risk:** Is there any domain of change in which the effectiveness of actions may be greatly affected by external factors (political changes, global trends, etc.)?

☐ **Organize a workshop with the thematic groups to agree on four to six domains of change** to be prioritized. Please note that this is only a recommended number.

🔗 **Prioritization workshop concept note template**

☐ **Highlight the prioritized domains of change** in a visible color. The rest of the domains of change can remain a lighter color *(see Figure 21)*.

Figure 20. Diagram highlighting achievement gaps
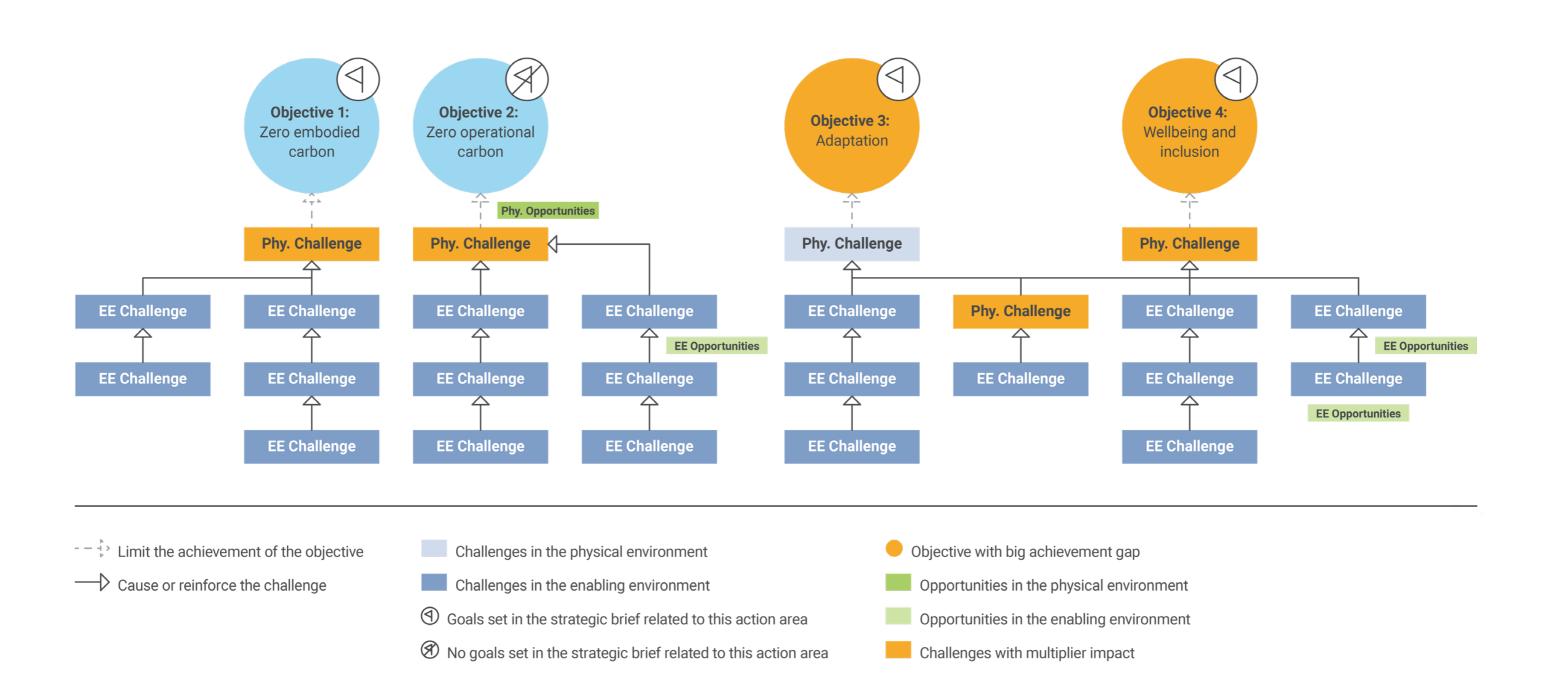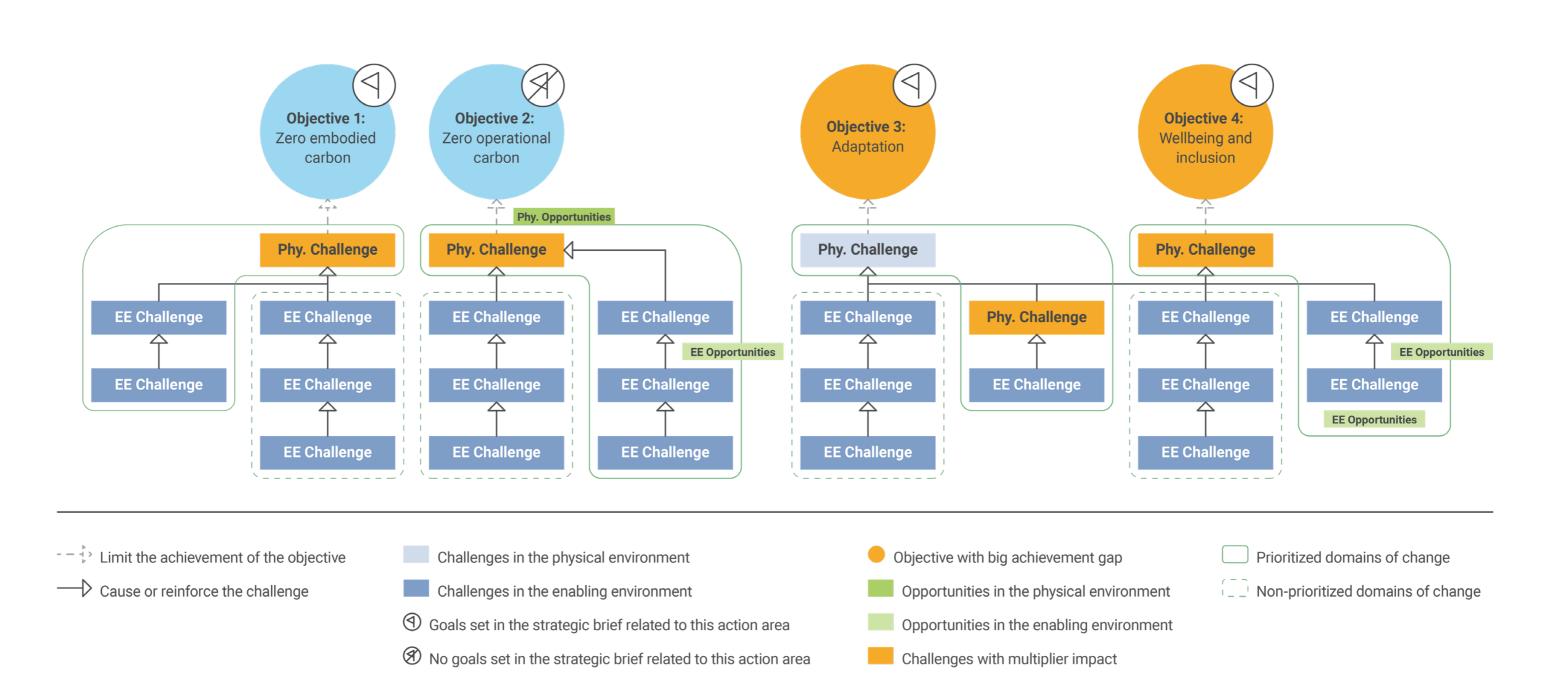
Figure 21. Prioritized domains of change

Legend:

- ⫶ Limit the achievement of the objective
- → Cause or reinforce the challenge
- ◐ Goals set in the strategic brief related to this action area
- ⊘ No goals set in the strategic brief related to this action area

- Challenges in the physical environment
- Challenges in the enabling environment

- Objective with big achievement gap
- Opportunities in the physical environment
- Opportunities in the enabling environment
- Challenges with multiplier impact

- Prioritized domains of change
- Non-prioritized domains of change

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5.2 Development of solution trees

A solution tree is a visual representation used to illustrate the pathways or strategies that can lead to the achievement of the desired outcomes or objectives. The solution trees are drafted collaboratively by the delivery team and the multi-stakeholder group during the Prioritization workshop, following the prioritization of domains of change.

Note: Alternatively, the delivery team can draft the solution trees in advance for all domains of change. This is recommended if the time allocated during the workshop for the drafting of solution trees is limited.

How to develop a solution tree

- **Add solutions to the problem tree** and indicate which challenges they address. A solution can address several challenges and should build on the opportunities previously identified *(see Figure 22)*. Keep in mind that solutions are not single actions, but rather interventions that encompass several actions. For example, a drainage improvement programme that includes policy development, capacity building and demonstrative projects can be a solution towards reducing risk and increasing resilience. Solutions should be mutually reinforcing to achieve a specific outcome by addressing one or more causes of a challenge.

  Note: If you draft the solution tree ahead of the workshop, you can use Miro or the tool that you have used to draft the problem trees. If the solution tree is developed during the workshop, you can use large-sized paper and cards to allow stakeholders to build it. In any case, the solution trees need to be validated with the government focal point.

- **Draft the solution tree by transforming each enabling environment challenge and physical challenge in the problem tree into expected outcomes** (desired changes related to the enabling environment) **and sub-objectives** (desired changes related to the physical environment). Make sure to maintain the logical flow of solutions to achieve the desired change *(see Figure 23)*.

  Note: Figure 23 depicts only a few solutions for some objectives for illustrative purposes. Technical teams are expected to draft more detailed solution trees for each objective.

Figure 22. Adding solutions to problem trees

Figure 23. Sample solution tree

Objective 1:
Zero embodied carbon

Objective 2:
Zero operational carbon

Objective 3:
Adaptation

Number of persons directly affected by disasters per 100,000 people to be reduced to fewer than 2,000 by 2030

Reduced land consumption

Increased percentage of tree cover in main cities

Improved drainage and mitigation systems

Reduced percentage of population living in flood-prone areas

Spatial planning guidelines and zoning regulations enforced

Restrictions on building height

Individual preferences favouring high-density development

Preserved green areas

Awareness raised of the importance of maintaining tree cover

Technical expertise and capacity in risk reduction measures in place within government agencies

Adequate zoning regulations that restrict development in flood-prone areas

Inspections carried out

Zoning regulations include provisions to preserve green spaces and create new ones in new developments

Available educational programmes on hydrology and climate resilience

Develop new zoning regulations and enforcement strategy

Include climate resilience courses in urban planning and engineering degrees

Drainage improvement programme

Contributes to the achievement of the sub-objective   Helps achieve the outcome and/or the sub-objective   Sub-objectives   Outcomes   Solutions
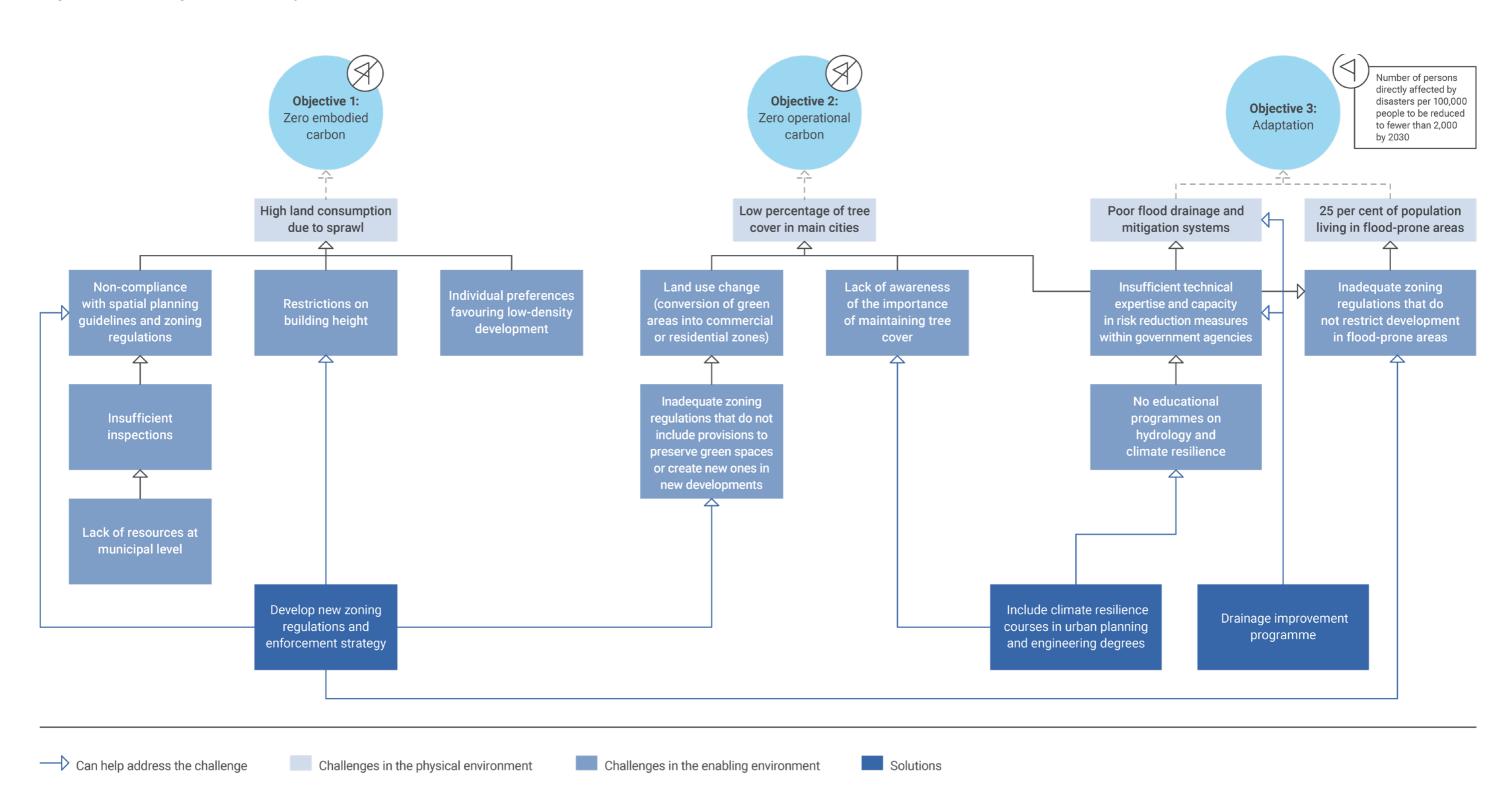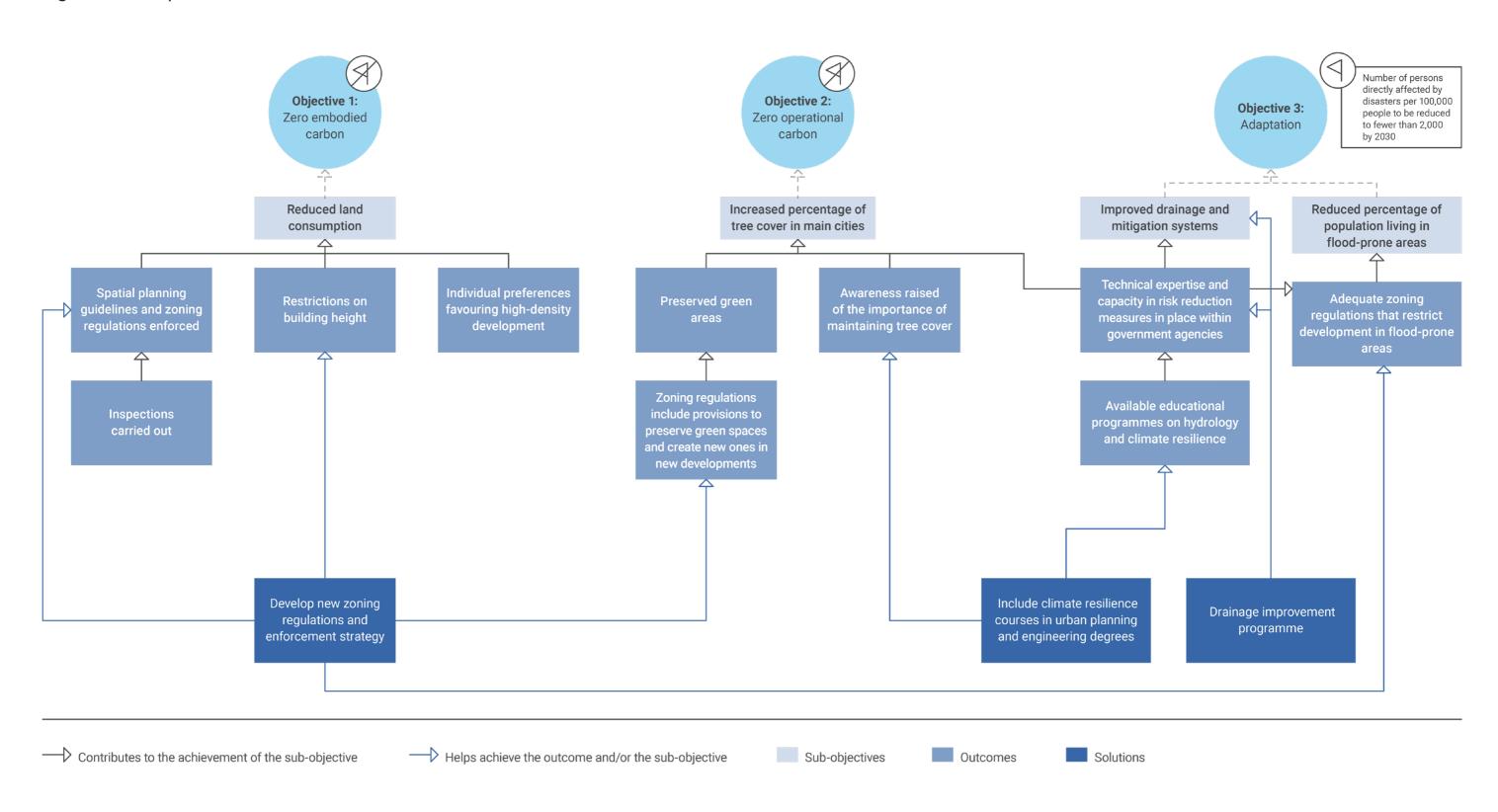
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5.3 Review of objectives and targets

The previous step helped identify outcomes and sub-objectives related to the four GlobalABC objectives. The purpose of this sub-step is to review the goal or goals defined in the strategic brief, modify them if deemed necessary based on the actual information collected and analyzed so far, and reclassify them according to the categories of outcomes or sub-objectives. Where no goals had been defined in the strategic brief, this is the opportunity to define them with the corresponding thematic group.
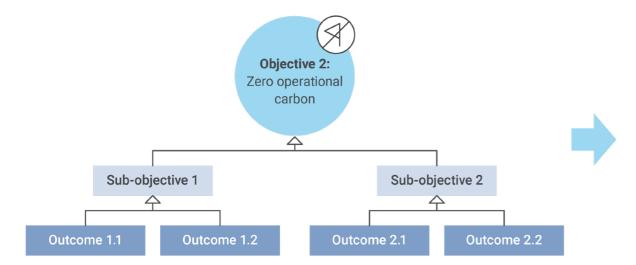
What are the actions to review the objectives and targets?

☐ **Check the goals defined in the strategic brief** and reclassify them according to the categories of outcomes or sub-objectives. If goals are modified or rewritten, validate them with the relevant authorities or the ministry focal point.

☐ **In a table, list all sub-objectives and outcomes under each GlobalABC objective.**

☐ During the Prioritization workshop, **define new sub-objectives with the thematic group and key stakeholders if needed** (i.e., in case no goals had been set for a specific action area or objective in the strategic brief).

☐ **Set the targets for each sub-objective and outcome** *(see Figure 24 and Table 6)*. Remember that targets need to be specific, measurable, achievable, relevant and time-bound (SMART). When setting targets, make sure they are in line with international and national agendas.

Note: Some of the targets may mostly depend on technical interventions, while others will only be reached if supported at the highest level of governance. During the workshop, the group should agree on which political targets they will bring to the steering committee, and further

meetings at a higher level may need to be organized to finalize and validate these targets, including those defined by the thematic groups.

Figure 24. Target setting

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Table 6. Target example

Country objectives	Sub-objective/ Outcomes	Baseline	2030	2040	2050
Reduce operational carbon of new buildings	New buildings meet energy efficiency standards	Not available	80 per cent of new public buildings meet energy efficiency requirements	80 per cent of all new buildings meet energy efficiency standards and incorporate sustainable design principles	100 per cent of new buildings meet energy efficiency standards and incorporate sustainable design principles
	Improved building code and standards	No energy efficiency requirements	Building code includes energy efficiency requirements	Widespread use of energy efficiency standards in design. Compliance with energy efficiency requirements is made compulsory and penalties are in place	Systematic adoption of energy efficiency standards in design
	Skills in energy efficiency design practices strengthened for architects, engineers and builders	Limited use of bioclimatic design	Sustainable design principles integrated into architecture curricula	80 per cent of architecture firms employ a sustainable design expert	Widespread use of bioclimatic design in projects
	Improved data management for energy efficiency	No data management system in place	Administrations require buildings to declare energy consumption Information about energy efficiency and data management systems is made public	There is a regulation in place to set standards for operational energy and required performance per building	100 per cent of new buildings perform well in terms of operational energy 100 per cent of new buildings calculate and declare their energy consumption

GOOD PRACTICE:

Senegal's definition of strategic areas for intervention

During the roadmap development process, in May 2024, the Senegal delivery team strategically leveraged the national Innovative Materials and Sustainable Construction in West Africa (MICD-AO) Forum to organize the Prioritization workshop. This approach allowed the team to bring together over 40 participants from government, the private sector, academia and development partners, many of whom were international attendees. The workshop began with a presentation of the roadmap development methodology and the results of the baseline assessment of the buildings and construction sector in Senegal. This provided a shared understanding of the current state of the sector and the challenges that needed to be addressed.

Furthermore, the workshop facilitated a collaborative discussion among participants, leveraging the insights gained from detailed problem trees previously developed by the delivery team. These problem trees, visually representing the relationships between challenges, opportunities and the country's decarbonization objectives, facilitated a deeper understanding of the underlying issues that hinder progress in achieving decarbonization goals. This deeper understanding, in turn, helped the participants identify concrete actions to be included in the roadmap, reflecting the diverse perspectives and expertise of the participants. In addition to allowing participants to agree on priority areas for intervention, the workshop also provided a valuable opportunity to identify potential demonstration projects, like the development of a guide for the construction of sustainable buildings in West Africa, with a focus on Senegal.

STEP 6:
Action development

Step 6 defines the actions required to achieve the goals and targets set in *Step 5*, as well as the timeline and the actors responsible for their implementation. Once this is done, the theory of change can be completed.

The overall Step 6 is to be completed within 12 to 14 weeks and starts once *Step 5* is completed.

12-14 weeks

Figure 25. GlobalABC Roadmap step-by-step development (Step 6)

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Step overview

	Sub-step	Timeline indication	Task ownership	Resources	Deliverable
6.1 Identification of actions		**Two weeks.** This step will start once the sub-objectives, outcomes and respective targets *(sub-step 5.3)* have been set.	Implemented by the technical experts, members of the delivery team, and validated with stakeholders ahead of the Roadmap workshop.	• [Action identification and prioritization tool (tab 6)](#) • [Actions library](#) • [Roadmap workshop concept note template](#)	Longlist of actions per action area and outcome
6.2 Prioritization of actions		**One to two weeks.** This will start once a longlist of actions per action area has been identified and validated.	Started by the technical experts, members of the delivery team, and finalized collaboratively with stakeholders during the Roadmap workshop. Shortlisted actions and the timeline are also validated by the steering committee.		Shortlist of actions per action area and outcome
6.3 Definition of timeline and responsibilities		**One week.** This step follows the prioritization of actions and is done during the Roadmap workshop.			Shortlist of actions with indicative timelines and responsible actors
6.4 Completion of theory of change		**Two weeks.** This will start once the definition of the timeline and responsibilities is completed.	Implemented by the technical experts, members of the delivery team, usually the same team that conducted the prioritization of domains of change and developed the problem trees *(steps 5.1* and *4.2* respectively).		Diagram or table summarizing the theory of change for each action area

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
6.5 Project concept definition	**Two weeks.** This can start during the action prioritization exercise.	Implemented by the technical experts, members of the delivery team, usually the same team that conducted the prioritization of domains of change and developed the problem trees (*steps 5.1* and *4.2* respectively).	• **Project concept template**	Diagram or table summarizing the theory of change for each action area
6.6 Roadmap drafting	**10 to 12 weeks** This can start once the baseline assessment *(Step 3)* has been completed.	Implemented by the technical experts, members of the delivery team, usually the same team that carried out *Steps 3*, *4* and *5*. External resources as required may be hired for proofreading and editing.	• **Roadmap template**	Roadmap

Sub-steps

Step 6 involves the following sub-steps: 1) Identification of actions, 2) Prioritization of actions, 3) Definition of timeline and responsibilities, 4) Completion of the theory of change, 5) Project concept definition, and 6) Roadmap drafting.

6.1 Identification of actions

Following the prioritization of the domains of change, and the definition of outcomes and sub-objectives in *sub-step 5.2,* this sub-step focuses on generating a longlist of potential actions based on the challenges, opportunities and solutions from *Step 5* to identify the actions required to achieve the outcomes and sub-objectives. This longlist must be evidence-based, informed by the baseline assessment *(Step 3)* and the problem trees *(sub-step 4.2)*.

What are the steps to complete the identification of actions?

- ☐ **For each action area, have a look at the solution trees drafted in** *Step 5*.

- ☐ In the <u>Action identification and prioritization tool (tab 6)</u>, indicate the action area that the actions belong to. It is recommended to duplicate the spreadsheet in order to have one sheet per action area.

- ☐ **For each action area, list the country objectives** under column B **and the outcomes per objective defined in** *Step 5* under column C.

- ☐ **Define and list all the actions that are necessary to achieve the identified outcomes** under column D. The proposed actions should respond to all the challenges identified in the problem trees. Therefore, they may include regulatory framework review and update, development

of guidelines, capacity building activities, tool development, as well as physical interventions. For example, if one of the expected outcomes for the new buildings action area is increasing the reuse of recycled construction materials by 30 per cent, a longlist of actions could include: 1) Developing and implementing policies that mandate the reuse of demolition waste in public construction projects; 2) Establishing a data collection and management system to track the flow of demolition waste; 3) Integrating sustainable construction practices into vocational training institutions' curricula; 4) Implementing a demonstrative project that showcases successful examples of material reuse in public infrastructure projects, etc.

TIPS BOX:

How to define actions

- Consult other countries' decarbonization roadmaps and international best practices to get inspired.

- Identify actions that have been recommended or taken in a similar context that could help address the challenges identified in the problem trees.

- Identify ongoing or planned actions led by a relevant ministry or entity the roadmap actions could support or establish synergies with.

- Make sure each action proposed fulfils the following criteria:

  - **It is directly aligned with at least one of the roadmap objectives (i.e., zero embodied and operational carbon, adaptation, wellbeing and inclusion) and the country**

objectives (e.g., 50 per cent emission reduction in brick production by 2030). An example of this is incorporating renewable energy requirements in the building code, or training city planners in disaster risk reduction.

- **It addresses one or more key enabling environment challenges identified during the baseline assessment.** This may include institutional arrangements, policy, processes, financing, technical knowledge, or data management-related issues. Examples of these are:

Institutional arrangements: Establish a National Alliance for Buildings and Construction to promote knowledge sharing and multi-stakeholder collaboration

Policy or regulation: Draft a policy that mandates the reuse of demolition waste in public construction projects; approve a health and safety law that includes the construction sector

Processes: Define standardized metrics and rating systems to assess and compare the energy efficiency of buildings

Financing: Establish incentives for private companies for the reuse of materials from demolition

Stakeholder engagement: Launch awareness campaigns to educate property owners, builders and developers about the importance of building resilience and available retrofitting options

Technical knowledge: Implement workforce training programmes to upskill construction workers in green building techniques and renewable energy installations

Data management: Establish a centralized database on buildings' energy consumption, efficiency measures and performance metrics

Please note that the actions that have the highest impact usually encompass elements across several enabling environment domains. For example, to establish a centralized database on building energy consumption, it may be required to define protocols or processes for data collection, enact regulations that mandate the reporting of energy consumption data, etc.

- **It is context-specific** and tailored to the local conditions and the specific challenge being addressed. It clearly identifies the target audience and authorities responsible for its implementation. An example of this is a localized green building certification programme with criteria that take into account local climate conditions, building practices, regulations and resources. The action should specify the involvement of the corresponding entities, e.g., the Ministry of Environment to set sustainability standards, the Ministry of Housing for oversight, local Green Building Councils for third-party verification, and the local governments for compliance. Further, the action should indicate the target audience, e.g., construction companies, architects and property developers.

- **It aligns with existing regulations** or can be supported by new policies to facilitate implementation.

- **It does not result in negative impacts on people/communities** (e.g., loss of jobs). An example of an action that might not pass this criterion is a policy solution that could negatively impact people by putting them out of work. Actions should instead promote a just transition or mitigate the risks of transitioning

to a decarbonized buildings and construction sector for some stakeholders. An example of this is establishing green jobs training programmes for workers employed in carbon intensive industries.

- **It is specific, measurable, achievable, relevant and time-bound (SMART).**

☐ **Share the longlist of actions with the corresponding working group and the steering committee** for their feedback and input ahead of the Roadmap workshop.

☐ **Integrate the feedback received and consolidate a longlist of actions per action area and outcome.**

6.2 Prioritization of actions

Many actions may be required to achieve a specific outcome or sub-objective. In order to optimize resources and efforts, it is recommended to prioritize the ones that will have the biggest impact.

What are the steps to prioritize actions?

☐ **Define clear and measurable prioritization criteria** to assess each action and validate it with stakeholders ahead of the Roadmap workshop. Alternatively, and if time and resources allow, you can organize a dedicated workshop or meeting with all the working groups to define the criteria. Please note that the criteria need to be the same for all specific areas. The number of criteria is up to you, although a maximum of four is recommended to facilitate the action screening.

As an example, the following three criteria are proposed:

- **Criticality:** This criterion evaluates the importance and urgency of the action to achieve the outcome and the overall decarbonization objectives. Factors to consider may include:
  - Estimated impact of the action on the reduction of carbon emissions, or on the promotion of adaptation, wellbeing and inclusion;
  - How urgently this action is needed to address immediate challenges and contribute to long-term decarbonization objectives;
  - What the potential impact of not implementing this action is on the achievement of the outcome.

Actions with significant impact and relevance for outcome achievement will receive higher scores.

- **Feasibility:** This criterion evaluates the practicality and achievability of implementing the action given existing resources, technical capabilities and institutional capacities. Factors to consider may include:
  - Availability of financial resources;
  - Availability of technologies or solutions needed for implementation;
  - Availability of skilled personnel to carry out the action;
  - Organizational capacity and human resources needed to support the implementation of the action;
  - Political will to support and complete the action.

Actions for which political support, funding, the necessary technologies and skilled personnel are available will receive higher scores.

- **Co-benefits:** This criterion evaluates the additional positive impacts (environmental, social, economic, etc.) and synergies generated by the action beyond its primary purpose. Factors to consider may include:

- Long-term sustainability benefits beyond immediate carbon reductions (e.g., job creation, community resilience, inclusion);

- Scalability of the action to impact other outcomes or objectives.

Actions with positive socioeconomic impacts and multiplier effects will receive higher scores. If unintended negative impacts are identified, the action should be dismissed.

☐ **Assign weights to each criterion** based on its relative importance to achieving the outcomes. For the above sample criteria, the following weights are defined:

- Criticality = 50 per cent;

- Feasibility = 30 per cent;

- Co-benefits = 20 per cent.

Note: The Action identification and prioritization tool has been set for the aforementioned criteria and weights. However, it can be adapted as needed by changing the criteria names and descriptions, or modifying the weights for each criterion in columns E, G and I.

Also, an alternative decision-making methodology, such as the Analytical Hierarchy Process (AHP), can be used to assign weights for each criterion based on the averaged opinion of the working groups and considering local context.

☐ **Organize a workshop** with the leading authority and the working groups to review and prioritize the actions.

🔗 [Roadmap workshop concept note template](#)

☐ During the Roadmap workshop, work with stakeholders to **score each action** against the criterion using a consistent rating scale (e.g., 1 to 3, where 1 = low; 2 = moderate; 3 = high). For the sample criteria, the scoring would be as follows:

- 1 = Low criticality (minimal impact on outcome); 3 = High criticality (significant impact on outcome);

- 1 = Low feasibility (major challenges in implementation); 3 = High feasibility (feasible with available resources);

- 1 = Low co-benefits (minimal additional positive impact); 3 = High co-benefits (substantial additional positive impact).

☐ **Input the scores** in the corresponding column **in the tool**. The overall rating for each action is calculated automatically, and actions are classified as 'low priority', 'medium priority' or 'high priority' accordingly.

☐ **Discuss the results with stakeholders** and agree on a final shortlist of actions.

6.3 Definition of timeline and responsibilities

Once the actions have been prioritized, this step consists of determining whether they will be implemented in the short, medium or long term, and who will be responsible for them. This is done during the Roadmap workshop.

What are the actions to define the timeline and responsibilities?

☐ **Discuss the timeline of each prioritized action with stakeholders** and indicate in column M of the tool whether it will be implemented in the short, medium or long term. Use the following guidance:

- **Short term:** Short-term actions are those that can be completed within the next one to two years. They usually require relatively low financial and time investment and can be implemented with existing solutions or technologies. Sometimes, they need to be completed in order to enable longer-term actions.

- **Medium term:** Medium-term actions are those to be implemented within the next three to five years. They usually require the involvement of multiple stakeholders, potential regulatory considerations, strategic planning and resource allocation. In some cases, medium-term actions can only be initiated once a short-term action has been completed.

- **Long term:** Long-term actions are those to be completed over a horizon beyond five years. They usually involve transformation in policies and practices, requiring considerable collaboration across multiple sectors and stakeholders and resources. Some may depend and build on the outcomes of short- and medium-term actions.

  Note: In addition to the timeline, it is important to discuss the sequence of actions with stakeholders, i.e., determine the logical order in which actions should be implemented to maximize effectiveness and ensure that dependencies are considered. This information should be clearly indicated in the final roadmap document.

☐ **For each action, indicate the leading actors for implementation and other stakeholders that need to be involved** under columns N and O, respectively.

  Note: The roadmap is a vision document with actions that need to be monitored to ensure its effective implementation. A comprehensive monitoring and evaluation system needs to be developed following the release of the roadmap and the definition of the implementation setup. The leading authorities will define the framework for monitoring progress, tracking performance indicators and measuring the impact of implementation actions. They will also define reporting mechanisms to inform other stakeholders about the progress in implementation.

☐ **Validate** the prioritized actions, timeline and responsible actors **with the steering committee.**

6.4 Completion of the theory of change

Once the actions have been identified, the last step required to complete the theory of change is to develop a logical framework that illustrates how the actions contribute to achieving the intermediate outcomes, which in turn lead to the achievement of the established objectives. In order to do so, the delivery team can either continue working on the previously developed diagram and add the actions to the solution trees, or list the actions in a table.

What are the actions to complete the theory of change?

☐ **Have a look at the solution trees drafted in** *Step 5*.

☐ **Add the prioritized actions for each outcome to the diagram** *(Figure 26)*. Make sure to show the causal relationships between the actions, outcomes and sub-objectives using arrows. Do this for all the objectives.

  Alternatively, you can create a table and add the actions, timeline and actors responsible for implementation *(see Table 7)*. Do this for all the objectives.

☐ **Share the final theory of change with stakeholders and the steering committee for validation.**

  Note: The theory of change will need to be reviewed regularly during the roadmap's implementation span and refined in case there's new evidence or changes in the country context.

Figure 26. Sample theory of change for operational carbon reduction in new buildings
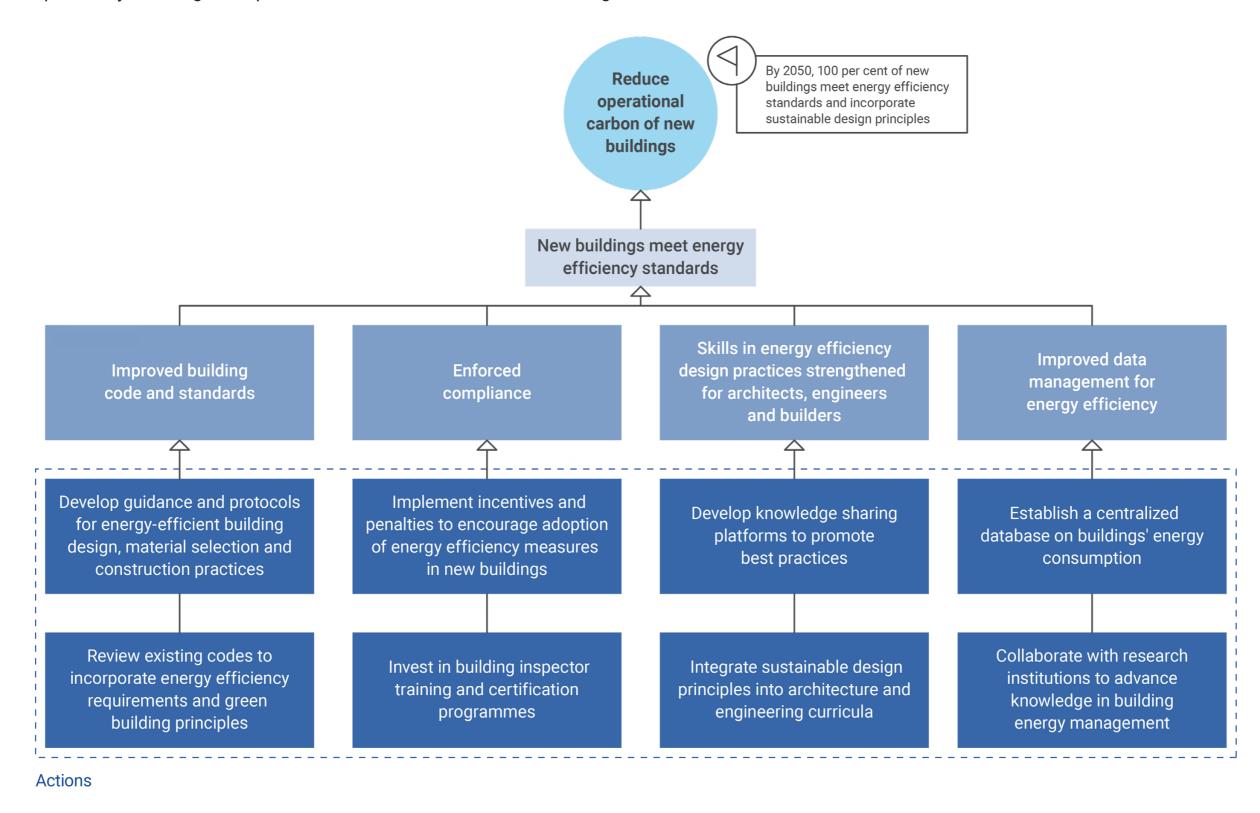
Table 7. Theory of change overview

Country objectives	Outcome	Actions	Timeline	Leading actor
Reduce operational carbon of new buildings	Improved building code and standards	Review existing codes to incorporate energy efficiency requirements and green building principles.		Ministry of Housing
		Define standardized metrics and rating systems to assess and compare the energy efficiency of buildings.		Ministry of Energy
		Develop guidance and protocols for energy-efficient building design, selection of materials and construction practices.		Ministry of Housing
	Enforced compliance	Invest in building inspector training and certification programmes to enhance competency in assessing energy performance and compliance.		Ministry of Housing
		Develop and implement incentives and/or penalties to encourage builders and developers to prioritize energy efficiency measures in new construction projects.		Ministry of Housing
	Skills in energy efficiency design practices strengthened for architects, engineers and builders	Provide specialized training programmes in energy-efficient design techniques for architects, engineers and construction professionals.		Professional Association of Architects and Engineers
		Integrate sustainable design principles into architecture and engineering curricula.		Academia
		Develop knowledge sharing platforms and hold networking events to promote best practices in energy-efficient building design.		Professional Association of Architects and Engineers
	Improved data management for energy efficiency	Collaborate with academic institutions and research organizations to advance knowledge and best practices in building energy management.		Ministry of Energy
		Establish a centralized database on buildings' energy consumption, efficiency measures and performance metrics.		Ministry of Energy

◻ Short-term   ◻ Medium-term   ◼ Long-term

6.5 Project concept definition

This step involves a discussion among the steering committee and relevant technical experts about which priority actions will be further developed into 10 project concepts to mark the path towards implementation. Once developed, these concepts can be presented to donors or partners to explore funding opportunities for the roadmap. Project concepts should combine several of the actions shortlisted in the previous steps and group them into a single, holistic project concept to address the root cause of a particular issue.

Note: Ten is merely a suggested number. The final number of project concepts to be included in the roadmap will be determined in coordination with the ministry focal point, the steering committee and stakeholders.

What are the actions to complete the drafting of project concepts?

- ☐ **Together with the steering committee and stakeholders, identify the priority actions that will be transformed into 10 project concepts** to kick-start roadmap implementation.

- ☐ **In collaboration with the steering committee and relevant entities, draft a project concept** for each of the priority actions using the [project concept template](#). Please note the template can be adapted as required.

- ☐ **Validate the final draft of the 10 project concepts** that will be incorporated in the roadmap document with the steering committee.

6.6 Roadmap drafting

What are the actions to complete roadmap drafting?

- ☐ **Develop the first draft of the roadmap** using the [roadmap template](#).

- ☐ **Share the draft roadmap with key stakeholders from the thematic groups** to validate the roadmap's contents and gather final inputs.

- ☐ **Integrate the feedback received.**

- ☐ **Ask the steering committee to review the draft roadmap.**

- ☐ **Finalize the roadmap** by integrating the feedback received from the steering committee.

GOOD PRACTICE:

Colombia's Net-Zero Carbon Buildings Roadmap: A comprehensive approach to action development

[Colombia's National Roadmap for Net-Zero Carbon Buildings](#), launched in June 2022, provides a robust example of how to define and prioritize actions to decarbonize the buildings and construction sector. Developed in partnership with the World Resources Institute's Zero Carbon Building Accelerator, the roadmap outlines a comprehensive set of 67 goals and 175 transformative actions across 6 key areas: Corporate Practices, Materials, Urban Planning, New Buildings, Existing Buildings, and Informal Settlements. This detailed approach, which includes both formal and informal sectors, is a key strength of the roadmap. The roadmap also incorporates a clear timeline for action implementation, with short-, medium- and long-term goals, and identifies specific actors

responsible for each action. Furthermore, the roadmap includes dedicated chapters on financing and social and gender equity, demonstrating a commitment to a just and equitable transition.

The roadmap's success is attributed to a collaborative effort involving national and local government, the private sector and civil society. Nine working groups with nearly 400 stakeholders from different sectors across the value chain participated in the roadmap's development, ensuring a comprehensive and inclusive approach. This multi-level action is crucial for delivering on Colombia's Nationally Determined Contributions and long-term climate vision.
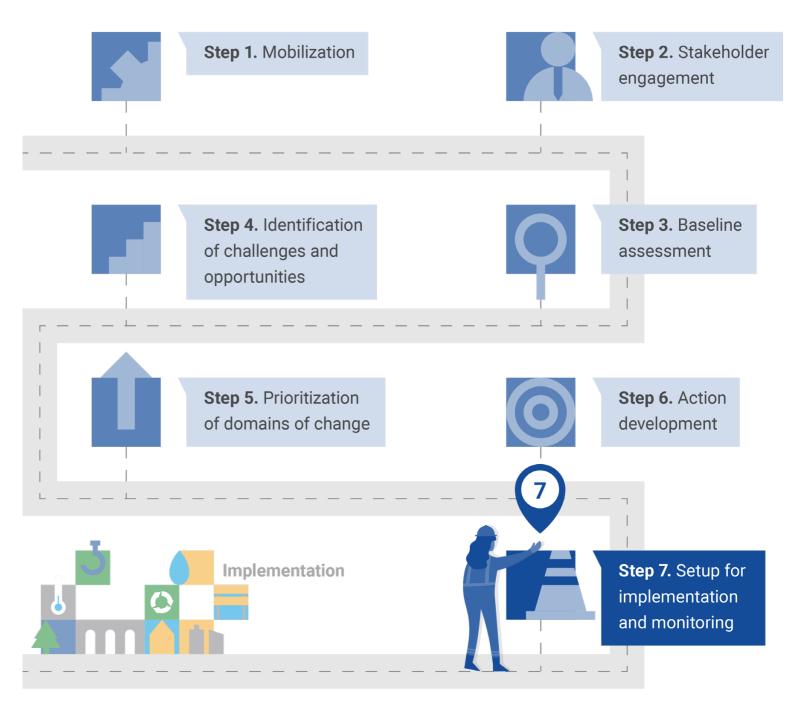
STEP 7:
Setup for implementation and monitoring

Step 7 defines the recommended actions to follow once the roadmap has been drafted. The main objective of this step is to successfully hand the roadmap over for implementation and ensure that a plan for mobilizing funds, along with a monitoring and evaluation framework, is in place. It is therefore crucial for transitioning from planning to execution.

The overall Step 7 is to be completed in approximately two months. However, the duration of this step will vary from country to country and will respond to the timeline and milestones of the government body (or leading entity of the roadmap).

8 weeks

Figure 27. GlobalABC Roadmap step-by-step development (Step 7)

Step 1. Mobilization

Step 2. Stakeholder engagement

Step 4. Identification of challenges and opportunities

Step 3. Baseline assessment

Step 5. Prioritization of domains of change

Step 6. Action development

Implementation

Step 7. Setup for implementation and monitoring

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Step overview

Sub-step	Timeline indication	Task ownership	Resources	Deliverable
7.1 Endorsement and formal adoption	**Two weeks** for the endorsement of the roadmap by the leading authority and steering committee. **Two weeks** for the endorsement of the roadmap by other implementing entities.	The delivery team and the government focal point to acquire endorsement from the leading authority and the steering committee. The leading authority to seek endorsement from other entities. *In case of no endorsement by the leading entity due to diverse issues such as a change of government, it is recommended to seek the endorsement of the steering committee and stakeholder groups.*	• [Letter of endorsement template](#)	Roadmap endorsed
7.2 Publication and dissemination	Publication: **four weeks** for proofreading, graphic design and printing. Dissemination: during an official launch event and continuously during the entire implementation period.	Publication: leading entity with the support of the delivery team. Dissemination: leading and implementing entities, and international partners.	• [Roadmap launch event concept note template](#)	Roadmap published and disseminated in different channels and formats Launch event
7.3 Development of a funding plan	**Two weeks.** This sub-step can start as soon as the roadmap has been endorsed.	Leading entity.		Funding/financial plan
7.4 Definition of implementing and monitoring arrangements	**Two weeks.** This sub-step can start as soon as the roadmap has been endorsed.	Leading entity; steering committee and implementing entities.	• [Monitoring template (tab 7)](#)	Roadmap implementation plan Monitoring framework

Sub-steps

Step 7 involves four sub-steps: 1) Endorsement and formal adoption, 2) Publication and dissemination, 3) Development of a funding plan, and 4)Definition of implementation and monitoring arrangements.

7.1 Endorsement and formal adoption

Endorsing and formally adopting the roadmap involves obtaining approval from and ensuring the commitment of the leading authority and key stakeholders, including government entities, private sector partners, civil society and international partners, to implement or support the implementation of the actions defined in the roadmap.

What are the actions to get the roadmap endorsed and formally adopted by public institutions?

☐ **Obtain endorsement from the leading authority** (e.g., Ministry of Housing).

☐ **Validate with the steering committee and stakeholder groups.** This can be done either before or during the official launch of the roadmap (*see sub-step 7.2*). Note that validating the roadmap with government bodies (e.g., Ministry of Planning, Ministry of Energy) is particularly important so that they can integrate the roadmap actions into their strategies and plans. This will facilitate the allocation of resources for implementation.

☐ **Ask key high-level figures to draft a letter of endorsement** or forewords for the roadmap.

🔗 **Letter of endorsement template**

7.2 Publication and dissemination

Once the roadmap is endorsed, the final version can be published and disseminated. This is a critical step to reach the widest possible audience of stakeholders and ensure awareness, understanding and support for roadmap implementation.

What are the actions to disseminate the roadmap?

☐ **Produce a dissemination plan.** Make sure the plan defines the following aspects:

- Specific goals of disseminating the roadmap;
- Key stakeholders or key audiences the roadmap needs to reach;
- Channels to effectively reach the target audiences;
- Materials required to communicate the roadmap's contents;
- Activities to be undertaken to disseminate the roadmap, including an official event to launch it.

☐ **Organize an official public event to present the roadmap.** The **Roadmap launch event concept note** can help define the agenda. The event should be held on the same date as the publication of the roadmap.

☐ **Publish the roadmap.** The dissemination plan will outline the formats and channels for the roadmap's distribution, including its presentation at the launch event. As a minimum, a digital version of the roadmap should be publicly available on the leading authority's website. In addition, social media, radio or newspapers can also be utilized for wider dissemination.

☐ **Participate in national and international strategic forums, conferences and events** to continuously seek support and funding for the roadmap activities.

☐ **Communicate regularly with stakeholders** to keep them informed of the progress in the roadmap's implementation.

7.3 Development of a funding plan for implementation

A robust funding strategy will be necessary to secure adequate financial resources for the implementation of the roadmap. As highlighted in *Step 2*, incorporating funding considerations from the outset will facilitate timely access to financial resources. Therefore it is crucial to start developing a funding plan early in the process, even if the roadmap actions have not been defined yet.

What are the actions to develop a funding plan for roadmap implementation?

☐ **Develop high estimates for the roadmap actions and detailed cost estimates** for the project concepts. This will involve looking at the personnel, materials and equipment required to implement each action.

☐ **Identify available government funding sources** (e.g., the ministry's budget dedicated to climate change mitigation and adaptation actions).

☐ **Identify opportunities for private sector investment**, like corporate social responsibility initiatives, green bonds, etc.

☐ **Funding options and resources from international organizations and financial institutions**, like the Green Climate Fund, the Global Environment Facility, Climate Investment Funds, the Adaptation Fund, etc.

Note: Some of the actions listed can begin in *Step 2 (see sub-step 2.1: Stakeholder and initiative mapping)*.

☐ **Prioritize funding sources** based on their availability, accessibility and adequacy with regard to the roadmap objectives. This will entail assessing the different funding sources' application processes, eligibility criteria, funding cycles, etc.

☐ **Draft the roadmap funding plan**, outlining:

- The identified funding sources, estimated amounts, and timelines to apply for them, categorized as short-, medium- or long-term;

- Which actions will be funded or supported by which funding sources. For actions to be supported by external funding, it may be necessary to develop detailed project proposals tailored to the specific criteria and requirements of the funding sources;

- A contingency plan for unexpected events or adjustments to the roadmap's implementation, ensuring flexibility for eventualities.

Note: Countries that are members of the NDC Partnership can get support from this organization to develop their roadmap funding plans. The Partnership helps countries identify and access various sources of funding, including grants, concessional loans and private investments. This support is provided through several means, such as embedding advisors in ministries of finance/planning and environment, developing Project Information Notes to present to potential investors on national and international platforms, and organizing round-table dialogues to engage private investors. For more information, **see the NDC Partnership Finance Strategy**.

Additionally, countries can leverage the Climate Technology Centre and Network **(CTCN)** to obtain technical support in using a wide range of climate technologies (e.g., developing green building guidelines and adopting approaches to ensure resilient buildings).

7.4 Definition of implementation and monitoring arrangements

The steering committee and the thematic groups played crucial roles in the roadmap development phase. Leveraging these structures for the implementation and monitoring phase can provide continuity, maintain momentum and continue to drive the process forward. Therefore, it's recommended to collaborate with these groups when defining the roadmap implementation and monitoring arrangements.
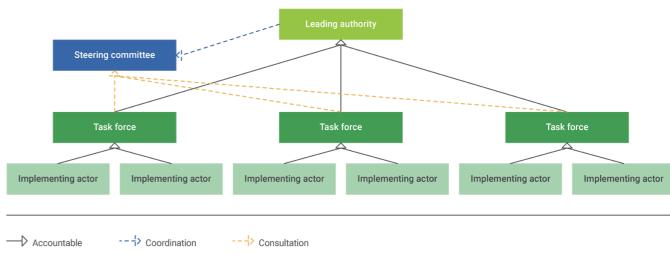
What are the actions to define the implementation and monitoring arrangements?

☐ **Define the roles and responsibilities that are necessary to implement and monitor the roadmap.** The following ones are suggested *(see Figure 28)*:

- **Leading authority:** Responsible for overall coordination, mobilization of stakeholders and resources, and monitoring and reporting, e.g., the Ministry of Housing.

- **Steering committee:** Responsible for overseeing roadmap implementation, providing guidance to the leading authority and implementing actors if required, and participating in the monitoring process. Members of the steering committee could include representatives of government entities like the Ministry of Local Governments or the Ministry of Energy; organizations offering technical and coordination support like United Nations entities; private sector organizations like manufacturing and construction corporations; and relevant non-governmental organizations and civil society groups related to the buildings and construction sector.

- **Task force groups:** Responsible for providing expert support and advice on specific thematic areas. For example, a Capacity Building Task Force can be set up to oversee the design and implementation of training programmes across government agencies, industry and civil society to build capacity for decarbonization. This task force could involve the Ministry of Education, the Ministry of Environment, the Ministry of Labour, academia, vocational training institutions, industry, etc. Another option is to define one task force per action area, leveraging the thematic groups.

- **Implementing actor:** Responsible for executing the roadmap actions and reporting on the status of implementation to the task force lead and/or the leading authority. Examples of implementing actors are local governments, chambers of commerce and professional associations.

☐ **Discuss with the steering committee and the thematic groups their involvement, roles and responsibilities in the implementation and monitoring of the roadmap.**

Figure 28. Proposed implementation organigram

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Note: It may be required to include new members. On the other hand, some members who participated in the roadmap development phase might not wish to continue.

☐ **Update the mandate and composition of the steering committee and the thematic groups** to reflect the transition from a development-focused role to an implementation oversight and advisory role.

☐ **Develop an implementation plan** indicating the main steps, milestones, budget, timeline and responsibilities for the roadmap's implementation and monitoring. The plan should also define the following items:

- **Coordination mechanisms** to facilitate communication and collaboration between the leading entity, the steering committee, the task force groups and the stakeholders responsible for implementing or supporting the roadmap activities. These can include regular follow-up meetings, ad hoc meetings and shared digital platforms to exchange information.

- **A monitoring and reporting framework** to track and communicate about progress. This framework should build on the theory of change drafted in *sub-step 6.4*, which defined the outcomes, actions, timeline and actors responsible for implementation.

  For the purpose of monitoring, it will be necessary to set indicators at the action level, if not already done. For each indicator, the definition of the following parameters is recommended:

  - **Data source and collection method:** This field should describe the specific origins of the data needed for monitoring and the procedures for gathering it.

  - **Frequency:** This field should indicate how often data will be collected.

  - **Responsible entity:** This field should indicate who will be responsible for data collection, verification and storage.

- **Baseline:** This field should define the state of the indicator before the implementation of the action or project.

- **Target:** This field should describe the specific, measurable goal set for the indicator, which is intended to be achieved within a defined time frame.

- **Achievement:** This field should report the concrete results or milestones in relation to the target that have been reached at any given point in time.

- **Progress:** This field should reflect the overall trend or trajectory towards meeting the target. It provides a broader view of how much has been accomplished relative to the goal.

You can refer to the Monitoring template (tab 7) for more details.

Note: There might be some established monitoring systems available that could serve as a foundation, such as the ones used to track progress for the National Development Plan or the Nationally Determined Contributions. If this is the case, it is recommended that you leverage them.

In terms of **reporting**, the frequency and format should be agreed upon by the steering committee. The following two levels may be considered:

1. The first level, **internal**, is among members of the steering committee and implementing actors. It should focus on progress and performance evaluation to enable informed decision-making and adjustments to the roadmap actions. This can happen, for instance, if the steering committee sees deviations from the set targets or identifies actions that are not having the expected impact, for example, if a set of actions oriented towards reducing the use of cement in new buildings results in only a 5 per cent reduction instead of 20 per cent as anticipated.

2. The second level, **external**, is directed at the general public. It should focus on information that may be of general interest. This could include the status of a draft regulation requiring energy efficiency standards for buildings, or the impact of certain actions implemented within the framework of the roadmap, e.g., the improvement of air quality after reviewing the planning regulations in a particular city. This reporting level should also provide information about the challenges of the roadmap's implementation.

Once the leading entity, the steering committee, the task force groups and the coordination and monitoring mechanisms have been defined, the implementation of the roadmap can start by focusing on the priority actions developed as project concepts in *Step 6*. A phased plan can be developed later on for the rest of the actions.

- **Make sure there is a designated department**, unit or team responsible **for overseeing** progress in the implementation of the roadmap.

- **Engage stakeholders** who participated in the roadmap's development in the review process, and collect their input to ensure the roadmap remains relevant and fit for purpose during the implementation period.

- **Consider encouraging industry** to develop their own tailored version of the roadmap that details their contribution and actions.

- **Organize high-level and technical events** regularly to engage public institutions, partners and donors, and mobilize new funds and projects that support the roadmap actions.

- If the roadmap focuses on the national level, **mobilize subregional authorities and city entities** to develop their own city plans or roadmaps aligned with the national roadmap.

☺ TIPS BOX:

How to ensure the roadmap is a living document

The roadmap should be regularly revisited and updated according to changes in the context, the effectiveness of the actions proposed, new opportunities or challenges that may arise, etc. The below considerations can help ensure it remains a living document:

- **Schedule regular annual review meetings** to assess the implementation status.

- **Align revisions** with national milestones, targets and delivery plans.

- **Integrate the roadmap review and updating process in the formal structures** of the leading institution and the steering committee.

GOOD PRACTICE:

Securing buy-in and endorsement in Sri Lanka

Despite a challenging political and economic context, Sri Lanka successfully developed and launched a [decarbonization roadmap for its buildings and construction sector](#) in 2022. The delivery team, working closely with stakeholders and the steering committee, finalized actions, timelines and responsibilities, ensuring their input was reflected in the final roadmap. Recognizing the importance of accessibility, the roadmap was translated into a local language, ensuring broader adoption and understanding. A public launch event with media coverage followed, including a side event showcasing innovative solutions innovative solutions for the development of sustainable materials from the private sector.

The Ministry of Housing formally endorsed the roadmap by publishing it in their official publications, a significant achievement facilitated by project team's collaborative efforts and the ministry's leadership. The critical role of a dedicated champion within the ministry, carried out throughout the process, was crucial in navigating internal processes, building consensus and maintaining momentum throughout the roadmap development phases.

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