

Inception Report

SD12 RESOURCE EFFICIENT HOUSING

Multi-agency support to UNCTs in mainstreaming resource efficiency in the housing, buildings, and construction sector



One Planet Sustainable Buildings and Construction Programme, SBC Programme

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for SDG 12



Multi-agency support to UNCTs in mainstreaming
resource efficiency in the housing, buildings, and construction sector

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1 Introduction

1.1 Introduction

The objective of the Inception Report is to narrate the first stages of the SDG12 Resource efficient housing programme. Preliminary research, stock taking, and country selection processes developed by the participatory UN organizations (PUNOs.) The following sections summarize the activities including stock taking of regional buildings and construction trends, especially for the selected countries, methodology of country selection and the profile of final countries.

Additionally, the report describes the discovery phase of the advocacy package, including the identification of generic information and tools that draft the guidance documents for advocacy and mainstreaming of sustainable housing and construction. The report includes the next steps that will occur in the following phases of the project, including task assignment, project roadmap, swot assessment, risk identification and mitigation strategies.

This Inception Report is a programme output for the attention of the Steering Committee of the OPN MPTF and will be made available to the selected pilot countries, OPN SBC Programme and the IRP-One Planet Network.

1.2 Regional buildings and construction trends

The buildings and construction sector accounted for 36% of final energy use and 39% of energy and process-related carbon dioxide (CO₂) emissions in 2018, 11% of which resulted from manufacturing and procurement of building materials and products such as steel, cement and glass (GlobalABC, 2019)—making the building sector the single most significant industry in terms of emissions. In addition, the building sector consumes 12% of freshwater and 30% of raw material and it generates approximately 20% of water effluents and as much as 40% of landfill waste globally (WEF, 2016). With the building stock set to double by 2050, emissions, energy and resource consumption of the sector are set to increase.

- **Lack of sustainable and adequate housing** is reflected by the unprecedented multiplication of substandard construction and housing solutions and the number of carbon intensive buildings and construction
- **Need of green policies, regulations** to develop frameworks for sustainable housing throughout the different countries, especially including affordability. 70% of the countries that submitted the NDCs mention buildings, most do not include concrete policy actions or targets for their buildings and construction sector (GlobalABC, 2019)
- **Involve governments and other entities:** 1) regulators of financial markets 2) investors in the construction sector, 3) urban and territorial planners have significant influence along the construction value chain..
- **Looking forward to implementing the SDGs and Paris Agreement.** The building and construction sector plays a key role in implementing the SDGs and Paris Agreement, and the decisions made today in the rapidly urbanizing developing countries will have long lasting impacts for the state of the planet and life on earth.
- **Material efficiency.** UNEP's International Resource Panel demonstrated that material efficiency strategies in the buildings and construction sector would significantly reduce GHG emissions (IRP, 2019)
- **Green procurement:** there is a huge opportunity for introducing more sustainable production, procurement and consumption approaches in the buildings and construction sector that mitigate environmental pressures and change building practices to provide adequate, attractive and affordable housing. In this context, there is an urgent need to take stock of the successful sustainability approaches and experiences in the sector to inspire and influence governments to overcome policy shortcomings and reveal the full potential of this sector for sustainable development.
- **Green case studies.** there is an urgent need to take stock of the successful sustainability approaches and experiences in the sector to inspire and influence governments to overcome policy shortcomings and reveal the full potential of this sector for sustainable development. *'50% of the building stock that will exist in 2050 is yet to be built out of which in average housing can make up from 45-70%'* (UN-Habitat, 2015)
- **Analysis of the construction value chain.** What type of construction is built and used and where, how much is being built, how is it being built? (IRP-OPN, 2020)
- **Focus on developing countries and affordable housing stock.** African and Asian countries and the changes of society's consumption patterns resulting from economic growth, it is critical to support countries to transform their buildings and construction sector as it has the potential to drive them towards sustainable development by introducing and promoting green and resource efficient practices in the buildings and construction industry.

1.3 SWOT of the Resource-efficient housing program

Strength	Weakness
<ul style="list-style-type: none"> - The Joint Programme localises the SDGs (11,12,13 mainly) with detail objectives and a participatory process for the UNCTs. - The support of OPN provides a strong framework towards a common objective: Resource-efficient housing - The Urban Agenda commits to sustainable urban development with a circular approach to SCP. Adopting sustainable, people-centred policies, strategies and interactions. Art 51,52,53,55-60, 70,71 of the NUA. (NUA, 2016) - The programme is aligned with the Sustainable cities report. 'Cities make 70% of the global GHG emissions from burning fossil fuels and will need to become carbon neutral to achieve the targets of the Paris Agreement.' - The programme is aligned with the World Cities Report strategy: '<i>Cities will consume 90 billion tons per year of raw materials, such as sand, gravel, iron ore, coal and wood, the programme will impact on the material consumption and production.</i>' (World Cities Report, 2020) - The programme has the opportunity to give cities the autonomy and resources to engage in effective, evidence-based and inclusive participatory policymaking involving the citizenry. (GSDR, 2019) - As per GSDR19. national governments and local city authorities to liaise with the private sector to promote people-centred and pro-poor policies for a liveable city that provides decent, sustainable jobs, and sustainable universal access to vital services: water, transport, energy and sanitation. (GSDR, 2019) - Countries responded and showed interest in participating in the Joint Program with the objective to develop a green roadmap, strengthen the regulations of their countries and use the value-assessment tools in order to assess their projects through value-added assessment tools. 	<ul style="list-style-type: none"> - The broad and extensive objectives of the criteria for acceptance made the submission difficult for the countries. - COVID19 is having a strong impact in the housing sector of almost each country.
Opportunity	Threat
<ul style="list-style-type: none"> - There is an opportunity to strengthen the UNCTs through the resource-efficiency as it is key to the objectives of the countries that applied - To promote a participatory approach to sustainable and affordable housing lead by the UNCTs with the support of the PUNOs - Promote the critical role of buildings and construction, housing, as a key sector for countries to achieve their SDGs and NDCs, demand for SBC from national decision makers, value chain stakeholders from private companies to consumers - To generate a strong set of stakeholders in order to upscale the programme and coherent and innovative sustainable development towards Net-Zero carbon affordable housing - To impact the next UNDAF cycle in of the participating countries - To strengthen global tools and certifications for Low-carbon emissions buildings with a focus on sustainable materials - Mainstream through countries, stakeholders and projects the importance of building an affordable sustainable housing stock 	<ul style="list-style-type: none"> - Lack of clear guidance might affect the final outputs - Complex coordination among agencies and countries could slow down the process. Clear guidance and objectives are needed. - Covid19 might risk new lockdowns or other measures that slow down the processes and information request. - Alliance with external stakeholders might compromise the deadlines.

1.4 Regulatory and legislative constraints to sustainable buildings and construction

There is increasing recognition that governments need to put in place the right 'enabling environment' to make sure that buildings are designed and constructed with sustainability considerations so that they continue to perform and provide the required services over their entire lifecycle with low environmental impact. This would include institutional arrangements, policy and regulatory frameworks, sufficient human and financial resources, and transparent and non-corrupt decision-making processes that go along the whole building life-cycle. The major challenges of building regulatory frameworks include:

National institutional, policy and legal frameworks
Weak institutional structures: (regarding land-use structure, land use and building regulations and licensing, accreditation and quality assurance)
Insufficient national policies and legislation: lack of principles of regulatory implementation or designate public and private responsibilities. Lack of policies and legislation which promote or support the use of low carbon materials for use in construction
Building code development and maintenance
Building regulations or building code: poorly maintained and lack of understanding over building life-cycle or local conditions and sustainable construction practices.
Unaffordable compliance costs for the poor: Lack of finance ends in standards borrowed from abroad and creating dependency on imported building materials while stifling local innovation. Little knowledge on how to build on sustainable low carbon materials.
Local implementation and enforcement
Weaknesses in building code administration and institutional capacity lack: of funding and support for enforcement of building regulation at the local government level. The issue is generally linked to income levels and authority over taxation. Inadequate financial resources and staff with appropriate skills in particular for the use of traditional or low carbon materials.
Corruption in building code enforcement: has resulted in extensive building failures and poor quality of works. Regulatory capture in building code systems can reduce safety standards, and increase unsustainable or unaffordable building practices.
Building design and permitting processes
Consulting design firms are not always experienced: in appropriate design practices. Only design firms that include the services of professional architects (which are often limited in number in many countries).
Regimes of building controls: permitting processes and inspections services in developing countries are usually expensive and complex. Compliance with codes can increase building costs, and these costs can act as a deterrent to meeting code requirements.
Lack of accreditation of professionals leads: to low capacity of skilled human resources in the sector and consequently, the buildings are not appropriately designed or include the use of low carbon materials.
Construction materials and practices
Majority of the building construction materials are imported: due to the weak regulatory framework in the construction sector and poor supply chain management systems. The specifications of in-country may not fulfil the required specifications.
Insufficient recognition of prevalent (and/ or traditional) building practices: incremental or informal construction leads to widening the gap between the formal and informal building sectors. Traditional building practices that may be more economical and environmentally friendly are replaced by potentially unsustainable practices.
Sustainability in materials: Lack of access and guidance on how to use to low carbon materials. Missing knowledge, guidance, standards and local skills to use new or traditional low carbon materials

2 Analysis and value added of selected sustainability and value assessment tools

2.1 Value assessment methodology for national buildings and construction programmes with a focus on housing.

The aim of this activity is to demonstrate how the shift towards sustainable buildings and constructions can deliver added value in all dimensions of sustainability. Develop an analysis of the value added of shifting towards sustainable constructions in the different dimensions, specifically through the use of innovative materials and local techniques, identifying the gaps in the whole value chain.

The activity will liaise on recommendations made from HLPF SDG12. To convene partnerships for SCP, to strengthen multistakeholder practices involving private sector and public sector, understand a change consumer behavior and to promote greater commitment in the industry, to ensure integrated policy and others. The analysis on SCP will mainly be related to the impact of resource extraction, manufacture, procurement, use and disposal on the socio-economic and environmental dimensions of sustainability. (HLPF, 2018)

'Housing as a lever for sustainable development' Philippe Garnier CRAterre

Value assessment methodology:

- Project identification:** identification of projects to be engaged for further assessment. Preferably National Housing Programs
- Value chain approach:** understanding of the construction value chain for the process. Through the use of the Sherpa tool and CAT-I
- Resource analysis:** based on the. value chain approach. Benefit from existing tools like DST
- Identify gaps for improvement:** identification of gaps for improvement
- Basic cost-benefit analysis:** Analysis of the overall cost of the final product and whether sustainability improvements impact on the cost-benefit analysis and the scope of the impact.
- Report of the assessment:** Feedback on the process and highlights of improvements, impact on SDGs

First next steps are to identify together with the UNCT the national building and construction programme to be assessed and stock the information for future assessment and understanding.

2.2 Strengthening of the OPN, SBC Sherpa app with value assessment methodology

Based on the Inception Report. Previous analysis, current stock taking and Activity 2.1 the current activity builds on the Sherpa Assessment tool as an improved version of the tool to assess SBC related programme and projects.

Main pillars of sustainability assessment tool:

- holistic view on housing impact
- local capacity building
- process-driven focus
- ability to self-evaluate
- resource efficiency driven
- free and open-source development

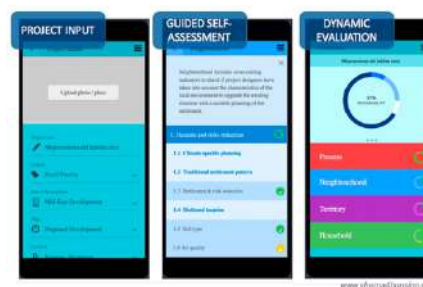


Figure 01: Interface of Sherpa App

3 Analysis of existing capacity building tools

3.1 Advocacy package methodology

The Inception phase went through a preliminary selection of the stock of existing capacity building, guidance and assessment tools developed by the PUNOs, their partners and other entities, that can assist UNCTs in engaging with national stakeholders to increase the capacity in understanding the potential of the buildings and construction sector in achieving the SDGs and the Paris Agenda.

As part of the WP3 the programme intends to develop and Advocacy package: a practical guidance for UNCTs and country governments that proposes a generic SBC Mainstreaming and Advocacy approach emphasizing on resource efficiency with a focus on material efficiency strategies and circularity approaches. It will consist of two parts: **(i) advocacy toolkit with standard key messages** and **(ii) practical mainstreaming guidance**.

Part I: The Advocacy Toolkit

The advocacy toolkit should help to influence key actors in the buildings and construction value chain (government authorities/decision makers, financiers, property developers, architects, material manufacturers and suppliers) and mobilize them for transforming the buildings and construction sector in resource efficient, low carbon and climate resilient sector. It should help in creating local alliances for buildings and construction (i.e. advocacy alliances for sustainable buildings and construction) and influencing the decision makers to raise ambitions towards resource efficient, low carbon and climate resilient buildings and construction.

The Advocacy Toolkit will be structured in three parts:

- (i) **Key messages:** key messages and approach for tailoring them to national context (based on GlobalABC status report, GlobalABC roadmaps, IRP reports, SBC Circular Built Environment reports, UN Habitat...) – covering 8 action areas of GlobalABC roadmap and specific attention to SDG12, resource efficiency, materials, circularity and value chains
- (ii) **National/Local Alliances for Buildings and Construction:** Stakeholder value chain mapping, assessing current networks and either strengthen them for effective advocacy or form new advocacy alliances
- (iii) **Engaging policy makers:** Planning engagement with government policy makers and legislators, and to conducting effective lobbying meetings

Each part will be illustrated with case studies.

Part II: Practical Mainstreaming Guidance

In line with the SBC Programme approach, this practical guidance will be structured around 3 phases:

- (i) **Making the case:** understanding resources and materials used (including embodied carbon) in the buildings and construction sector, related impacts on the environment and potential benefits/opportunities for resource efficiency in the sector for achieving the SDGs (notably SDG12 and SDG13)
- (ii) **Prioritizing:** integrating SBC resource efficiency into country strategies, plans, policies and regulation, and processes (to support NDCs and national sustainable development plans), and
- (iii) **Implementing:** building implementation capacity and partnerships to address resource and material efficiency and embodied carbon.

Each phase will refer to selected tools (existing tools) and be illustrated with selected case studies. The guidance will also provide links to additional resources.

3.2 Preliminary stock of existing methodologies and tools

The following is a preliminary list of tools have been identified to be potentially recommended in the advocacy and mainstreaming package..

LCA Tools and Methodology	<ul style="list-style-type: none"> • Athena (link to LCA software tools) • Athena (link to methodology & standards) • Tally (link to software) • Tally (link to methodology & standards) • One-Click (link to LCA software tools) • One-Click (link to Green Building Certification, supplier for methodology): • WoodWorks Carbon Calculator (link to software) • WoodWorks Carbon Calculator (link to methodology) • EC3 (link to software) • EC3 (link to methodology) • SuRe: (Link to software) • Carbon positive (free) • Beacon (free)
Buildings and construction roadmaps	<ul style="list-style-type: none"> • GlobalABC Guide for Incorporating Buildings Actions in NDCs • GlobalABC roadmaps • WorldGBC bringing embodied carbon upfront • NISMOD-Int - to develop and assess alternative infrastructure transition strategies for meeting sustainable development goals
Country assessments	<ul style="list-style-type: none"> • SBC country assessment methodology – sector assessment (UNEP) • CAT-I (UNOPS) – capacity assessment
Data and MRV	<ul style="list-style-type: none"> • Common Carbon Metric (CCM 2.0) – UNEP • Building Passport guidelines: A tool for capturing and managing whole life data and information in construction and real estate – UNEP/GlobalABC
Procurement	<ul style="list-style-type: none"> • Guidance Document on Procuring Sustainable Buildings and Construction
Policies	<ul style="list-style-type: none"> • Adopting Decarbonization Policies for the Buildings and Construction Sector • MaS-SHIP (integrating sustainability in social housing)
Project design, evaluation, certification	<ul style="list-style-type: none"> • SustainABLE (UNOPS) • Sherpa • Green Housing Assessment System (SISEVIVE-EcoCasa), Mexico • GREENSL (Green Rating System), Sri Lanka • Casa Colombia (green certification), Colombia
Materials	<ul style="list-style-type: none"> • Meeting Global Housing Needs with Low Carbon Materials (GGGI) • Training Manual on Construction and Demolition Waste Management in India for Cities and Towns (GIZ) • Manual del desempeño ambiental de los materiales y tecnologías utilizadas en la construcción de las viviendas sociales (Argentina) • Building Material Selection and Use An Environmental Guide (WWF/Nepal) • Available technologies for local building materials (UNIDO) • Edge Materials – Embodied energy methodology (IFC) • https://carbon-positive.org/tools/
Implementation	<ul style="list-style-type: none"> • Circular economy business models in the Built Environment (Royal BAM) • GUIDE DU BÂTIMENT DURABLE EN RÉGIONS TROPICALES: TOME 1, STRATÉGIES DE CONCEPTION DES NOUVEAUX BÂTIMENTS (Energies2050) • GUIDE DU BÂTIMENT DURABLE EN RÉGIONS TROPICALES: TOME 2, STRATÉGIES DE CONCEPTION DES NOUVEAUX BÂTIMENTS (Energies 2050)
Finance	<ul style="list-style-type: none"> • https://www.unepfi.org/wordpress/wp-content/uploads/2020/10/UNEPFI_DemystfyingFinanceCircularity-2020.pdf (pp. 32-34)

3.3 Focus on SDG12 for the selected assessment tools and methodologies

The previous tools both for section 2 and 3 will be selected in relation to their emphasis on resource efficiency (SDG12) in the buildings life cycle - planning, design, procurement, construction, operation, maintenance,

and decommissioning - with a specific focus on the materials, the Joint Programme is aiming for a strategic advance on the implementation of the 2030 Agenda, as well as the national commitments made under the Paris Agreement focusing on sustainable, resource efficient housing.

Main SDG targets to be addressed by the Joint Programme

- 12.2. By 2030, achieve the sustainable management and efficient use of natural resources
- 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- 11.1 and 11.c on adequate and sustainable housing and sustainable construction materials.
- 17.7 Promote the development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

4 Strengthening the integration of value-chain approaches, materials and resource efficiency in existing guidance and tools

4.1 Introduction

The construction value-chain is a holistic approach to building and construction sector, covering all phases of products life from supply of the raw materials, its use and consumption the end of their lives through disposal, it also encompasses other activities linked to value creation such as business models, investments and regulation.

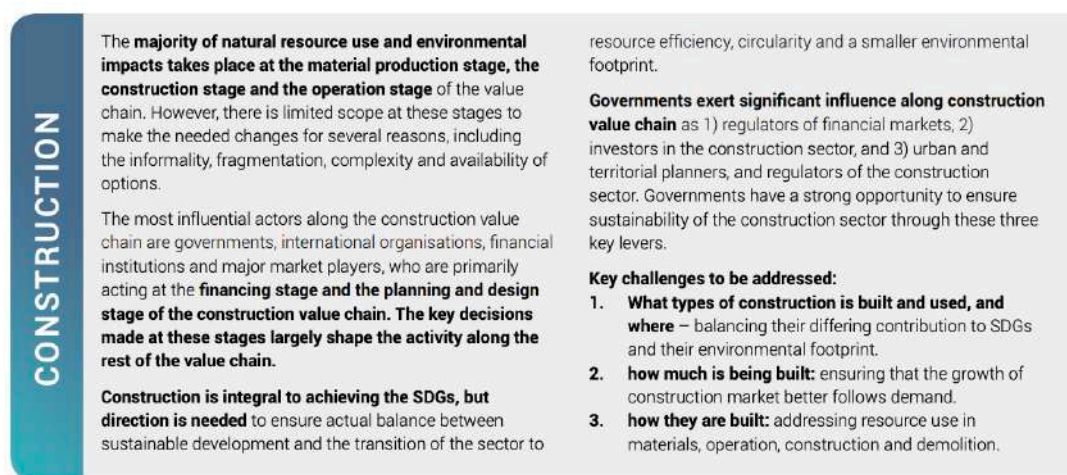


Figure 02: Conclusions from applying the value-chain to the construction sector. One Planet Network

The programme will develop a complete map of stakeholders that influence the activities pre-during and post construction. The value-chain thus incorporates not only the physical processes, such as farms and factories, but also the business models and the way products are designed, promoted and offered to consumers.

Stages of the value-chain include natural resource extraction, production, processing/manufacturing, packaging, distribution, marketing, sale (retail & other), consumption, waste management, disposal and after use. Stages and stakeholders may variate among products, sectors and geographical locations. For the current programme we will take into account the exact application to the selected countries and analyze their material value chain.

There are 3 main steps for promoting the value chain approach as per the IRP One Planet Report:

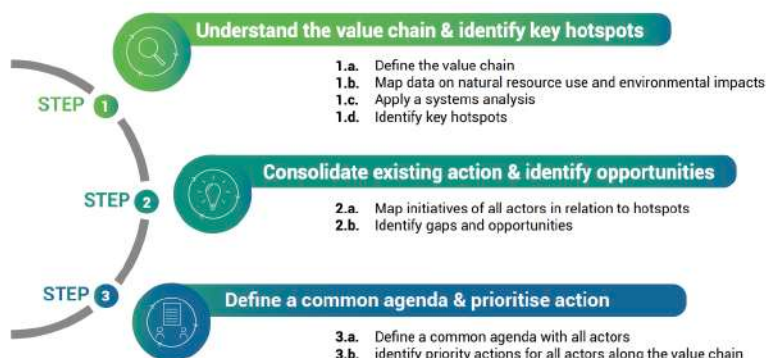


Figure 03: Overview of key steps of the value-chain approach. One Planet Network

4.2 Materials supply chain

Materials are involved in the preliminary stages of any construction process. When rethinking the whole value-chain approach, materials are not to be taken for granted due to customary processes or availability but be the initial stage in redefinition of the value-chain, they correspond to the highest GHG emissions '11% of carbon emissions belong to manufacturing and procurement of materials such as steel, cement and glass'. However, there is limited scope at these stages to make changes that reduce natural resource use and environmental impacts due to different reasons: informality, fragmentation, complexity, lack of knowledge or experience and financial constraints.

The most influential actors are governments, international organisations, financial institutions and major market players, who are primarily acting at the financing stage and the planning and design stage of the construction value chain. The key decisions made at these stages largely determine what type of construction is built and where, how much is being built, and how they are built, and thereby shape the activity along the rest of the value chain (IRP One Planet Network, 2020).

For the current program we will start by considering the main materials involved in the value-chain

Concrete	is a key product used for buildings and consists mostly of aggregates, including gravel (40.8%) and sand (31.1%), cement (10-15%), water, and burnt lime as binder. Concrete in buildings is the largest contributor to the use of sand and gravel by the sector (IRP, 2016)
Cement	is key ingredient of concrete; it is made of limestone, clay, shells, chalk, shale, slate, silica sand, and sometimes even blast furnace slag or iron ore. These ingredients are crushed then heated at high temperatures to result in a material called 'clinker'. Gypsum is added and the whole mixture is finely ground to produce cement powder.
Asphalt	(or bitumen): main material used for the construction of transport infrastructure (e.g., roads) and is mostly composed of petroleum and aggregates;
Metals	steel, aluminium, copper, etc;
timber	and wood-based materials;
Chemicals	Glass, Plastics and Stones;
Earth	nearly 30% of the world population live in earth construction and it is regaining interest in industrialised countries (Vyncke et al, 2018)
Alternative	Alternative construction materials can also be sourced locally – depending on their availability – as for example sugar cane bagasse, bamboo, Typha, etc

4.3 Resource efficiency

Environmental impact of natural resource use takes place at the material production stage, de construction stage and operation stage. However, the possibility to impact these stages is often limited due to different actions. The main players of the value-chain are governments, international organizations, financial institutions and major market players who primarily act the financial and planning and design stage.

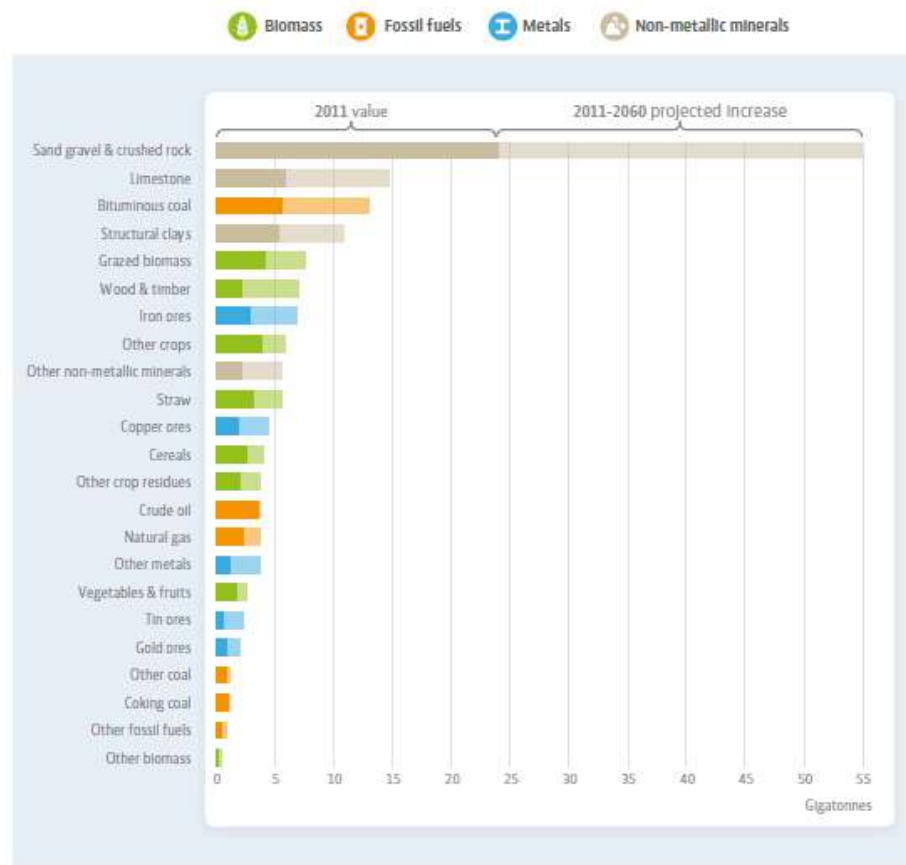


Figure 04: Global use of construction materials and other natural resources (OECD, 2018)

4.4 Procurement actors: Stakeholders map

Planning practices and regulation of construction sector not always consistent or effective. Urban and territorial planning practices and regulation of the construction sector are not equally applied across all countries, with many developing countries still without building codes. For example, of the new buildings expected to be constructed to 2060, more than two-thirds of these will be built in countries that do not currently have mandatory building energy codes in place (WGBC, 2017).

Due to the significance of the sector for both GDP and employment, regulation of construction can be a politically important issue for governments and economically important for private sector actors.

- Regulations of the construction sector have the potential to be used by governments to for political aims.
- Governments may deregulate the construction sector or weaken planning codes to stimulate the sector in order to drive economic growth.
- Key private sector players working in the construction sector may undertake lobbying activities or make political donations that seek to influence the way governments regulate the sector in ways that are favourable to private interests (TIA, 2019), which could influence the natural resource use and environmental impacts of the sector.
- The construction industry can also be subject to corrupt dealings between private companies and politicians, resulting in regulations, safeguards or assessments overlooked to make way for developments (World Bank, 2007).

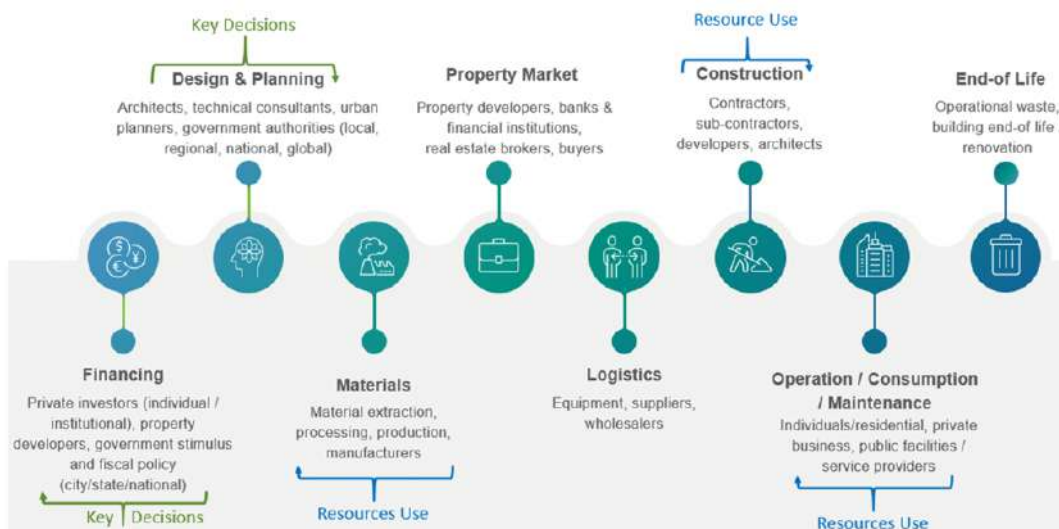


Figure 05: Key stages of the construction value-chain where decisions are taken

Urban planning and regulation of the construction sector by governments has strong potential to influence the natural resource use and environmental impacts of the sector but urban planning practices and regulation of the construction sector are not always consistent or effective.

The following **stakeholders map** is to be taken into account when developing country analysis or any housing project. Emphasizing the importance to develop a complete stakeholder's map tailored to the country or the local authorities when developing a county assessment, building or construction roadmap or analysing a project execution.

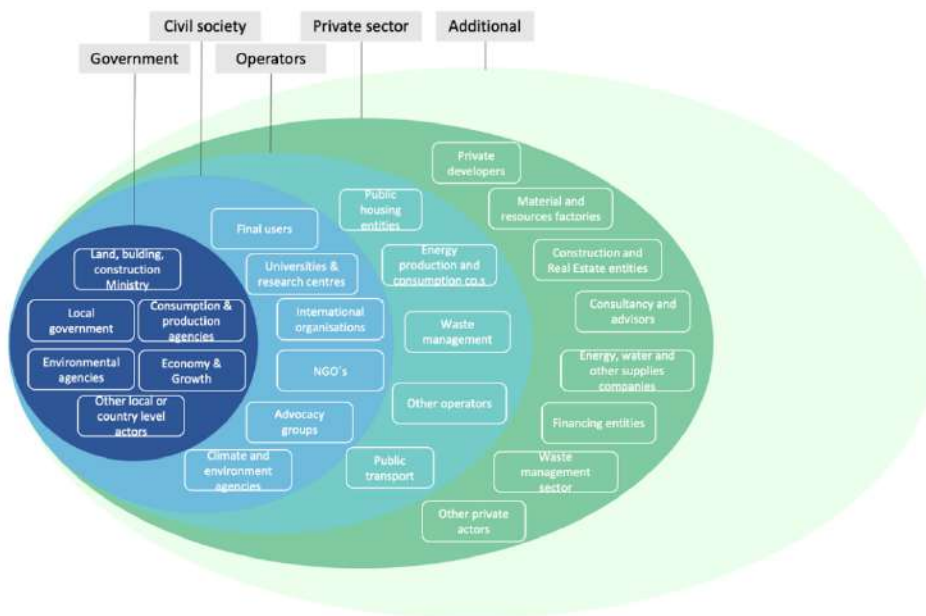


Figure 06: Stakeholders maps for the SDG12 Resource efficient housing programme

5 Recommended countries for Joint Programme implementation

5.1 Overview of country selection criteria

In order to create and analyse the country assessment EOI submitted, the PUNO's developed an assessment criteria based on the following objectives. (i) strengthened national commitments and objectives for sustainable buildings and construction in two pilot countries and (ii) strengthened technical resources for United Nations Country Teams (UNCT) to support governments in mainstreaming sustainability, resource efficiency, and climate change in the buildings and construction sector to achieve the 2030 Agenda and the Paris Agreement.

The Selection was developed in 3 phases:

1. **Phase 1:** Informative sessions for the different countries to understand the project, the Assessment Criteria and additional questions related to the project, deadlines and procedures.
2. **Phase 2:** EOI, Assessment Criteria presented by the countries. Evaluation was done under the Assessment Criteria presented in December 2020. After the analysis and evaluation of the documentation presented.
3. **Phase 3:** The shortlisted candidates were requested several questions to be submitted and an online meeting to discuss the EOI presented and the highlighted questions. After the interviews there is a second assessment evaluates the countries under 3 criteria that englobes the initial Submission Criteria and the online interview.

Proposed criteria categories: they differentiate the criteria in order to define:

- a) is related to the government counterpart for the Joint Programme to operate in.
- b) is related to the PUNO and its participation or engagement with the UNCT.
- c) is related to the actual existence of data and information.

Proposed indicators: a set of verifiable documents or products that substantiate that a criterion is being met fully or partially.

Criteria weights: they define if the criteria should be fully met (**necessary**) in order for country to be considered eligible, or if the criteria can only be partially met (**complementary**).

	Criteria	Weight
a) Government Related	Indication of government's interest, appetite, political will, in engaging with Joint Programme's theme.	Necessary
	Existence of a government counterpart with the PUNOs having an established partnerships with UNCT or resident agency.	Complementary
	Existence of a track record of reporting on SDGs or NDCs in relation to the Joint	Complementary
	Existence of advocacy and awareness raising efforts or programmes linked to Joint	Complementary
b) Country Office Related Criteria	Presence and recurrence of country office in UNCT meetings	Necessary
	Status of Cooperation Framework Cycle	Necessary
	Existence of a PUNO office in given country and/or partnership with existing	Necessary
	Indication of country office's interest, appetite, political will, in engaging with Joint	Complementary
c) Data Related Criteria	Existence of country office related initiatives, programmes, projects, and its relevant	Complementary
	Existence of data and information relevant and necessary for Joint Programme	Necessary
	Analysis of housing and SBC related trends in selected country, including SWOT	Complementary
Average	Risk analysis for Joint Programme's success	Complementary
	a) is related to the government counterpart for the Joint Programme to operate in.	
	b) is related to the PUNO and its participation or engagement with the UNCT.	
Country Interview and answers on submission	c) is related to the actual existence of data and information.	
	Average of the above (a,b,c)	Partial Assessment
GLOBAL	Cooperation framework with stakeholders, governments	Necessary
	Team structure and response capacity	Necessary
	Specific projects referred for engagement	Necessary
Country interview and analysis criteria		Final Assessment

Figure 06: The Data base reflects the following assessment

5.2 List of countries that submitted the proposal for expression of interest

After the Phase 1 Information sessions conducted by the PUNO's 5 countries completed and submitted the complete Assessment Criteria requested for the Phase 2 of the Selection process. The submitting agencies were UN-Habitat, UNOPS and in one case a Joint Submission of both. 2 countries were selected for the programme implementation.

Selected	-
UN-Habitat Sri Lanka	UNOPS Nepal
UN-Habitat Burkina Faso	UNOPS Cambodia
	UN-Habitat Andean Countries Hub: Colombia

5.3 Short and concise description of 2 selected countries

SRI LANKA

Contact: UN-Habitat Sri Lanka
Dr. Chanaka Talpahewa- Country Programme Manager
e-mail: chanaka@unhabitat.lk

EXECUTIVE SUMMARY

Sri Lanka, supported by the Ministry of Rural Housing and Construction & Building Materials Industries Promotion presented a well-rounded proposal. A continuation of different projects with the different PUNOs in their path towards resource efficient housing. There is also an opportunity to provide inputs on SDG12 under the Planet Pillar for the future 2023 framework and engage with different stakeholders and the interest to involve stakeholders from the private sector, government and research towards a sustainable production and consumption of local materials.

Partnership Opportunities

- Green Building City Council of Sri Lanka - Green Sri Lanka Rating and Labelling System
- Urban Development Authority - To mainstream green building rating
- Construction Industry Development Authority to build capacities of construction

Other Stakeholders

- WWF (US, one person in Sri Lanka)
- University of Peradeniya and Moratuwa

GOVERNMENT RELATIONSHIPS

- Relationship with the Ministry of Housing and Construction and State Ministry of Estate Housing & Community Infrastructure
- National Housing Development Authority (NHDA)
- National Engineering Research and Development (NERD)
- National Building Research Organization (NBRO)

POLICIES

- Possibility to collaborate with UNSCDF(2022) Pillar 3: Planet including SDG 11 and SDG 12 and support advocacy for inclusion of SBC under the Planet Pillar of the next UNSCDF.
- National Policy on Sustainable Consumption and Production (Draft)
- National Housing Policy
- Clean Air 2025
- Green Public Procurement Policy
- Green reporting System (Project by MMDE Ministry of Mahaweli Development and Environment)
- Green Label "GreenSL"

RESEARCH AND INNOVATION

- Interest in local material production in order to reduce imports.
- Sustainable housing Practices.
- Training Module on Green Technology – attaining environmental, economic resilience.

STRENGTH

1. Draft National policy on Sustainable consumption and Production, SDG 12.7 as a priority
2. Interest of Ministry of housing and National organizations to reinforce resource efficient housing
3. "One-stop shop" has improved the building approval process
4. Home-grown green building system Green Building Council Sri Lanka

WEAKNESS

1. Mix of regulations and international building codes with local regulations. No national building codes.
2. Building regulations not always accessible and approval process still slow
3. Lack of systems and capacities for inspection of buildings, lack of resiliency.
4. Lack of local materials, high level of imports

OPPORTUNITY

1. New building Code
2. Increase for middle income housing
3. Collaborate with the GreenSL, Green rating System
4. Long-term vision for urban development at provincial level planning
5. Alternative materials research to face lack of natural resources

THREAD

1. Strong effect of Climate Change on the island
2. Programmatic level, lack of long-term funding with majority of projects ending in 2021

ONGOING PROJECTS

- India Housing in Central and Uva Provinces Project
- State of Sri Lankan Cities Report - AUS Aid Funded

BURKINA FASO

Contact: UN-Habitat Burkina Faso
Yombi Ouedraogo (yombi.ouedraogo@undp.org)
Julia de Faria (julia.defaria@un.org)

EXECUTIVE SUMMARY

Strong interest and champion for sustainable buildings and construction, Burkina Faso has an interest to promote climate-friendly and resilient housing projects and building a roadmap for construction and buildings. SBC Trust Fund project already in 2017 and home-country for testing of Sherpa tool. With a new UNDAF 2021-2025 enabling the possibility to collaborate in one of the pillars.

With a new Ministry of Housing the country has the interest to promoting sustainable housing as a solution to precarious habitats with long-lasting local materials as one of its focus.

GOVERNMENT RELATIONSHIPS

- Ministère de l'Urbanisme, de l'Habitat et de la Ville), is linking sustainable construction to affordable housing.
- Ministry of the Environment and Sustainable Development

POLICIES AND CYCLES

- UNSDCF next cycle can be influenced, Pillar 2 of UNDAF: "Mise à échelle des mesures de protection sociale, accélération de l'accès équitable et universel aux services sociaux de base"
- National Plan for Adaptation to Climate Change (PNA)
- National Green City Strategy
- National Housing and Urban development strategy
- National Housing Construction Programme
- Accelerated Growth and Sustainable Development Strategy (scadd)
- "Roadmap for Africa" to be developed

RESEARCH AND INNOVATION

- Sustainable habitat in Burkina Faso: social trajectories, logics and motivations for the use of compressed earth blocks for housing construction in Ouagadougou
- Project for the creation of an ecovillage in Bobo-Dioulasso, for the management of environmental issues linked to the disastrous operations of a sand extraction site.
- Durable Solutions for IDPs, with a strong construction and housing component.

Partnership Opportunities

- Donor group coordination "Troica"

Other Stakeholders

- European Commission
- Swiss Cooperation
- The Housing Bank
- World Bank
- GGGI
- NGO Yaam Solidarité

STRENGTH	WEAKNESS
<ol style="list-style-type: none"> 1. New National Plan for Adaptation to Climate Change (PNA) and National Green city strategy 2. Flagship project, the creation of eco-village in Bobo-Dioulasso 	<ol style="list-style-type: none"> 1. Building codes are from 2004 and need to be updated 2. 70.1% of the population lives in habitats built from non-definitive materials such as mud and straw
OPPORTUNITY	THREAD
<ol style="list-style-type: none"> 1. National Climate Change Adaptation Plan (NAP) first objective Improve access to adequate, self-build and social housing. 2. NDC2018 to promote climate-friendly materials 3. Collaborate with 500 housing units with resilient materials structure 4. Plan to launch 40,000 units of housing in collaboration between State and local banks 5. Alliance with GGI to support government effort to implement green economy transaction 	<ol style="list-style-type: none"> 1. Climate projections based on LAME studies suggest negative impact on adobe building materials. 2. Migratory crisis prioritizes any housing intervention being linked to creation of affordable housing for crisis.

ONGOING PROJECTS

- 'Durable Solutions for IDPs in secondary cities, strong construction and housing component for 500 houses' (Funded by the EU and implemented by UN-Habitat)
- "Creation of an ecovillage in Bobo-Dioulasso", management of environmental issues linked to the disastrous operations of a sand extraction site.
- Center of Excellence on Housing for the WAEMU sub-region, in partnership with the University Ki-Zerbo of Ouagadougou and the University Cheick Anti Diop in Dakar.

5.4 SDG 12 and the links with the selected countries

Achieving economic growth and sustainable development requires that we urgently reduce our ecological footprint by changing the way we produce and consume goods and resources. The building sector is the single, most significant industry in terms of emissions.

Buildings and construction sector accounts for 36% of final energy use and 39% of energy and process-related carbon dioxide (CO₂) emissions in 2018, 11% of which resulted from manufacturing and procurement of building materials and products such as steel, cement and glass.
(GlobalABC, 2019)

The current project integrates sustainable building and construction goals, focusing on resource efficient housing and sustainable materials through a holistic analysis of the entire value-chain. The following targets of SDG12 and other SDGs are directly affected by the programme.

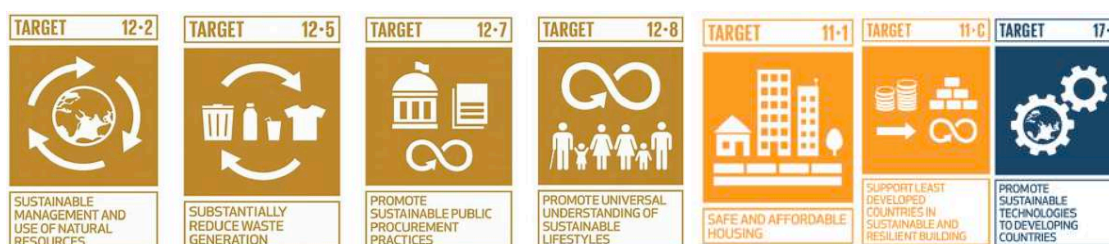


Figure 07: SDGs related to the current programme

The selected countries have an ongoing agenda to promote resource efficient housing, highlights as follows and full description in Appendix 4.

SRI LANKA link to SDG12
National Policy on Sustainable Consumption and Production highlights target 12.7 as a priority: a green public procurement policy is being drafted under its Mission 9 on Greening the Industries (a) Create guidelines to facilitate industries to select and procure environmentally friendly raw materials (b) Promote green purchasing
The National Cleaner Production Programme in place for 15 years in Sri Lanka includes a Resource Pack on SCP to encourage positive behavioural change in citizens, 28(Target 12.8). A Green Reporting System is being implemented by the MMDE. 50 indicators (6 economic indicators, 20 social indicators and 24 environmental indicators). The first economic indicator deals with economic value (Target 12.6). From VNR
The National Cleaner Production Programme in place for 15 years in Sri Lanka includes a Resource Pack on SCP to encourage positive behavioural change in citizens, 28(Target 12.8). A Green Reporting System is being implemented by the MMDE. 50 indicators (6 economic indicators, 20 social indicators and 24 environmental indicators). The first economic indicator deals with economic value (Target 12.6). From VNR
BURKINA FASO link to SDG12
Promotion of climate-friendly materials for building construction in rural and semi-urban areas and metal-free and wood housing (NDCs 2018).
The National Sustainable Development policy of Burkina Faso highlights the housing sector to continue being characterized by predominance of precarious habitats. Indeed About 70.1% of the population lives in habitats built from non-definitive materials such as mud and straw.
National climate change adaptation plan (NAP) first objective: Improve access to adequate housing for disadvantaged populations by means of rental properties, self-build funding and new social housing' being research on sustainable materials one of their key indicators, long-lasting local materials for the building and infrastructure system.
An Alliance with GGGI supports the government in its efforts to implement this green economy transition under a five years Country Planning Framework CPF (2019-2023) with the following outcomes. (1) Climate-resilient, energy efficient, and low-carbon driven cities. (2) Inclusive and resilient ecovillages. (3) Less GHG emissions, more Green Jobs thanks to green investment in energy, water & sanitation, & landscape sector.

6 Next steps

6.1 Roadmap next steps

Outcome 1.Strengthened technical resources of UNCTs to support governments in mainstreaming sustainability, resource efficiency, and climate change in the buildings and constructions sector to achieve the 2030 Agenda and the Paris Agreement.												
Output	Annual target/s		List of activities	Time frame 2020-2022								PUNO /s involved
	2021	2022		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
Output 1. Inception Report	1 Report	0	Activity 1.1 Stock taking and country selection									UN-H leads Technical support: UNEP and UNOPS
			Activity 1.2 Analysis and value added of selected sustainability and value assessment tools									
			Activity 1.3 Analysis of existing capacity building, guidance and assessment tools for SBC									
			Activity 1.4 Strengthening the integration of value chain approaches, materials and resource efficiency in existing guidance and tools									
			Activity 1.5 Drafting the inception report									
Output 2 Investment value assessments for national buildings and construction programmes, focusing on national housing-related programmes.	0	1 Project proposals in each selected country where value assessment methodology will be utilised to guide the project design stage.	Activity 2.1 Value assessment methodology for national buildings and construction programmes with a focus on housing.									UN-H leads Technical support: UNEP and UNOPS
			Activity 2.2 Strengthening of the OPN, SBC Sherpa app with value assessment methodology									
Output 3. SBC Mainstreaming and Advocacy Package for UNCTs covering policy, investment value, and capacity building in SBC related programmes.	0	2 selected countries following inception report selection. +4 additional countries within 1 year of implementation	Activity 3.1 Compilation and packaging									UNEP leads Technical support: UN-H and UNOPS
			Activity 3.2 Development of the Mainstreaming and Advocacy Package for UNCTs									
			Activity 3.3 Integrating recommendations stemming from SBC programme and IRP									
			Activity 3.4 Global dissemination and communication activities: south-south and triangular cooperation									
			Activity 3.5 Country focused dissemination and communication									
			Activity 3.6 Resource mobilisation under further calls									
Outcome 2 UNCTs, supported by the PUNOs, have piloted and enhanced capacities to programme, raise resources, and utilise the potential of the buildings and constructions sector to achieve the 2030 Agenda and the Paris Agreement.												
Output	Annual target/s		List of activities	Time frame								PUNO /s involved
	2020	2021		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Output 4. Country assessments, SBC roadmaps, and tailored capacity building guidance	0	2	Activity 4.1 SBC Country assessments									UNEP leads Technical support: UN-H and UNOPS
			Activity 4.2 National SBC advocacy and dissemination									
			Activity 4.3 Development of SBC Roadmaps for selected countries									
			Activity 4.4 Adoption of SBC Roadmaps in selected countries									
			Activity 4.5 Country specific resource mobilisation efforts									
Output 5 Piloted value assessment methodology for selected government-led housing projects	0	1	Activity 5.1 Selection of national project or programme for value assessment testing									UN-H leads Technical support: UNEP and UNOPS
			Activity 5.2 Stakeholder validation									
			Activity 5.3 Piloting the methodology									

6.2 Country activities: Multi-stakeholder Expert Groups, country assessments and Buildings and Construction roadmaps

As part of the Outcome 2 of the programme 'UNCTs, supported by the PUNOs, have piloted and enhanced capacities to programme, raise resources, and utilize the potential of the buildings and constructions sector to achieve the 2030 Agenda and the Paris Agreement,' the following steps will be developed together with the countries in order to develop Outputs 4 and 5.

Output 4. Country assessments, SBC roadmaps, and tailored capacity building guidance

The objective is to build on the [GlobalABC Regional Roadmaps for Buildings and Construction](#) to develop Buildings and Construction Roadmaps for Burkina Faso and Sri Lanka through a participative stakeholder process with a view to increase scale, pace and impact of climate action and resource efficiency in the sector.

The roadmap will outline the range of actions that different actors can take in the short, medium and long term to achieve a built environment that is zero-emission, efficient and resilient. Modelled on the GlobalABC roadmaps, it will cover the following eight 'activity areas': urban planning, new buildings, existing buildings, building operations, appliances and systems/equipment, materials, resilience, and clean energy, and for each of these propose key actions, targets for policies and technologies, and enabling measures with the aspiration of reaching net-zero carbon emission buildings by 2050. Special attention will be given to resource efficiency and materials related issues. The roadmap will also address cross-cutting topics called the enablers, that cover capacity-building, finance, technology and multi-stakeholder engagement.

To develop the roadmap a team of national experts will be formed in each country to deliver the following activities:

- (1) *Establishment of a multi-stakeholder expert group for the roadmap development process (Estimated duration 4 weeks)*
 - a. Conduct a stakeholders mapping taking into account the value-chain approach and analyse existing coordination platforms/mechanisms for Buildings and Construction in the country
 - b. Develop ToR for setting up the multi-stakeholder expert group including an ideal list of constituencies and members and an advocacy brief for sustaining this platform as a National Alliance for Buildings and Construction
 - c. Conduct a stakeholder workshop/consultation to present the stakeholder mapping, draft plan/ToR for setting up a stakeholder platform for the roadmap and present the roadmap development process

Deliverable 1: Succinct stakeholder analysis report, ToR for the Multi-stakeholder Expert Group/National Alliance on Buildings and Construction, and report from consultation workshop

- (2) *Conduct a country assessment of the buildings and construction sector (estimated duration 8-12 weeks starting at the same time than (1))*

Using existing the SBC Country Assessment Tool take stock of and analyse existing policies, programmes, strategies, institutions, actors and specific contexts, data and information related to the entire building life cycle in the country with a view to provide a baseline for the 'Roadmap for Buildings and Construction 2020-2050'. The assessment will focus on the eight 'activity areas' defined in the GlobalABC roadmaps: urban planning, new buildings, existing buildings, building operations, appliances and equipment, materials, resilience, and clean energy - with specific attention to building materials and resource efficiency.

- a. Collect existing/available reports, data and analysis on the country's buildings and construction sector – including regional/sub-regional reports outlining relevant priorities and recommendations

- b. Identify data and information gaps and summarise preliminary findings/analysis
- c. Conduct a first stakeholders' workshop/consultation to present the assessment process, preliminary findings, different stakeholders involved and data collection needs
- d. Collect additional data and information from stakeholders
- e. Conduct a final analysis and identify needs, challenges, and opportunities for greening the sector taking into account/linking existing and planned initiatives/projects – including impacts of Covid19 crisis on the sector and opportunities the sector presents for post-Covid recovery
- f. Draft the assessment report
- g. Conduct a second stakeholders 'workshop/consultation to present key findings and discuss priorities and recommendations
- h. Based on the findings from the assessment, select the priority 'activity areas' of the GlobalABC/IEA Roadmap Buildings and Construction for the 'national Roadmap for Buildings and Construction 2020-2050'
- i. Finalize the assessment report

Deliverable 2: Country assessment report with preliminary recommendations and priorities for 'national Roadmap for Buildings and Construction 2020-2050'.

Intermediary deliverables: (i) assessment workplan and annotated outline of the assessment report, (ii) first draft report i.e. preliminary analysis and (iii) second draft report.

(3) Elaboration of 'Roadmap for Buildings and Construction 2020-2050' (Estimated duration 8-12 weeks)

- a. Based on the results and outputs of Activity 1 and engaging the suggested constituencies and members for Multi-stakeholder Expert Group/National Alliance on Buildings and Construction (resulting from Activity 2), elaborate the content for the 'Roadmap for Buildings and Construction 2020-2050' as indicated in the Annex: 'Structure and Content' through a participatory process
- b. Facilitate coordination meetings, representative surveys and at least three technical workshops/consultation with stakeholders for discussing strategies and actions for the Buildings and Construction Roadmap incl. preparation of documents, presentation for meetings, preparation of questionnaire and survey form for the 3 consultation seminars/meetings

Deliverable 3: Roadmap for Buildings and Construction 2020-2050

Intermediary deliverables: (i) annotated outline of the national roadmap and annotated template for including buildings in NDCs, (ii) first draft of the roadmap and (ii) second draft of the roadmap.

Output 5. Piloted value assessment methodology for selected government-led housing projects

First next step is to identify the National Building, housing and construction programme to be analyzed, 1 per country. Once identified the objective will be to collect all the information in order to use it as a base for the value-assessment tool. Identifying materials and the value chain and going through a first assessment with the Sherpa tool.

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Appendix

Appendix 1: Burkina Faso and Sri Lanka and the links to SDG12

Achieving economic growth and sustainable development requires that we urgently reduce our ecological footprint by changing the way we produce and consume goods and resources. The way we produce materials and goods and the way we use them efficiently is an important target to reach this goal.

Buildings and construction sector accounts for 36% of final energy use and 39% of energy and process-related carbon dioxide (CO₂) emissions in 2018, 11% of which resulted from manufacturing and procurement of building materials and products such as steel, cement and glass (GlobalABC, 2019)—making the building sector the single most significant industry in terms of emissions. In addition, the building sector consumes 12% of freshwater and 30% of raw material and it generates approximately 20% of water effluents and as much as 40% of landfill waste globally (WEF, 2016). With the building stock set to double by 2050, emissions, energy and resource consumption of the sector are set to increase.

In relation to Goal 12: Several targets are directly affected by the construction sector.

12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

The selected countries have an ongoing agenda to promote resource efficient housing.

Burkina Faso

Burkina Faso has an interest to promote climate-friendly materials for building construction in rural and semi-urban areas and metal-free and wood housing (NDCs 2018). The National sustainable development policy of Burkina Faso highlights the housing sector to continue being characterized by predominance of precarious habitats. Indeed About 70.1% of the population lives in habitats built from non-definitive materials such as mud and straw. All these data lead to the conclusion that the current conditions affect the achievement of the MDG due to poverty.

Table 16. Intentions within NDCs relating to embodied carbon in buildings

Country	Intentions within NDCs relating to embodied carbon in buildings
China	Intention to control emissions from key sectors, including steel and building materials manufacturing, through energy conservation and efficiency improvement.
Niger	Ambition to promote low-carbon construction through frame-free buildings.
Cameroon	Has expressed interest in building a low-carbon construction and renovation value chain, in addition to increasing the insulation performance of building envelopes.
Senegal	Proposes using locally available materials such as bulrush (a water plant) for insulation, as well as innovative construction techniques (such as Nubian vaults) to reduce the carbon footprint of the buildings and construction sector.
Burkina Faso	Interest in promoting climate-friendly materials for building construction in rural and semi-urban areas. Around 3,000 community buildings will be targeted, while subsidies and tax breaks will favour the construction of another 20,000 low-carbon private residences. The promotion of metal-free and wood housing for 17,000 citizens is also targeted to provide greater resilience to climate change in rural and semi-urban areas. Public R&D funding for architectural and construction technologies will support the development of climate-resilient buildings using low-carbon materials.

Source: Abergel et al. (2018).

NDC - Resource efficiency and climate change Report

The Burkina Faso National climate change adaptation plan (NAP) identifies the first objective SO1 to “Improve access to adequate housing for disadvantaged populations by means of rental properties, self-build funding and new social housing” being research on sustainable materials their one of the key indicators, the need to use long-lasting local materials for housing construction as a target of their building and infrastructure system. Climate projections based on LAME studies suggest that the high number of rainy days and long rainy seasons will have a negative impact on buildings, especially makeshift housing made of adobe for its porosity.

Overall objective: Increase the resilience of populations and the built environment to climate change with a view to sustainable development				
Specific objectives	Outcomes	Indicators	Method and source of verification	Hypothesis/risk
SO 1: Improve access to adequate housing for disadvantaged populations by means of rental properties, self-build funding and new social housing	Access to adequate housing for everyone is guaranteed through the provision of rental accommodation, support for self-builds and the construction of social housing	Social housing built (number) Number of people in receipt of self-building grants from the Self-Build Assistance Office Self-Build Assistance Office client numbers Average cost of house building Level of enforcement of rental accommodation regulations Level of research into appropriate construction materials and techniques Ease of access to accommodation	Draft document Proof of key hand-overs for accommodation Reports by the Self-Build Assistance Office Visual confirmation of housing construction (photographs) Regulations on private rental properties	Funding is available Trained staff are available Parties interested in building their own home are clients of the Self-Build Assistance Office Landlords enforce the regulations

NAP – Objectives

Infrastructure and housing	
	OS 1: Promote access to decent accommodation for disadvantaged social groups by providing rental accommodation, supporting DIY construction and building social housing stock
	SO 2: Provide public facilities and road, water and rain and waste-water drainage infrastructure which is practical and resilient through good design/implementation and good maintenance
	OS 3: Turn the towns of Burkina Faso into hubs of economic growth and sustainable development by promoting a green economy

NAP – Infrastructure and housing

2	Construction standards, materials and research and the use of new construction technologies
	<ul style="list-style-type: none"> Product an energy efficiency code for the construction sector; Carry out research into renewables and apply the research in practice; Promote the use of solar energy for disadvantaged areas and nearby public facilities; Produce guidelines for the use of appropriate construction materials (specifications and techniques); Build weather forecasting capacities;

NAP - Actions to be taken in the sub-section of construction

Burkina Faso aims to become a prosperous country through a structural and inclusive transformation of its national economy. An Alliance with GGGI to support the government in its efforts to implement this green economy transition under a five years Country Planning Framework CPF (2019-2023) with the following outcomes.

1. Climate-resilient, energy efficient, and low-carbon driven cities.
2. Inclusive and resilient ecovillages.
3. Less GHG emissions and more Green Jobs thanks to green investment in energy, water & sanitation, and landscape sector.

Sri Lanka

The draft National Policy on Sustainable Consumption and Production provides overall guidance with regard to sustainable consumption and production aspects in all economic sectors highlighting target 12.7 as a priority: a green public procurement policy is being drafted in Sri Lanka. Under its Mission 9 on Greening the Industries, two action items have been listed relevant to public procurement. The two items are;

- (a) Create guidelines to facilitate industries to select and procure environmentally friendly raw materials-
- (b) Promote green purchasing. By 2 indicators: the availability of guidelines and the availability of the green purchased network for the two actions respectively (Target 12.7).

The VNR on SDG 12 highlights that SCP policies have to be properly integrated to all national policies and plans for effective implementation. Within the National Cleaner Production Programme in place for more than 15 years in Sri Lanka. A Resource Pack on sustainable consumption and production to educate citizens regarding sustainable consumption and production and thereby encourage positive behavioural changes 28(Target 12.8). A Green Reporting System is being implemented by the MMDE. 50 indicators (6 economic indicators, 20 social indicators and 24 environmental indicators). The first economic indicator deals with the direct economic value generated by the organization (Target 12.6).

According to the inputs from the expert consultations, certain policy initiatives have been carried out to introduce Eco labelling for certain products (e.g. in CFL bulbs), GREENSL based on sustainability of the building material. The VNR also highlights its lack of capacity in sustainability codes and certifications like the air pollution monitoring at the PM2.5 level, the need for an appropriate legal framework, and technical standards for waste management.

Appendix 2. Preliminary list of countries for the implementation of the Joint Programme

Pre-assessment criteria list of potential countries:

Country pre-selection	Criteria useful for country preselection (links established by PUNOs, status of Cooperation Framework cycle, etc.)	Confirmed availability of PUNO knowledge (normative work) and human resources (including presence in UNCT) in country
Argentina	<ul style="list-style-type: none"> • OPN country and One Planet Board member • SBC Programme MAC member • Global ABC member • Interest from UNDP to work on resource efficiency • New CF cycle starting in 2021 (document currently not available on UNSDG website) 	<ul style="list-style-type: none"> • There is no UN-H country office • UNEP has several projects in the country including a GEF cities project
Burkina Faso	<ul style="list-style-type: none"> • OPN Country • Strong interest and champion for sustainable buildings and construction • SBC Trust Fund Project Pilot Country in 2017 • New CF cycle starting in 2021 (document currently not available on UNSDG website) 	<ul style="list-style-type: none"> • UN-H country office presence in UNCT and has expressed interest • On-going UEMOA Housing and capacity building project • Completed a UN-H Housing profile
Cambodia	<ul style="list-style-type: none"> • OPN Country • New CF cycle starting in January 2024 • 	<ul style="list-style-type: none"> • SCP National Action Plans • UNOPS and UN-H have expressed the interest to present a Joint proposal
Colombia	<ul style="list-style-type: none"> • OPN country • SBC Programme MAC member and 2 Trust Fund projects already implemented • New CF cycle started in January 2020 (document currently not available on UNSDG website) • Country with a GlobalABC participating member 	<ul style="list-style-type: none"> • UN-H country office presence in UNCT and has expressed interest • Government is active in SBC area, namely through recent sustainable constructions policy CONPES 3919; moreover, local governments in Barranquilla and Medellin have shown interest in this area of work.
Cote d'Ivoire	<ul style="list-style-type: none"> • OPN country • Global ABC member, SBC partners, strong interest and champion for sustainable buildings and construction • New CF cycle starting in 2021 (document currently not available on UNSDG website) 	<ul style="list-style-type: none"> •

Djibouti	<ul style="list-style-type: none"> New CF cycle starting in 2023 => could offer opportunity to support/engage in UNSDCF development process 	<ul style="list-style-type: none"> No UN-H established team yet. Programme for country office is under development. Not an OPN country
Mexico	<ul style="list-style-type: none"> OPN Country SBC Programme MAC member UN Habitat closely working with Mexico (Infonavit, Conavi, SEDATU) New CF cycle started in January 2020 (document currently not available on UNSDG website) 	<ul style="list-style-type: none"> UN-H country office presence in UNCT and has expressed interest Completed UN-H Housing Profile and/or National Housing Policy The Housing Building Code (CEV) of the National Housing Commission (CONAVI). Mexican Standard for Sustainable Building (NMX-AA-164-SCFI-2013). Sustainable Buildings Certification Program (PCES) of Mexico City Green Housing Assessment System (SISEVIVE-EcoCasa).
Mongolia	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Mozambique	<ul style="list-style-type: none"> New CF cycle starting in 2022 => could offer opportunity to support/engage in UNSDCF development process 	<ul style="list-style-type: none"> UN-H country office has expressed that there is no human resource capacity to take this project Completed UN-H Housing Profile and/or National Housing Policy Not a OPN country
Nepal	<ul style="list-style-type: none"> OPN Country CF cycle 2018-2022. New one starting 2023, opportunity to collaborate SBC Programme partner Country with a GlobalABC participating member 	<ul style="list-style-type: none"> Completed UN-H Housing Profile and/or National Housing Policy UNOPS team show expression of interest to participate
Philippines	<ul style="list-style-type: none"> OPN Country New CF cycle to start in January 2024 SBC Programme Partner 	<ul style="list-style-type: none"> Both UNEP and UN-H have activities in country
Senegal	<ul style="list-style-type: none"> OPN country Global ABC member, strong interest and champion for sustainable buildings and construction New CF cycle to start in January 2024 	<ul style="list-style-type: none"> Completed UN-H Housing Profile and/or National Housing Policy
Sri Lanka	<ul style="list-style-type: none"> OPN Country New CF cycle starting in 2023 => could offer opportunity to support/engage in UNSDCF development process SBC Programme partner 	<ul style="list-style-type: none"> UN-H country office presence in UNCT and has expressed interest Completed UN-H Housing Profile and/or National Housing Policy Green Building Council of Sri Lanka has a green rating system for buildings and a green labelling system for products which needs

		<p>improvement, formalization and promotion, which can be supported by the proposal.</p> <ul style="list-style-type: none">• Existence of a hazard Resilient Construction Manual with the National Building Research Organisation, as well as a Green Technology Module drafted by UN-Habitat
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Appendix 3. Detailed country selection criteria

The following is the assessment criteria developed for the evaluation of the countries. The first evaluation was done under the Assessment Criteria presented in December 2020 by the 5 countries. After the analysis and evaluation of the documentation presented.

The shortlisted candidates were requested several questions to be submitted and an online meeting to discuss the EOI presented and the highlighted questions. After the interviews there is a second assessment that takes into account and evaluates the countries under 3 criteria that englobe both the initial Submission Criteria and the online interview.

The Data base reflects the following assessment:

	Criteria	Weight	Country 1	Country 2	Country 3	Country 4	Country 5
			CAMBODIA	SRI LANKA	COLOMBIA	BURKINA FASO	NEPAL
a) Government Related	Indication of government's interest, appetite, political will, in engaging with Joint Programme's theme.	Necessary	0,8	1,0	0,7	0,7	1,0
	Existence of a government counterpart with the PUNOs having an established partnerships with UNCT or resident agency.	Complementary	1,0	1,0	0,7	0,7	1,0
	Existence of a track record of reporting on SDGs or NDCs in relation to the Joint	Complementary	0,5	1,0	1,0	0,5	1,0
	Existence of advocacy and awareness raising efforts or programmes linked to Joint	Complementary	0,7	1,0	1,0	1,0	0,8
b) Country Office Related Criteria	Presence and recurrence of country office in UNCT meetings	Necessary	1,0	1,0	0,7	0,5	0,7
	Status of Cooperation Framework Cycle	Necessary	1,0	1,0	1,0	0,5	0,8
	Existence of a PUNO office in given country and/or partnership with existing	Necessary	1,0	1,0	0,0	0,5	0,8
	Indication of country office's interest, appetite, political will, in engaging with Joint	Complementary	1,0	0,7	0,2	1,0	1,0
	Existence of country office related initiatives, programmes, projects, and its relevant	Complementary	0,7	1,0	1,0	1,0	1,0
c) Data Related Criteria	Existence of data and information relevant and necessary for Joint Programme	Necessary	0,3	0,8	1,0	0,5	1,0
	Analysis of housing and SBC related trends in selected country, including SWOT	Complementary	0,0	0,8	1,0	0,5	1,0
	Risk analysis for Joint Programme's success	Complementary	0,0	0,6	0,7	0,5	1,0
Average	a) is related to the government counterpart for the Joint Programme to operate in.		0,8	1,0	0,9	0,7	1,0
	b) is related to the PUNO and its participation or engagement with the UNCT.		0,9	0,9	0,6	0,7	0,9
	c) is related to the actual existence of data and information.		0,1	0,7	0,9	0,5	1,0
	Average of the above (a,b,c)	Partial Assessment	0,6	0,9	0,8	0,6	0,9
Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,7	0,9	0,9	0,7	0,8
	Team structure and response capacity	Necessary	0,8	0,9	0,6	0,7	0,6
	Specific projects referred for engagement	Necessary	0,5	0,8	0,7	0,9	0,6
GLOBAL	Country interview and analysis criteria	Final Assessment	0,7	0,9	0,7	0,8	0,7
Language of the docs presented			English	English	English/Spanish	English/French	English
Meeting			13th 10EAT	7th 12 EAT	8th 16EAT	12th 16EAT	8th 13EAT
			8CET	10CET	14CET	14CET	11CET

Burkina Faso

- Show interest of the government in sustainable housing, affordability and resilience of the housing projects, especially linked to the current situation of crisis and displacement in the country and increased due to COVID19.
- Highlighting documentation and strategies, also refer to some interesting projects that could be aligned to the project. Building of 500 units in different cities.
- Interest in building a roadmap for construction and buildings and highlighting the repercussion of sustainable materials, affordability and incremental processes in housing.

Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,7	There is a new Ministry which brings possibility of new engagement with the project. New UNDAF 2021-2025. is in process and there would be a possibility to influence in Pillar 2. Mise à échelle des mesures de protection sociale, accélération de l'accès équitable et universel aux services sociaux de base and Pillar 3. Sustained promotion: of inclusive economic growth and sustainable production methods. Donor Coordination group La Troica: Cooperation Suisse, IB Bank International, World Bank, GGGI, YAAM Solidarité and other stakeholders
	Team structure and response capacity	Necessary	0,7	Structured team with previous engagement with OPN, Sherpa development and strong relation with YAAM solidarité. Burkina Faso migration crisis is moving resources but needs as well to link the project to this situation The project could be related to "Humanizé les assentements informels". AS a catalizer for more sustainable housing.
	Specific projects referred for engagement	Necessary	0,9	Development of 500 housing units in the next 18months in the cities of Kaya, Dori, Kongoussi et Tougouri. The MPTF project could be engaged to this process.
GLOBAL	Country interview and analysis criteria	Final Assessment	0,8	Show interest of the government in Sustainable housing highlighting documentation and strategies, also refer to some interesting projects that could be aligned to the project. The crisis leads to a more sustainable solution of the housing projects being developed which is related to the project.

Sri Lanka

- High Government interest in participating in the program, Ministry Letter, and several efforts like the reference to Green Building Council and Construction Industry Development Authority. System of labelling Green Construction Materials GREENSL®. From the Green Building Council of Sri Lanka link to material resources and the importance in the Value-chain.
- The current Cooperation Framework is attached and there is an opportunity to provide inputs on SDG12 under the Planet Pillar for the future framework 2023.

- Current affordable housing projects ongoing to engage with like the Indian Housing Project in Plantation Areas.

Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,9	High Government interest in participating in the program, Ministry Letter, and several efforts like the reference to Green Building Council and Construction Industry Development Authority. The current Cooperation Framework is attached and there is an opportunity to provide inputs on SDG12 under the Planet Pillar for the future framework 2023. GREENSL*. Green Building Council of Sri Lanka https://srilankagbc.org/product/ - Substitution for imports materials. Imports seriously cutted IN THE NATIONAL PLAN - Zero-Carbon development IN THE NATIONAL PLAN Good structure and donor coordination group. OAK, JTI Foundation, WWF, University of Peradeniya, Ford Foundation, Trade Association. Green Building Council of Sri Lanka
	Team structure and response capacity	Necessary	0,9	UN-Habitat and UNOPS are resident agencies actively participating in UNCT, UNHCT and other working groups including communications, gender and UNSDF working groups. UN-Habitat collaborates with UNRC and UNDP on building and construction related matters including construction of the new office and auditorium at the UN compound. UNEP engaged in several occasions and close contact
	Specific projects referred for engagement	Necessary	0,8	The Indian Housing Project in plantation areas. EOI for 10,000 houses.
GLOBAL	Country interview and analysis criteria	Final Assessment	0,9	Good engagement. Structured and organised team. Opportunity to provide inputs on SDG12 under the Planet Pillar for the future framework 2023. Clear project to participate.

Colombia

- Shows structured and researched-based evidence of the interest to develop MPTF project with a strong relationship with government and public and private stakeholders.
- Lack of human technical or financial resources (ask more details), attached documents reflect the interest in the value-chain in sustainable social interest housing. No specific housing projects mentioned for the long run although a good network to engage stakeholders and private sector.

Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,9	Good relationship with the government and stakeholders map. Colombia is the president of Minulfi. A platform where all the Ministry meeting meets promote and expand the relation in the agency. National development Plan. Transversally the government has a plan on sustainability and construction and they are asking for technical assessment, not for founding. The team has experience in joint programs and Urban Lab
	Team structure and response capacity	Necessary	0,6	Lack of Resources. Rapid urbanisation processes now have other priorities. They have a broad map of stakeholders: Camacol, Aburra Valley Urban Labs.
	Specific projects referred for engagement	Necessary	0,7	Shows structured and researched-based evidence of the interest to develop MPTF project with a strong relationship. Minor projects to collaborate identified. Sustainable housing consultancy, but lack of overall visibility 3 months
GLOBAL	Country interview and analysis criteria	Final Assessment	0,7	Broad experience in Sustainability projects Lack of resources and too many projects.

Nepal

- Present a strong well supported proposal, attaching several docs including an email from the Director-General Department of Urban construction and several programs and media communication examples.
- Regarding the joint program, the application has been presented by UNOPS does not show an open visibility in collaboration with the other organisations. They also highlight the MoU to be an implementing Entity for the One Planet Network in 2019 in 2 of the 6 working programs namely: Sustainable Buildings and Construction and Sustainable Public Procurement.
- Lack of visibility of ongoing projects to engage.

Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,8	Reconstruction in Nepal and sustainability are key. "National Research Center for Building Technology - NRCBT" to look aer building material and technology sector and research of greening building practice in the country in order to initiate our economy towards greening. Donor coordination and stakeholders: Japan, KOIC, Eu Delegation
	Team structure and response capacity	Necessary	0,6	UNOPS engagement with the government and representation in the country through UN-Habitat. Lack of visibility of engagement with the other agencies and UNCT. Lack of visibility of projects and contacts.
	Specific projects referred for engagement	Necessary	0,6	Lack of visibility to engage with projects. Ongoing Housing Reconstruction Program will be running for the next 12 months in the Nuwakot District
GLOBAL	Country interview and analysis criteria	Final Assessment	0,7	Show good level of research and previous project but lack of cohesion between agencies and local team, needs more visibility on ongoing projects

Cambodia

- There is a strong will to participate and develop a project with their local offices of UN-H and UNOPS, highlight, UNOPS commits to mobilizing resources expert in the field of sustainable construction, planning and architecture, as well as sustainable procurement specialized in infrastructure.
- No specific project in the field of sustainable housing is mentioned for the next years, although they have already implemented, Housing Resilience Project within Climate Change and Adaptation and other projects reflecting Smart-city and post COVID19 health infrastructure recuperation.

Country interview and answers on submission	Cooperation framework with stakeholders, governments	Necessary	0,7	Project related to Outcome 5 of UNDAF. The framework of UNDAF and NDCs has an open bridge for reinforcing construction. This project is directly linked to SDG11 and SDG7 and SDG9. Outcomes 3 and 5 of UNDAF, sustainable living and Managing Urbanization Already have various joint programs Donor coordination group existing and good relationship with stakeholders. GGI, Eurochamp, IFI
	Team structure and response capacity	Necessary	0,8	Work in consultation with the UNRC country office. UNEP has already a Roadmap project ongoing.
	Specific projects referred for engagement	Necessary	0,5	UNOPS has an expert on Infrastructure and Urbanism ready to work Smart-city for Sihanoukville infrastructure and mobility. Strengthening the infrastructure of 45 public hospitals after COVID19.
GLOBAL	Country interview and analysis criteria	Final Assessment	0,7	Strong team structure and link to the current UNDAF and NDC. Overlap an ongoing roadmap with UNEP

Appendix 4. Detailed assessment of each country proposal based on the submitted information

Burkina Faso

- a) **is related to the government counterpart for the Joint Programme to operate in.**
- Aligned strategy for Green cities and climate change
 - Structured legislation
 - Lack of concrete intentionality of working together for this project
- b) **is related to the PUNO and its participation or engagement with the UNCT.**
- No evidence, when is the next cycle of UNSDCF taking place?
 - Several projects, check if we can get engaged
- c) **is related to the actual existence of data and information.**
- Some documentation, but not explicit
 - Currently, Burkina Faso is facing one of its most challenging time, in terms of displacement of population (1M). The development of sustainable housing and resource efficiency will have to be also related to these internal movements and new constructions declining from this phenomenon.

Burkina Faso	
Strength	<p>National institutional, policy and legal frameworks The government adopted the National Plan for Adaptation to Climate Change (PNA) and the National Green City Strategy. Finally, the national housing construction programme was set up with a particular feature, focused on sustainable, environmentally friendly materials.</p> <ul style="list-style-type: none"> - The National Plan for Adaptation to Climate Change (PNA) - The National sustainable development policy - The national green cities strategy in Burkina Faso <p>Building code development and maintenance Building design and permitting processes Local implementation and enforcement</p> <ul style="list-style-type: none"> - Project already ongoing: Town Hall of Bobo-Dioulasso and the Global Green Growth Institute (GGGI), UN-HABITAT has initiated a process of formulating the "Project for the creation of an ecovillage in Bobo-Dioulasso" <p>Construction materials and practices</p>
Weakness	<p>Building code development and maintenance Building codes are from 2004 and have not been updated. ¹</p>
Opportunity	<p>Local implementation and enforcement Plan to launch 40,000 units of housing in collaboration between the State and local banks as part of the National Construction Programme for 40,000 units As of October 2016, 4,500 units of housing were constructed in Bassinko out of a total of 14,000 that are planned in this city Habitat Bank of Burkina Faso (BHBF) has rolled a recovery plan including increase of its capital (from 5 to 10 billion F CFA), opening of new agencies, new organizational structure²</p>
Thread	<p>Local implementation and enforcement</p>

¹ From UNSS – Global Housing Panorama

² From UNSS – Global Housing Panorama

	- Current situation of the country in terms of migration, will prioritise the agenda towards this. Projects should take into consideration the current situation and initiatives must collaborate to allocate resources to this phenomenon.
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Sri Lanka

a) is related to the government counterpart for the Joint Programme to operate in.

- Project ongoing on a second phase Indian Housing Project
- GREENSL®. Product certification for green materials. Green Rating system in English?
- Idea continue IHP evaluating the certification of the products and assessing the construction process.

b) is related to the PUNO and its participation or engagement with the UNCT.

- Minutes of participation in UNCT
- New UNSDF starting in 2023, opportunity for engagement in the UNCCA
- No direct implication or support, but attaches list of Staff Members
- Attached list of ongoing projects

c) is related to the actual existence of data and information.

- Attached documents on research
- Ongoing projects end in 2021?
- Risk on long term finance and relationship with the government due to the expectations on tangible outputs

Sri Lanka	
Strength	<p>National institutional, policy and legal frameworks</p> <ul style="list-style-type: none"> • The National Building Research Organisation (NBRO), the technical centre under the Ministry of Defence in charge of landslide mitigation, has developed and enforced planning and zoning regulations to address the vulnerability of the building stock to landslide hazard, with particular focus on non-engineered housing. They have also issued a manual for the introduction of hazard resilient features in non-engineered housing. <p>Building design and permitting processes</p> <ul style="list-style-type: none"> • An online “one-stop shop” for development approvals in Declared Urban Areas has been introduced by the Urban Development Authority (UDA), the agency in charge of regulating the urban development process in Sri Lanka. This has improved the building approval process efficiency and its transparency. • Rare or isolated cases of community participation in Planning and design. A paradigm shift in focus needs to be inculcated within the design and planning professions for the planning/implementing culture to evolve into a more advanced system that is more responsive to community needs and aspirations.³ <p>Construction materials and practices</p> <ul style="list-style-type: none"> • GREENSL Green Rating System Green Building Council of Sri Lanka – to mainstream Green Sri Lanka Rating System and Green Sri Lanka Labelling system for buildings and products respectively.
Weakness	<p>National institutional, policy and legal frameworks</p> <ul style="list-style-type: none"> • Overlaps and gaps in building regulations and institutional mandates are leading to inefficiency. A strong set of building regulations exists, founded on a long history of building regulation reaching back to colonial times. Incremental and reactive changes to laws have, however, led to overlaps

³ <https://www.uda.gov.lk/strategic-plan.html> Strategy 14.4

	<p>and some confusion as to the mandates of different authorities. This means that obtaining the approvals necessary for new developments remains a key challenge for contractors and developers, particularly with regard to land and procurement.</p> <p>Building code development and maintenance</p> <ul style="list-style-type: none"> There is currently no national building code for Sri Lanka. Current practice in Sri Lanka sees a complex set of building regulations, implemented through the use of varied international building codes coupled with local material standards. This mix of regulations provides an unclear picture of the level of safety, resilience, and sustainability actually realised in new developments. A coherent system of building regulations is required to reflect local conditions, skills, and resources. This has been recognised by the Sri Lankan government, and the Cabinet has recently approved the development of a National Building Code for Sri Lanka. Home grown green building system introduced in Sri Lanka in 2012. Green Building Council Sri Lanka (GBCSL) has joined hands with the Institute for Construction Training and Development (ICTAD) in implementing this novel rating system.⁴ <p>Building design and permitting processes</p> <ul style="list-style-type: none"> Building regulations are not easily accessible by the public. A factor that can potentially be detrimental to education on building regulations is the lack of public access to key documents comprised in the regulatory framework. While Acts and Gazette Notifications are available online, technical regulations (e.g., ICTAD regulations) and national reference standards (SLSI standards) are not immediately available to practitioners, students, and the wider public. The building approval process is not yet fully comprehensive. The building approval process is central to the entire building regulatory system. Although improvements have been made in some areas (e.g., the UDA “one-stop shop” online portal), this needs to be strengthened to ensure efficiency and transparency. This online system is currently available only for UDA-approved buildings, and not all clearing agencies have signed on to it. Another challenge is the lack of clarity among both professionals and the public about procedures (implementation of E-clearance process).⁵ <p>Local implementation and enforcement</p> <ul style="list-style-type: none"> The systems and capacities for enhanced inspection are weak. The lack of an efficient inspection process has led to space violations and insufficient resilience in buildings. Inspections of buildings are only conducted at the end of construction, and local authorities lack the capacity to increase the number of inspections to also examine developments during construction. A skills gap also exists in terms of inspections for resilient features in construction. 2018-2022 strategic plan also proposes to implement PM and project consultancy services with standards applied to the sector.
Opportunity	<p>Building code development and maintenance</p> <ul style="list-style-type: none"> In March 2019, the Cabinet approved the development of a National Building Code for Sri Lanka, and empowered the Construction Industry Development Authority (CIDA) and NBRO to coordinate this in close collaboration with UDA and the Department of Building (DoB). A multi-agency technical committee, the “Code Committee,” has been set up to initiate code development. UDA will continue to partner with Government to obtain financial assistance to deploy pragmatic interventions of middle income housing. UDA has provided 6,071 no of housing units for last 5 Years and will provide 27,510 more housing units from year 2018 to 2022 ⁶

⁴ UNSS – Global Housing Panorama

⁵ <https://www.uda.gov.lk/strategic-plan.html> Strategy 1.3.2

⁶ <https://www.uda.gov.lk/strategic-plan.html> Strategy 2.

	<ul style="list-style-type: none"> Green Building Council of Sri Lanka has a green rating system for buildings and a green labelling system for products which needs improvement, formalization and promotion, which can be supported by the proposal. Indian Housing Project. Opportunity for Collaboration. Ongoing project with a second phase of houses. Development of Middle Income Housing and Infrastructure (It was a commitment to launch an extensive program to construct 500,000 housing apartment at a reasonable price for the middle class and the working class in the urban and suburban areas. "Today, this commitment has been fashioned and developed in to a reality in the form of a vibrant Public – Private partnership effort implemented under Ministry of Housing & Construction)⁷ <p>Urban Development</p> <ul style="list-style-type: none"> Establishing a long-term vision for urban development at the provincial level planning and development ⁸ Strengthen the role of the Province to enhance regional coordination among ULAs Introduce mechanisms for institutional coordination in the provision of urban services bringing ULAs into the mainstream of urban development. <p>Construction materials and practices</p> <ul style="list-style-type: none"> Conserving resources and ensuring sustainability in planning, construction and maintenance are of prime importance due to inadequate natural resources to cater Sri Lanka development needs. Research into the use of alternatives to traditional building materials has been undertaken by the National Building Research Organization (NBRO)) and the National Engineering Research and Development Centre (NERD). Use of sea sand instead of river sand is a direct result of such research. Similarly use of quarry-dust as an aggregate material has also been explored. Large planning areas are subjected to an initial environmental evaluation (IEE) or for plans involving sensitive or severe environmental issues and environmental impact assessment (EIA) The Government recently embarked upon an exclusive programme to provide middle-income housing at nodal points along expressways and railway lines through private sector participation. ⁹
Threat	<ul style="list-style-type: none"> If the climate change effects become unpredictable and severe, as some scientists have warned, Sri Lanka should get ready to face a situation of acute suffering. The national physical plan has identified ways of managing the known effects of climate change by designating the coastal areas and some agricultural areas as risk areas and environmentally fragile ¹⁰ At programmatic level UN-Habitat in Sri Lanka runs the risk of not having long term funding with the majority of projects ending by June 2021.

⁷ UNSS – Global Housing Panorama

⁸ Habitat III_27.

⁹ Habitat III_29

¹⁰ Habitat III. 15

Colombia

a) is related to the government counterpart for the Joint Programme to operate in.

- MOU with UN-habitat to promote the implementation of the NAU and SDGs
- Long term strategy of implementing SDGs and sustainable construction
- Affordable housing was a priority for the government 2015-2020 Conpes. Missing visibility on the following period.

b) is related to the PUNO and its participation or engagement with the UNCT.

- To be updated, UNSCDF docs to be attached
- No PUNO highlighted in original Criteria Assessment
- Resources missing
- SBC projects already developed

c) is related to the actual existence of data and information.

- Sustainable architecture and construction guides
- Sustainable social housing
- Instruments for financing eco-sustainable housing

Colombia	
Strength	<p>National institutional, policy and legal frameworks Implementing the SDGs has been one of the priorities for almost a decade. CONPES Document 3919 of 2018 "National Policy for Sustainable Buildings", Document CONPES 3700 of 2011 that adopts the Institutional Strategy for the Articulation of Policies and Actions on Climate Change Matters in Colombia</p> <p>Building code development and maintenance In the previous 2014-2018 UNSDG period Sustainable construction was a priority for the country, several regulations and decrees were created. Decree 1075 of 2015 that regulates the housing sector, the sustainable housing policy, environmental guidelines for the design and construction of urban housing. Housing and habitat policy for Bogotá and others.</p> <p>Building design and permitting processes A sustainable construction framework is already in place and developing different projects: Guidelines for the construction of eco-sustainable housing, Introduction to eco-sustainable construction, Sustainable architecture and urbanism in Colombia High number of projects taking sustainable guidance into place The Ministry of Housing, City and Territory 2015 was to establish sustainability criteria for buildings and will make the necessary regulatory adjustments that allow their regulation.¹¹</p>
Weakness	<p>National institutional, policy and legal frameworks Undaf 2020-2023 has been signed but does not highlight sustainable housing as one of the priorities. One of the barriers for deployment of sustainability criteria in the housing market is the lack of incentives to promote, build or acquisition of sustainable houses.¹²</p>

¹¹ CONPES p.64

¹² CONPES p.57-58

Opportunity	<p>Local implementation and enforcement</p> <p>Engagement of non-governmental organizations such as Tecnia to incorporate innovative technologies into sustainable and resilient urban development. The Ministry of Agriculture and Rural Development as plans to develop on 2020 a credit line to finance rural housing VIS according to the sustainable criteria. Including initiatives like "Hipoteca Verde" and other incentives identified by IFC and Deloitte.¹³</p> <p>Construction materials and practices</p> <p>Guidelines and sustainable construction processes have been created. SBC Trust Fund Project: Sustainable Construction Policy in the Aburrá Valley, Colombia (completed in 2018) + SBC partners in the country has already set up a line of work for further implementation projects.</p> <p>Conpes agreement expects to define between 2018-2020 the sustainability criteria for all kind of buildings and the complete building life-cycle.</p> <p>Highest % of wood is consumed for the building industry, but they lack an efficient production process. Material is not efficiently shaped for construction and factories have to be updated</p>
Thread	<p>Local implementation and enforcement</p> <p>Lack of visibility of current projects taking place and the escalating of the ongoing projects to generate a sustainable housing process.</p>

Nepal

- a) **is related to the government counterpart for the Joint Programme to operate in.**
 - Organised guidelines and easy accessible regulations
 - Sherpa was tried in Nepal and they are a One Planet Country
- b) **is related to the PUNO and its participation or engagement with the UNCT.**
 - UNOPS has collaborated with other agencies, FAO, UNODC...
 - Check relationship with UN-Habitat
- c) **is related to the actual existence of data and information.**
 - Broad research and specifically on materials. Nepal is a consumer of third country materials.

Nepal	
Strength	<p>Building code development and maintenance</p> <ul style="list-style-type: none"> • The instruments and legislation (building code and Nepal national standard) are adequate and easily accessible. • The National Building Code introduced a set of uniform guidelines for professionalising the building and construction sector. It incorporates issues related to environment and disaster resilience. <p>Construction materials and practices</p> <ul style="list-style-type: none"> • There is an organisation responsible Nepal Bureau for Standard and Metrology (NBSM) is the body that looks after the activities concerning standardisation and quality control of building materials. • Most of the basic building materials are produced in Nepal. Construction materials like stone, aggregate, sand and bricks are available locally.
Weakness	<p>National institutional, policy and legal frameworks</p> <ul style="list-style-type: none"> • Nepal's National Shelter policy dates back to 1996 and it is outdated. While the policy was successful in attracting housing developers in the construction of individual dwelling units and apartments to cater for the needs of higher income groups, it failed to direct private investment to lower market segments. <p>Local implementation and enforcement</p> <ul style="list-style-type: none"> • Municipal governments in smaller municipalities lack the technical and administrative capacity to regulate building by laws and enforcement of

¹³ CONPES p.58-59

	<p>building code. The mechanisms to control the quality of works are in place, but mainly because of understaffing, they are not sufficiently equipped to control market forces and carry out monitoring and supervision.</p> <ul style="list-style-type: none"> Typically infrastructure is constructed after the houses have been built, resources are wasted and duplicated, resulting in inefficient use of funds. The water supply is poor and waste water treatment is missing overwhelmingly. The disposal of solid waste is a challenge as few of the municipalities have access to land fill sites. <p>Building design and permitting processes</p> <ul style="list-style-type: none"> There is a lack of awareness about the building code among the general public, and especially the small contractors. Building code is rarely being promoted, with no regular dissemination to all skilled and semi-skilled construction workers, owners and technicians. The regulatory tool used in Nepal to control construction is the building permit which is made mandatory to all buildings in the municipalities and some urbanizing small towns. Yet, it has been found that building permit norms are not followed. <p>Construction materials and practices</p> <ul style="list-style-type: none"> There is an absence of appropriate quality control procedures for manufacturing of National Standard construction materials. Currently this is solely the responsibility of the buyer, as a result delivery, quality or quantity is not always consistent. No policies exist that promote the use of local, indigenous or environmentally friendly building materials. There is monopoly and sometimes cartel formation in construction materials supply affecting affordability and quality of materials. Informal sector builders are responsible for the great majority of housing construction, which makes quality control and enforcement of regulations an issue. <p>Environmental sustainability</p> <ul style="list-style-type: none"> Although the environmental regulations demand IEE and EIA for larger projects, the massive construction of land agent brokered plotting and owner build houses, are becoming a challenge for sustainable development. Flattening the hill slopes with bulldozers, cutting the hill slopes and haphazard digging and filling to produce, developed land for housing is affecting the environment.
Opportunity	<p>Construction materials and practices</p> <ul style="list-style-type: none"> Although there are several cost effective and environmentally friendly construction materials and techniques available in Nepal, these tend to be unpopular and are sparsely promoted. The traditional craftsmanship of Kathmandu Valley, is perhaps one of the best examples of energy saving, space efficient and harmonious building technologies in history. Traditional techniques have eroded over time, and have been replaced by new techniques more adapt to the requirements of 'modern living' In recent years a number of economic and effective technologies have been introduced in Nepal: Rat trap bond, Compact soil block, Bamboo eco-housing.
Threat	<p>Construction materials and practices</p> <ul style="list-style-type: none"> The damage done by sand and boulder mining, and timber logging fuelled by the recent real estate boom are an increasing environmental concern. Out of the 54 cement factories registered in Nepal, only 8 industries have received permission to use the National Standard mark. 85% of the cement demand is met by imports from India neither the government nor private companies are producing to their full capacity due to several reasons including the environmental legislation and power cuts. Apart from basic construction materials like stone, sand and bricks, the majority of supplies are directly or indirectly dependent on import. Most finishing materials used in Nepal are imported from neighbouring countries. Fuelled by the recent real estate boom demand for construction materials fast

	<p>outpace supply, resulting in steep price increases, especially for imported materials.</p> <ul style="list-style-type: none"> • Migration of workers to the international job market has a considerable impact on the housing sector. Skilled workforce both at both ends of the spectrum (skilled labourers as well as educated planners and architects) have left Nepal en-masse to look for brighter futures in the Arab States South East Asia, the vacuum filled by Indian migrant workers.
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Cambodia

- a) **is related to the government counterpart for the Joint Programme to operate in.**
- There is a will to participate and develop a project with their local offices of UN-H and UNOPS, highlight,
- b) **is related to the PUNO and its participation or engagement with the UNCT.**
- UNOPS commits to mobilizing resources expert in the field of sustainable construction, planning and architecture, as well as sustainable procurement specialized in infrastructure.
- c) **is related to the actual existence of data and information.**
- No specific project is highlighted for the next years, although they have already implemented, Housing Resilience Project within Climate Change and Adaptation
 - Very little data and information

Cambodia	
Strength	<p>National institutional, policy and legal frameworks Law on Construction which is effective from 2 November 2019 aims to determine the principles, building technical regulations, rules and procedures for the management of the construction sector in Cambodia. Not easy access or communication.</p> <p>Building design and permitting processes 2014, National Housing Policy enacted [1] 2015, White paper on Land Policy adopted, emphasising provision of affordable housing for low-income groups¹⁴</p> <p>Construction materials and practices</p>
Weakness	<p>Building code development and maintenance Development of the Green Growth Roadmap in 2010, being one of the first countries in the region to do so, but little follow up on the process. New construction law drafted in 2016 but yet to be enacted, current frameworks date to 1994¹⁵</p>
Opportunity	<p>Local implementation and enforcement 2017, Private sector investment in over 3,000 affordable homes¹⁶</p>
Threat	

¹⁴ UNSS – Global Housing Panorama

¹⁵ UNSS – Global Housing Panorama

¹⁶ UNSS – Global Housing Panorama

Appendix 5. UN-Habitat and UNOPS Tools preliminary assessment.

Sherpa

Is a self-evaluation, 360° tool for project managers, communities, and other stakeholders involved in the planning, design, construction and assessment of housing projects. Its goal is to assess buildings and future projects to respond to the transformative aspirations of the [New Urban Agenda](#), the [2030 Agenda for Sustainable Development](#) and the [Paris Agreement](#).

Sherpa envisions housing as a key to sustainable development. The tool evaluates not only ecologically "green" sustainable constructions, but also human, social and cultural factors within and beyond the boundary of a building. SHERPA scores your responses to each question according to 12 indicators which are aligned to the four Pillars of Sustainability: Social, Economic, Environmental and Cultural.

Partners

SHERPA was developed in partnership with members of the Global Network of Sustainable Housing: UN Habitat, CRAterre/ENSAG, VTT Technical Research Centre of Finland Ltd, University of Cambridge; Project partners: EcoSur, Architectes Sans Frontieres Nepal, Yaam Solidarite Burkina Faso, and the Kenya Slum Upgrading Programme; Software partner: Aptivate; and financially supported by UN-Habitat's Cities and Climate Change Initiative, LabEx AE&CC, and the 10 YFP Sustainable Buildings and Construction Programme.



Methodology

Sherpa assesses the Project/building through a set of multiple answer questions in 4 topics Processes, Territory, Neighborhood and Household. The multiple-choice questionnaire enables a quick and accessible assessment of your project for the wide-range, non-technical experts that can fill the questionnaire, without needing of a professional expertise on sustainability or construction standards.

The overall questionnaire gives a grade on performance regarding 4 pillars of sustainable construction: Environmental, cultural, economic and social. This evaluation enables the user to take an initiative to further investigate on the impact of the project or construction according to the different pillars that make buildings sustainable and take action to modify/improve certain aspects with the assistance of a technician on the field.

The self-assessment that Sherpa enables could have an upgraded version on which detailed feedback and ways to improve are granted to the user as well as the impact of the different topics regarding the SDGs, specially SDG 11 and SDG12.

PROCESSES
1. CONTEXT ANALYSIS
2. PROJECT GOVERNANCE AND MANAGEMENT
3. PARTICIPATION AND CAPACITY BUILDING 2. PROJECT GOVERNANCE AND MANAGEMENT
TERRITORY
1. WATER AND SANITATION
2. SOLID WASTE
3. MOBILITY AND NETWORKS
4. ENERGY
5. FOOD SECURITY AND LIVELIHOODS
6. SOCIAL AND COMMUNITY COHESION
NEIGHBOURHOOD
1. URBAN PLANNING
2. URBAN DESIGN
4. LAND TENURE

HOUSEHOLD
1. BUILDING DESIGN
2. ARCHITECTURAL AND BUILDING TECHNIQUES
3. BUILDING ELEMENTS
4. APPLIANCES AND EQUIPMENTS

SWOT Analysis

Strength

- Holistic approach to sustainability in building and construction
- Assessment of the whole value-chain
- Self-assessment Design and already built projects
- No cost
- Accessible to all users, no technical knowledge.
- Co-created by UN-Habitat and UNCTs, One Planet project

Weakness

- No feedback to the user
- No certificate
- No ways to improve

Opportunity

- Complement with feedback
- Reshape it and elevate it
- Escalate the tool

Thread

- Not useful or impactful, not used by the countries

Mas-ship

Funded by the United Nations Environment's Sustainable Buildings and Construction programme of the 10 Year Framework Programme. MaS-SHIP has produced a comprehensive data framework, tools, evidence-based knowledge, insights and policy recommendations for mainstreaming sustainable social housing in India.

MaS-SHIP created a framework of 18 attributes in collaboration with developers, practitioners and academics to measure the performance of 17 established and emerging building systems, against four criteria, including resource efficiency, operational performance, user experience, and economic impact. The findings were collated into catalogues for each material, while the methodology for calculating the mix of qualitative and quantitative attributes were developed into a new data framework.

A key output from MaS-SHIP research has been the creation of the Decision Support Toolkit (DST), an interactive and online toolkit comprising a range of outputs, datasets, tools and insights that can help prospective users in choosing sustainable building materials and making and monitoring sustainable design interventions and construction practices in social housing projects. The DST not only addresses the absence of a comprehensive measurement framework to assess sustainable materials, but also includes design guidelines to ensure sustainability is embedded at the conception stage of a housing project. Through the development of a Sustainability Assessment Tool (SAT), it fills missing data that is needed to quantify the performance, and using Material mapping application, spatially maps the availability of sustainable building systems options. As a key component of the DST, SAT has the capability to measure the relative performance of building materials and systems for social housing projects that do not exceed four stories, using the framework of 18 attributes. Filling these knowledge gaps can assist in prioritizing sustainability considerations in housing policy and implementation.

Funded:

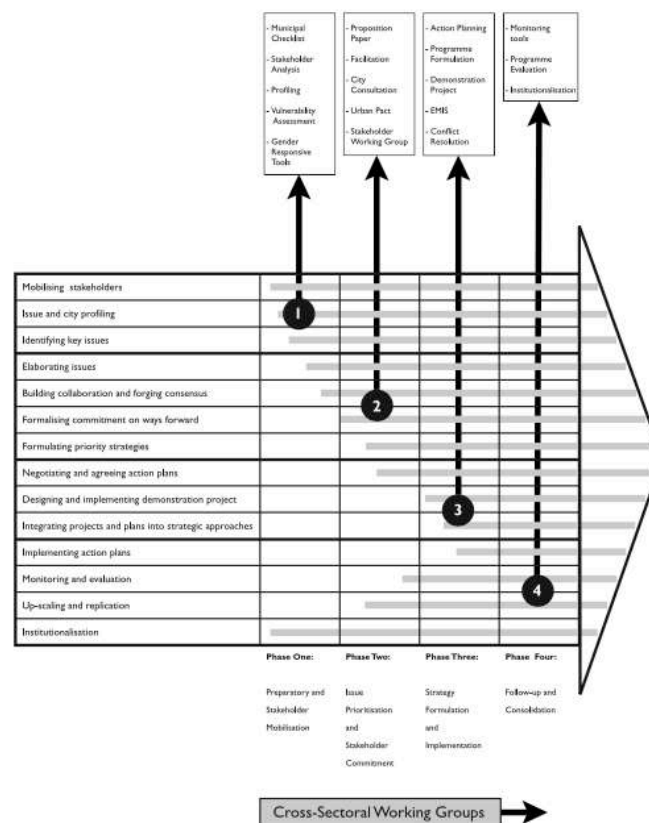


Project partners:



Methodology

The full project consists of the Decision Support Toolkit (DST), technology catalogues, Sustainable Assessment Tool (SAT), case study reports and policy briefings. The MaS-SHIP website hosts the DST and the policy briefings arising Decision Support Toolkit (DST) which not brings together all the outputs from the project in an interactive manner, but also provides design guidelines to enable the adoption of sustainable design by housing providers at the conceptual stage of housing projects.



● Participatory Decision Making Tools

- The **Decision Support Toolkit DST** brings together all the outputs from the project in an interactive manner, it also provides design guidelines to enable the adoption of sustainable design by housing providers at the conceptual stage of housing projects.
- Technology catalogues** have been prepared to provide empirical data for 17 selected building materials and systems against the 18 sustainability attributes identified in MaS-SHIP.

- **Sustainability Assessment Tool (SAT)** is an online excel tool in DST that performs comparative assessment of the performance of 17 building systems against the 18 sustainability attributes.
- **Case study reports** describe the findings of the resident surveys on user experience with building systems in five social housing developments.
- **Policy briefings** on mainstreaming sustainability in social housing projects.

The key of DST research was the selection of attributes that can be used for categorizing the sustainability performance of a building, through its materials and systems. This enabled a comparative evaluation for its application to affordable housing projects. The following are the 18 attributes selected after the

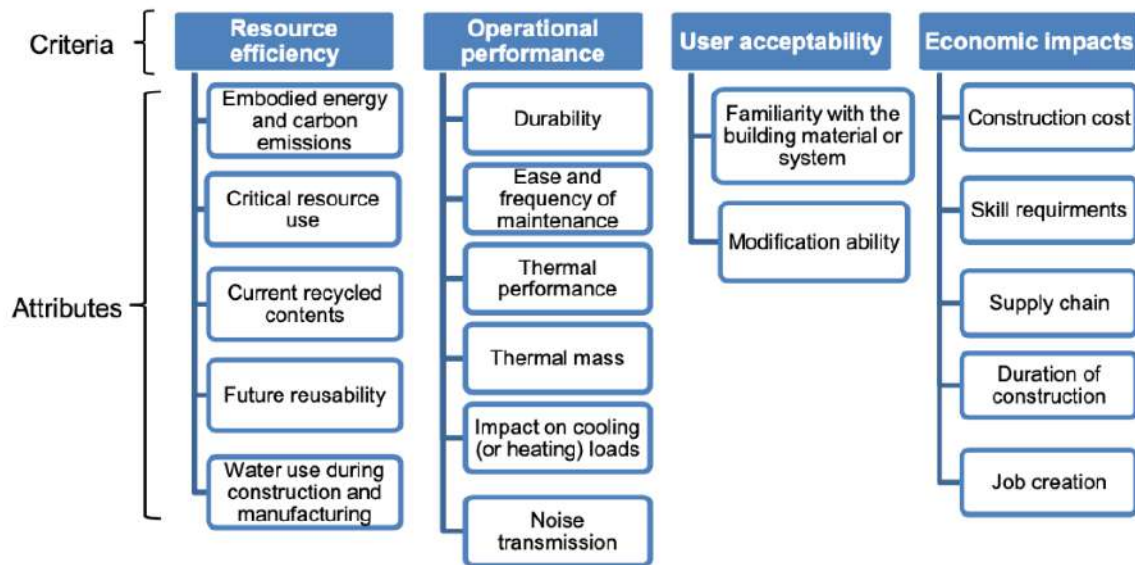


Figure 6: Final list of attributes

The different attributes are weighted through a hierarchy structure and the assessment of 184 industry experts through a survey consultation process.

Table 6: Sources of material level data

		Resource Efficiency					Operational Performance					User Experience		Economic Impact					
	Materials	1. Embodied energy	2. Critical Resource use	3. Current recycled content	4. Future reusability	5. Water use	6. Durability	7. Ease and frequency of maintenance	8. Thermal performance	9. Thermal mass	10. Impact on cooling (or heating) loads	11. Noise transmission	12. Familiarity with the material	13. Modification ability	14. Construction cost	15. Skills requirement	16. Supply chain	17. Duration of construction	18. Job creation
	Units	MJ/Sq. M	Index	HML	HML	Litre/sq m	HML	HML	W/ m²K	kg/m²	kW/m² /Yr	dB	HML	HML	INR/ Sqm	HML	HML	sqm/ day	Mandays/ m²
Material	Concrete, Coarse Aggregate, Sand, Steel, Aluminium, EPS, fibre board																		
	Clay Brick																		
	Fly-Ash brick																		
	Solid Concrete Block																		
	Hollow concrete block																		
	AAC Block																		
	CSEB																		
	Ferrocement channel																		
Component	Stone-crete block																		

Tier 1	Tier 2	Tier 3	No data	Not Applicable
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Table 7: Sources of component and system level data

			Resource Efficiency					Operational Performance					User Experience		Economic Impact							
		Materials	1. Embodied energy	2. Critical Resource use	3. Current recycled content	4. Future reusability	5. Water use	6. Durability	7. Ease and frequency of maintenance	8. Thermal performance	9. Thermal mass	10. Impact on cooling (or heating) loads	11. Noise transmission	12. Familiarity with the material	13. Modification ability	14. Construction cost	15. Skills requirement	16. Supply chain	17. Duration of construction	18. Job creation		
		Units	MJ/Sq. M	Index	HML	HML	Litres/sq m	HML	HML	W/m ² K	kg/m ²	kW/m ² /Yr	dB	HML	HML	INR/Sqm	HML	HML	sqm/day	Mandays/m ²		
Building System	Walling	English-bond brickwork (clay work)																				
		Fly-Ash brick work																				
		Rat-trap Bond brickwork																				
		Solid concrete block masonry																				
		Hollow concrete block masonry																				
		AAC block masonry																				
		Stone-crete blocks masonry																				
		CSEB walling																				
	Roofing	Ferro Cement channel roofing																				
		RCC Filler Slab roofing																				
		Reinforced Brick Panel roofing																				
		Pre-cast RCC Plank & Joist roofing																				
		Reinforced EPS Core Panel System																				
		GFRG Panel System																				
		LGSFS-ICP																				
		Precast Large Concrete Panel system																				
		Integrated	Monolithic Concrete Construction																			

Overall preferences under sustainability criteria play a major role in the selection of appropriate building materials and systems for social housing projects. The former comparison suggest that the building system

might perform well respect to material resources efficiency, but lack on operational performance or job creating. Finding the balance and a tailored assessment of each project is essential.

SWOT Analysis

Strength

- Holistic approach to sustainability in building and construction
- Assessment of the whole value-chain
- Self-assessment Design and already built projects
- No cost
- Little technical knowledge
- Co-created by UN-Habitat and One Planet project

Weakness

- No feedback to the user
- No certificate
- No indications to improve
- Interactive tool developed by Roofing and Walling system,
- Online tool not working or accessible

Opportunity

- Complement with feedback
- Reshape it and elevate it
- Escalate it with the feedback of other country projects

Threat

- Not useful or impactful, remains an only India focused project.

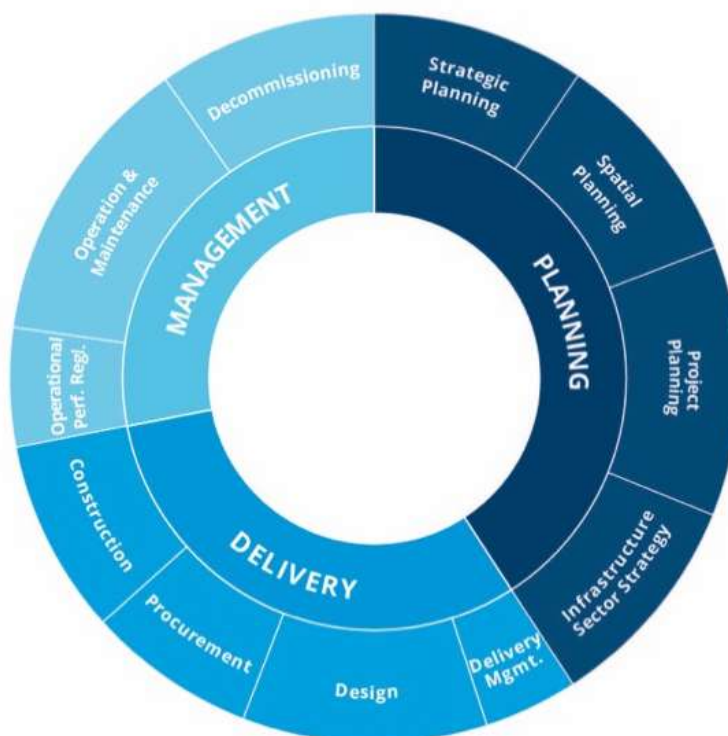
CAT-I

The Capacity Assessment Tool for Infrastructure (CAT-I) is one of several tools and publications developed by UNOPS that improves its ability to support partners develop sustainable, resilient, and inclusive infrastructure. It does this by gathering evidence on the capacity of the enabling environment to plan, deliver, and manage infrastructure, including buildings and housing.

The aim of CAT-I is to assess the challenges in the enabling environment so that needs can be identified and therefore potential solutions created.

The specific objectives of the CAT-I are to:

- Identify challenges in the enabling environment to plan, deliver, and manage infrastructure, including buildings and housing
- Support the identification of potential solutions to enhance the enabling environment
- Create a pipeline of programmes and projects to enhance the enabling environment
- Create a common language and framework for the infrastructure enabling environment
- Show progress against a measured baseline to understand impact



CAT – I Assessment Framework

Partners

Developed by UNOPS and first projects assessed in coordination with the governments of Serbia, Nepal and Brazil.

Methodology

The methodology used to complete the CAT-I assessment are summarised in Figure 3 and explained in the following sections.

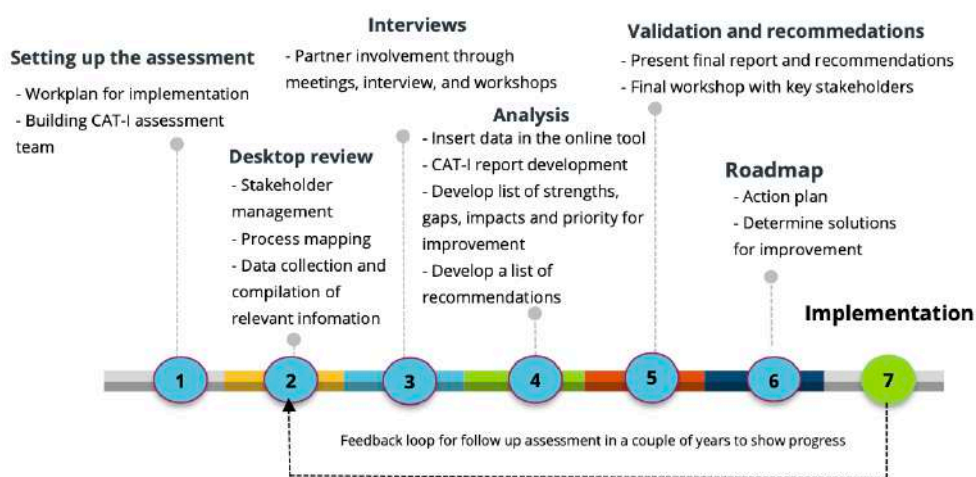


Figure 3: Step-by-step process to implement CAT-I ©UNOPS

Setting up the assessment

The purpose of the first stage in the assessment is to determine the overall scope, objectives, timelines, and resources needed to run the assessment. In order to define a boundary for the assessment, clear objectives need to be identified by users and key assessment participants. These should be identified in collaboration with government partners.

Desk-top review

The second stage in the assessment process is the desk-based review. It is composed of: 1) Stakeholder mapping; 2) Government structure mapping; 3) Infrastructure process mapping; and 4) Data collection and compilation of relevant information

The findings during the desktop review stage will provide the foundation for the assessment with key stakeholders. At this stage of the assessment, it is recommended to start collecting data and information on the capacity of the enabling environment to plan, deliver, and manage its infrastructure systems and to **start filling out the online tool**.

Interviews

During desk top review the assessment team will need to identify key stakeholders to be consulted for the next stage of the assessment. The interview is a fundamental step of the CAT-I assessment. At this stage, assessment data will be collected from key informant interviews and workshops with government officials and other key stakeholders. Data collected during this stage should be cross-referenced to the key infrastructure development documents found in the desk top review that need to be validated by data collected from other third party sources. It will also be used to collect information that is missing from the desktop review so that it can be added to the online platform.

Analysis

The purpose of the analysis stage is to understand where the challenges are in the enabling environment to plan, deliver, and manage infrastructure. Once all the information has been collected the user should use the online platform to assess where the gaps in capacity are located. The scoring should be completed while considering inputs and views from infrastructure experts (in addition to comparing against the best case examples embedded in the tool). It is also important to include the expertise of the local team and government partners to allow a balanced view of the assessment for the given context. The CAT-I diagrams and additional analysis tools located in the online tool provide visuals to support the identification of challenges. The findings from this process along with possible solutions and recommendations are presented to the government and important stakeholders during the next stage.

Validation and recommendations

The fifth stage of the assessment process is to produce a concisely written summary of the findings from the assessment. The report will include key findings and recommended actions. These findings will be used to create a roadmap with partners on how best to enhance the enabling environment which will provides the evidence behind proposals for capacity building programmes and projects.

The validation workshop with government officials and other key stakeholders will need to be organised by the assessment team to validate and approve the findings from the assessment. This will be done to agree whether or not the scores adequately represent the current snapshot of the challenges within the enabling environment to plan, deliver, and manage infrastructure.

Roadmap

Based on the final workshop discussions, the assessment team will then use the information to create a prioritised list of challenges along with recommended actions. This can then be used to create roadmap of programmes to enhance the enabling environment.

Implementation

The programmes and projects which receive funding will be implemented during this stage.

Reassess

Following completion of the initiatives it is suggested that a follow up assessment is completed to measure improvement and identify new priority actions for enhancement of the enabling environment. This can be done several years later or as identified by the local partner.

SWOT Analysis**Strength**

- Life-cycle based approach to infrastructure and construction
- Can be completed either as a self-assessment in partnership with UNOPS or completed using UNOPS experts
- Can be completed as part of a capacity building program as best practice is built into the tool
- Global assessment criteria, rolled-out in several countries

Weakness

- Not specifically assessing sustainable housing though it can be used this way with some tweaks

Opportunity

- Complement with feedback
- Expand to sustainable construction or housing
- Looking to create a shorter version that is specific to climate mitigation

Threat

- Too detailed for a rapid assessment

Appendix 6. Focus on SDG12 for the selected assessment tools and methodologies Sherpa, DST and CAT-I

The previous tools will be selected in relation to their emphasis on resource efficiency (SDG12) in the buildings life cycle - planning, design, procurement, construction, operation, maintenance, and decommissioning - with a specific focus on the materials, the Joint Programme is aiming for a strategic advance on the implementation of the 2030 Agenda, as well as the national commitments made under the Paris Agreement focusing on sustainable, resource efficient housing.

Overall, the aim of this Joint Programme proposal is to offer a strategic approach for the UN to help countries in addressing resource efficiency by focusing on improving the sustainability of buildings and their impact on the environment, in particular but not only on carbon emissions. This will be achieved through fostering the transformation of the buildings and construction sector; being one of the sectors with the biggest potentials to strive for sustainable consumption and production, along with food production. The sustainability approach of the New Urban Agenda englobes sustainability from 4 pillars, social, cultural, economic and environmental sustainability. This global approach is related to the impact in the housing sector of building life cycle and the analysis and mapping of the value chain to understand the construction value as requested by the 4th UN Environment Assembly, the International Resource Panel and the One Planet network.

Main SDG targets to be addressed by the Joint Programme

- 12.2. By 2030, achieve the sustainable management and efficient use of natural resources
- 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- 11.1 and 11.c on adequate and sustainable housing and sustainable construction materials.
- 17.7 Promote the development, transfer, dissemination, and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

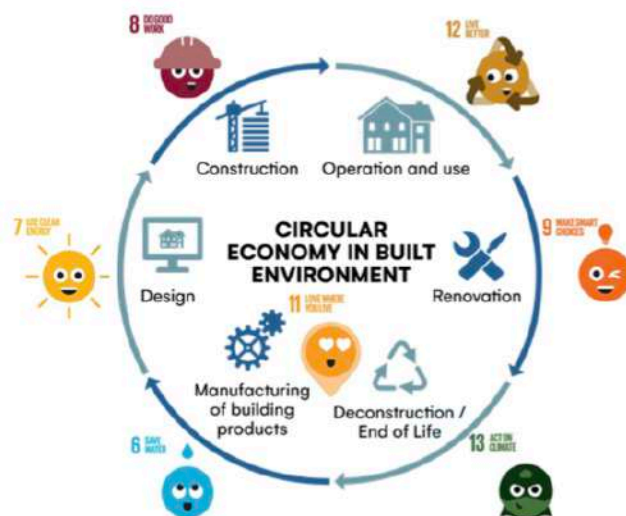


Figure 6: Circular lifecycle of buildings

Source: Adapted from Ministry of Environment, Finland



One Planet Sustainable Buildings and Construction Programme, SBC Programme