

GEF-8 PROJECT IDENTIFICATION FORM (PIF)

TABLE OF CONTENTS

GENERAL PROJECT INFORMATION	3
Project Summary	4
Indicative Project Overview	4
PROJECT COMPONENTS	4
PROJECT OUTLINE	9
A. PROJECT RATIONALE	9
B. PROJECT DESCRIPTION	22
Project description	22
Coordination and Cooperation with Ongoing Initiatives and Project	35
Core Indicators	40
Risks to Project Preparation and Implementation	44
C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES	49
D. POLICY REQUIREMENTS	49
Gender Equality and Women’s Empowerment:	49
Stakeholder Engagement	50
Private Sector	55
Environmental and Social Safeguard (ESS) Risks	56
E. OTHER REQUIREMENTS	56
Knowledge management	56
ANNEX A: FINANCING TABLES	56
GEF Financing Table	56
Project Preparation Grant (PPG)	56
Sources of Funds for Country Star Allocation	57
Indicative Focal Area Elements	57
Indicative Co-financing	57
ANNEX B: ENDORSEMENTS	58
GEF Agency(ies) Certification	58
Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):	58
ANNEX C: PROJECT LOCATION	58
ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING	59
ANNEX E: RIO MARKERS	60
ANNEX F: TAXONOMY WORKSHEET	60

General Project Information

Project Title

Eliminating hazardous chemicals from the supply chain of the construction sector in Morocco

Region

Morocco

GEF Project ID

11428

Country(ies)

Morocco

Type of Project

FSP

GEF Agency(ies):

UNIDO

GEF Agency ID

230238

Executing Partner

To be determined

Executing Partner Type

Others

GEF Focal Area (s)

Chemicals and Waste

Submission Date

10/18/2023

Project Sector (CCM Only)

Taxonomy

Communications, Stakeholders, Knowledge Exchange, Capacity, Knowledge and Research, Influencing models, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Demonstrate innovative approaches, Trade Unions and Workers Unions, Civil Society, Academia, Partnership, Type of Engagement, Consultation, Participation, Information Dissemination, Private Sector, Individuals/Entrepreneurs, SMEs, Beneficiaries, Gender Equality, Gender Mainstreaming, Women groups, Sex-disaggregated indicators, Gender-sensitive indicators, Gender results areas, Awareness Raising, Knowledge Generation and Exchange, Capacity Development, Knowledge Generation, Workshop, Innovation, Learning, Indicators to measure change, Theory of change, Adaptive management, Conference, Field Visit, Focal Areas, Chemicals and Waste, Persistent Organic Pollutants, Unintentional Persistent Organic Pollutants, New Persistent Organic Pollutants, Industrial Emissions, Waste Management, Strategic Communications, Behavior change

Type of Trust Fund

GET

Project Duration (Months)

60

GEF Project Grant: (a)

6,000,000.00

GEF Project Non-Grant: (b)

0.00

Agency Fee(s) Grant: (c)

570,000.00

Agency Fee(s) Non-Grant (d)

0.00

Total GEF Financing: (a+b+c+d)

6,570,000.00

Total Co-financing

42,000,000.00

PPG Amount: (e)

200,000.00

PPG Agency Fee(s): (f)

19,000.00

PPG total amount: (e+f)

219,000.00

Total GEF Resources: (a+b+c+d+e+f)

6,789,000.00

Project Tags

CBIT: No NGI: No SGP: No Innovation: No

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B “project description”. (max. 250 words, approximately 1/2 page)

In Morocco, assessments of housing needs reveal a cumulative need of 3 million housing units by 2030. As a tragic consequence of the earthquake of September 2023, these needs have not just increased, but have also accelerated the timelines for transformation of the construction supply chain in the country. The GEF project will therefore be implemented on a topic of high national interest and be concurrent to the reconstruction efforts. The State, as the primary activity provider of construction companies, will be the leader of any transformation in the sector and is already promoting a reduction of its global impact. At COP27, Morocco launched with France the creation of a “Buildings Breakthrough”, with the aim of bringing the building sector closer to zero emission by 2030. In order to accompany this political will and initiate change, the proposed GEF project will promote a green transformation of the construction supply chain by replacing resource-intensive and hazardous materials with environmentally sound alternatives and promoting circular approaches and regenerative designs across the entire supply chain. The construction industry will be encouraged through regulatory and green public procurement incentives to shift towards transformative building techniques, reduce consumption of materials and energy in buildings and eliminate the use of hazardous chemicals. This will result in a reduction of GHG emission from the sector, land degradation from waste and environmental and health-related consequences of use of chemicals.

Indicative Project Overview

Project Objective

To promote a green transformation of the construction supply chain by replacing resource-intensive and hazardous materials with environmentally sound alternatives and promoting circular approaches and regenerative designs across the entire supply chain.

Project Components

1. Policy strengthening by integrating a life-cycle approach into the existing legislative framework to encourage certified green materials use, demand for sustainable alternatives and efficient production processes

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
850,000.00	5,950,000.00

Outcome:

1.1 Enhanced policy and regulatory framework to encourage certified green building and demand for environmentally sound construction.

Output:

- 1.1.1. The life cycle approach and use of LCAs is integrated in the decision making process on construction materials and techniques
- 1.1.2. Mechanisms are in place to regularly harmonize the regulations related to building codes with chemicals databases
- 1.1.3. Regulations related to traceability of materials are strengthened for the use of material labeling, building labeling and green labeling.
- 1.1.4. Policy tools including green public procurement and financial mechanisms (e.g. EPR schemes, guarantee funds etc.) are developed to promote green materials, gender-responsive policies and sustainable practices
- 1.1.5. Behavioral change is incentivized by taking into account gender factors and investment from companies is promoted with eco- labeling, standards and certification for sustainable practices

2. Capacity- building and awareness raising

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
550,000.00	3,850,000.00

Outcome:

- 2.1. Strengthened capacities to promote and facilitate the use of alternative materials and regenerative designs

Output:

- 2.1.1. Capacities of the public sector on LCAs and green public procurement are strengthened for effective use in the decision-making process
- 2.1.2. Sectoral technical guidelines are developed to support alternatives to materials from the supply chain containing hazardous chemicals
- 2.1.3. Curricula on sustainable, net-zero and regenerative designs are available for public planners and architects
- 2.1.4. Technical knowledge of the Project is disseminated amongst the general public, decision makers and experts of the sector through targeted outreach including gender specific communication.

3. Transformation of the supply chain with regenerative designs, innovative materials and cleaner processes

Component Type	Trust Fund
Investment	GET
GEF Project Financing (\$)	Co-financing (\$)

3,100,000.00	19,600,000.00
--------------	---------------

Outcome:

3.1. Non-renewable and hazardous materials eliminated from the supply chain and processes transformed

Output:

3.1.1. Selected non-renewable and hazardous materials eliminated from the supply chain, including through increased use of nature-based alternatives

3.1.2. Enhanced sustainability of conventional construction materials shifted through cleaner, resource efficient production processes with reduced energy consumption and emissions

3.1.3. Construction techniques and buildings are resource and energy-efficient by innovating in passive house standard modular buildings, hybrid buildings and building techniques based on traditional and local knowledge

4. Knowledge management and access to finance

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
900,000.00	6,300,000.00

Outcome:

4.1. Innovation is driven by global collaboration and unlocked access to finance

Output:

4.1.1. Incubators are promoted to unlock finance for SMEs, piloting alternative materials, green materials or innovative building techniques

4.1.2. Local actors are connected to global knowledge platforms to enhance the use of available tools, disseminate local solutions and connect ethical material suppliers

4.1.3. Business to Business promotional events to exchange best practices and technologies, and establish business linkages, technology cooperation and transfer of eco-innovative solutions.

4.1.4. Corporates and local investment banks are connected to regional or global financing institutions to promote existing mechanism and evaluation criteria including gender-responsive finance for green investment

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
300,000.00	4,200,000.00

Outcome:

5. 1. Project implementation based on results-based management (RBM) and lessons/good practices documented and disseminated

Output:

5.1.1. RBM system and adaptive management promoted through capturing key results of the project

5.1.2. Gender mainstreaming action plan and environmental and social management plan elaborated and implemented

5.1.3. Gender- Sensitive Project Monitoring & Evaluation Plan in place

5.1.4. Mid-term review and terminal evaluation conducted

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
1. Policy strengthening by integrating a life-cycle approach into the existing legislative framework to encourage certified green materials use, demand for sustainable alternatives and efficient production processes	850,000.00	5,950,000.00
2. Capacity- building and awareness raising	550,000.00	3,850,000.00
3. Transformation of the supply chain with regenerative designs, innovative materials and cleaner processes	3,100,000.00	19,600,000.00
4. Knowledge management and access to finance	900,000.00	6,300,000.00
M&E	300,000.00	4,200,000.00
Subtotal	5,700,000.00	39,900,000.00
Project Management Cost	300,000.00	2,100,000.00
Total Project Cost (\$)	6,000,000.00	42,000,000.00

Please provide justification

(Note on budget: PMC is 5.2 %) The construction sector is one of the heaviest users and emitters of GHG emissions and toxic chemicals included in the Stockholm and Minamata Convention, but one which has been most difficult to reduce the emissions from. As such, it has been identified among the priority sectors of SAICM under the emerging policy issues. The growth of the construction sector in Morocco mirrors the expected global growth, with increased urbanization and infrastructure construction. For example, assessment of cumulative housing needs in Morocco reveal 3 million housing units should be constructed by 2030. As a

tragic consequence of the earthquake of September 2023, these needs have not just increased, but have also accelerated the timelines for the necessary transformation of the construction supply chain in the country. The GEF project will therefore be implemented on a topic of high national interest and be concurrent to the reconstruction efforts. The State, as the primary activity provider of construction companies, will be the leader of any transformation in the sector and is already promoting a reduction of its global impact. In 2021, the distribution of housing produced showed that construction of social housing represented 41% of the overall construction projects. In order to accompany this political will and initiate change, the proposed GEF project will promote a green transformation of the construction supply chain by facilitating the replacement of resource-intensive and hazardous materials with environmentally sound alternatives and promoting circular approaches and regenerative designs across the entire supply chain. This will be done based on life cycle approach to chemical and material use in the supply chain, that will encourage environmental performance improvements in the construction industry through introduction of green construction standards. Regulatory and green public procurement incentives will be designed to further motivate the sector industry to shift towards transformative building techniques, reduce consumption of materials and energy in buildings and eliminate the use of hazardous chemicals. This will result in a reduction of GHG emission from the sector, land degradation from waste and environmental and health-related consequences of use of chemicals. The project will support innovation in the construction materials and transition towards nature-based solutions that can also significantly reduce the impact of the sector, both for chemicals use and GHG emissions, and support adaptation solutions to reduce the impact of increased temperature in cities. This could lead to a considerable reduction in the use of heating, ventilation and air-conditioning (HVAC) as well as lighting for the buildings, facilitating the introduction of design approaches such as the Passive House standard. Furthermore, with greater material efficiency in design and construction, the demand for steel and cement in buildings in 2060 could be almost 40% lower than in a Reference Scenario. But innovative techniques and technologies that enable such efficiency are lacking at the moment. This is will be the target of the project through enhanced capacity building for architect and designer curricula, knowledge dissemination platforms and industry demonstration pilots. The proposed GEF project would greatly benefit from international and regional cooperation fostered by this initiative, and would use the presence of global actors to further disseminate tools, knowledge and investment applied to green all sectors of the supply chain.

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

Global environmental problems related to the construction supply chain

With increasing population and urbanization, almost 75% of the infrastructure that will exist in 2050 has yet to be built, causing the rapid expansion of the construction industry and resulting opportunities to improve its impact on the environment, human health and transition towards a low carbon future.

Global construction industry is the world's largest consumer of raw materials, and is projected to grow in the decades to come, due to rapid expansion in infrastructure of the emerging and development economies. The construction sector is also one of the heaviest users and emitters of toxic chemicals included in the Stockholm and Minamata Convention, and has been identified as a priority sectors of SAICM under the emerging policy issues.

Building products encompass a diverse range of energy intensive materials in different applications, such as steel, and concrete, but also plastic and polymer materials in insulation foam, epoxy resins, paints, solvents, textile etc. These materials are often a complex composition of individual chemical constituents, some of which exhibit hazardous effects on the environment and human health, including negative effects on workers of the sector and occupants of dwellings. Hazardous materials found in construction materials include lead, mercury, cadmium, asbestos, formaldehyde, volatile organic compounds (benzene, toluene, xylene), and POPs listed in Annexes A and B of the Stockholm Convention (HBCDD, PBDEs, SCCPs and PFAS). Manufacturing certain construction materials is problematic due to their high consumption of fossil fuels, land degradation, and greenhouse gas emissions. Construction material industries can also release unintentional POPs like dioxins and furans listed in Annex C of the Stockholm Convention. Critical issues associated with dangerous chemicals in construction materials include occupational health risks for workers, indoor air quality, environmental contamination and land contamination.

While the construction sector is responsible for a large share of CO₂ emissions globally (36% of final energy use and 39% of energy and process-related CO₂), it is also recognized as one of the most difficult industries to decarbonize. However, with greater material efficiency in design and construction, the demand for steel and cement in buildings in 2060 could be almost 40% lower than in a Reference Scenario. Innovation in the construction materials and transition towards nature-based solutions can also significantly reduce the impact of the sector, both for chemicals use and GHG emissions, and support adaptation solutions to reduce the impact of increased temperature in cities. This could lead to a considerable reduction in the use of heating, ventilation and air-conditioning (HVAC) as well as lighting for the buildings, emulating the design approaches used for the Passive House standard.

The unprecedented rate of urbanization that is projected to happen in Africa by mid-century will greatly increase the demand for materials. Cement production is expected to triple, and steel production will increase more than sixfold. If no intervention is made to address the unsustainable practices in the construction sector, the future will be marked by worsening environmental degradation and resource depletion due to increase of raw material use,

energy use, CO₂ emissions and toxic chemical emissions. Despite the upcoming challenges and the volume of material flow expected in the coming decades, most countries in the region still face many challenges related to data availability, regulations, sustainable financing, standards for sustainability and innovation.

In Morocco, this trend is favored by the implementation of incentive measures to revitalize the housing sector, programs for the construction of new cities, social housing programs, the eradication of slums and now, the reconstruction programme for the areas affected by the earthquake of 8 September 2023. The strong role of the Governmental entities in this effort enables it to have good leverage on greening the sector, through mechanisms such as green procurement. On average, between 2011 and 2021, 130,000 housing units have been produced per year in Morocco. In 2021, the distribution of housing produced showed that construction of social housing represented 41% of the overall construction projects. In 2020, new housing units covered 3,090,000 m², while construction of commercial buildings used 1,068,000 m² and industrial buildings 580,000 m². As part of the latest housing survey carried out by the supervisory ministry, an assessment of housing needs by city was carried out by 2030; this evaluation took into account both housing deficits, additional households and dilapidated stock. The study revealed a cumulative need of 3 Million housing units¹. The initial survey after the earthquake reveals immediate needs for 50,000 housing units in the affected areas; the Government already highlighted that the reconstruction programme will be aligned with efforts to green and decarbonize the sector.

At COP26 in 2021 in Glasgow, the UK launched the 'Breakthrough Agenda' aiming at decarbonising the main emitting sectors. Building up on this initiative, in 2022 at COP27 in Sharm El-Sheikh, Morocco and France jointly launched a call for the creation of a 'Buildings Breakthrough', with the aim of bringing the building sector closer to zero emissions by 2030. More than 30 countries have currently expressed great interest in this enhanced intergovernmental cooperation, and 12 have already pledged their support for this initiative, which puts Morocco at the forefront of a low carbon and sustainable construction sector. The proposed GEF project would greatly benefit from international and regional cooperation fostered by this initiative, and would use the presence of global actors to further disseminate tools, knowledge and investment applied to green all sectors of the supply chain.

Construction sector in Morocco

The construction sector in Morocco encompasses manufacturing processes and services related to development, engineering, materials production, renovation, demolition and construction of buildings and infrastructure.

The number of companies operating in the sector is estimated at 60,000, although only a limited number is registered companies. According to the National Federation of Building and Public Works (FNBTP), the number of registered companies in the building and public works sector is close to 6,000, creating almost 1,207,000 jobs in 2021, which represents 9% of the national population in employment.

The informal sector is focused mainly on building work such as masonry and finishing works (electricity, painting, glazing, aluminum and wood carpentry, ironwork, etc.). In the private housing segment, self-construction represents half the units built annually. Modern and structured companies are concentrated in large cities such as Casablanca, Rabat, and Tangier. They are active in construction, urban development, and public works. They work primarily on behalf of the State, local authorities, and significant public developers. **The State is the primary activity provider of these companies since 80% of public contracts are dedicated to the building and public works**

sector, revealing the strong leverage the Government has in introducing transformative measures in the construction sector.

The impact of this sector on the resources of the Government and local authorities is significant since it contributes in a substantial proportion to its tax resources. Other taxes affect this sector, such as the notarial tax and the tax on cement, which is used to supply the Housing Solidarity Fund.

Analysts predict that the construction sector should develop further in the coming years despite the stagnation it experienced following the COVID crisis in 2020. This development will be favored by demographic growth, the implementation of incentive measures to revitalize the housing sector, programs for the construction of new cities, social housing programs, and the eradication of slums.

The latest housing survey carried out by the Ministry responsible of Habitat, an assessment of the housing needs until 2030 was carried out. This assessment took into account housing deficits, additional households and dilapidated housing stock. It revealed a cumulative need for almost three (3) million homes (2,905,395), broken down in the table below (See Annex H, for figure 1).

The disastrous consequences of the recent earthquake that hit Morocco in September 2023 have drastically increased these needs, for the region of Marrakech in particular. The initial estimates made by the Government following the earthquake indicate an immediate need of 50,000 housing units to be rebuilt. The Project will take stock of the situation and provide figures taking into account the reconstruction plans of Morocco in regions, which were most affected by the earthquake. Reconstruction plans and strategies will also be properly evaluated as part of the regulations and institutional gap assessment, with particular focus on supporting the green public procurement component.

Production of buildings in Morocco: trend towards sustained growth and larger climate and environmental impact

Housing

The last ten years have recorded the production of approximately **130,000 housing units on average per year** between 2011 and 2021. [The distribution of housing produced in 2021 shows that social housing operations \(<250,000DH\) absorb 41% of production, followed by self-construction with 35% and medium and high-standing operations with 17%.](#)

Infrastructure and commercial projects

In addition to housing production, Morocco has embarked over the last decades on a number of industrial projects, in order to accelerate its industrial development as well as its regional and global presence. Planning of

these infrastructure projects has been a major catalyst for the construction sector and have a major contribution to the development of new buildings.

The construction of commercial and industrial buildings reached 2,199,000 m² of floor space, and administrative buildings 1,457,000 m² of floor space. Land use was respectively 1,068,000 and 580,000 m² for each of these categories. (Source: Annuaire du Maroc 2022, High Commission for Planning.)

Integration in trade

The building materials sector in Morocco includes a large number of production and processing units, as well as finishing and technical products. In addition to a large and varied national production, there is a highly diversified and competitive trade.

Over the period 2010 - 2021, imports of construction materials represented an average of 4.2% of Morocco's total imports.

The evolution of imports in the construction materials sector concerns all products, mainly: ceramic products, pipe fittings and metal construction, and works in stone, plaster, cement or similar materials. These three products accounted for 32% of total imports in the building materials sector in 2021.

An analysis of the construction materials industry's imports showed that imports are mostly from Spain (25%), France (9%), Italy (10%), China (14%) and Turkey (11%). These five countries account for 69% of total Moroccan imports in this sector.

The evolution of exports in the construction materials sector concerns all products, mainly: cement, lime and plaster products, crockery products and miscellaneous ceramic objects, and pipe fittings and metal construction products. These three products account for 42% of total exports in the building materials sector in 2021.

Over the period 2010-2021, exports were made towards five main countries: Spain, France, Mauritania, the United States of America and Côte d'Ivoire. These five countries will account for 60% of total Moroccan exports in this sector in 2021, compared with 56% in 2010 (see charts on export trends of the main construction materials in Annex H, Charts 1, 2 and 3)

Breakdown of materials from the construction supply chain including review of environmental, health and climate change related issues

Cement

Morocco has 12 cement plants located across the country in Meknes, Fez, Tetouan, Settata, Bouskoura, Oujda, Safi, Agadir, Marrakech, Ben Ahmed, Beni Mellal, and Temara, with a total production capacity of more than 21, 6 million tons per year. There are also six grinding centers (Tangier, Nador, Laayoune 1 and 2, Tarfaya, and El Jadida). The actual production of cement is closely linked to the building market and public works projects; **it was 12,486,732 tonnes in 2022 against 13,974,900 tonnes in 2021.**

Four operators share the cement market in Morocco: Lafarge Holcim Morocco with 54% market share; *Ciments du Maroc* with 24%; *Ciments de l'Atlas* with 14%; and Asment de Temara with 8%. The sales segmentation 2021 was approximately as follows: distribution 62%, ready-mixed concrete 20%, precast and concrete articles 9%, building 4%, and infrastructure 5%.

All cement plants in Morocco use the dry process with rotary kilns to transform limestone into clinker. The majority of cement plants use pet coke as fuel and are making efforts to replace it with less expensive alternative fuels such as shredded tires, used oils, and household waste. The use of alternative fuels is only limited by the quantities available (sorted household waste and imported used tires). See chart 4 on percentage change in cement production in Annex H.

Rebar and welded mesh

Rebar and wire rods are products produced by the steel industry. Steel production is obtained in Morocco from scrap metal and iron reduced in an electric arc furnace. After their production, the steel undergoes a series of finishing treatments: continuous casting, hot rolling, cold rolling, wire drawing, peeling, chemical pickling, coating, etc. The main finished products for construction are rebar, welded mesh, and profiles. Morocco's iron and steel sector has eight industrial operators whose production is, on average, 1,250,000 tonnes per year and 250,000 to 400,000 tonnes per year of wire rod. In Morocco, **all the steel produced comes from the recycling of scrap metal imported partly from abroad.** According to ASM, the energy consumed by this sector in Morocco is 80% electrical and 20% fuel oil.

According to the International Energy Agency, the steel sector emits around 1.4 tons of CO₂ equivalent per ton of steel due to fuel and electricity consumption. Based on this emission factor, we can estimate that the construction sector's greenhouse gas emissions related to the steel industry are approximately 2,200 Gg CO₂ equivalent.

Bricks and tiles

In Morocco, the production of bricks and tiles started in the 1940s. Data from the Ministry of Industry shows that in 2021, **73 clay tile and brick manufacturing industries concentrated in regions rich in clay deposits, such as Tangier, Tetouan, Nador, Meknes, and Settata.** About half of the brickyards have air pollution control means. In contrast, **others use artisanal techniques and often use biomass, such as olive pomace, for their energy needs,**

which results in significant air pollution. Production in 2021 is approximately 3.5 million tons per year, with an annual capacity of 5 million tons.

The actual energy consumption of the industrial lines varies from 1.4 to 2.7 MJ/kg, according to an energy balance carried out in 2006 by experts from Hemel Hampstead (GB). Based on an average specific consumption ratio of 2.1 MJ/kg, the tiles and bricks sector consumes around 175,000 tons of oil equivalent (7 350 TJ/year). Brick and tile production emits about 478 gG CO₂ eq./year, based on an emission factor of 65 t CO₂/TJ.

Floor and wall tiles

The tiles branch comprises 23 units with an annual production capacity of 80 million m², but the actual production is around 52 million m² or 700,000 tons/year. **The Moroccan ceramic industry ranks among the top 21 producers in the world, mainly meeting local demand for tiles.** The Moroccan ceramic tile market is around 60 million m², 85% of which is covered by local production. Imports cover an average of 15% of the market, mainly from Spain, Italy, Egypt, and the United Arab Emirates. The total number of employees of the 23 companies in the sector is approximately 4300 people.

The materials used to produce earth tiles are clays extracted from quarries. The energy consumption ratio is around 6 to 7 GJ/ton of ceramic made. The energy consumption of the whole sector would be between 4,200 and 4,900 TJ/year, i.e., the equivalent of 100,000 to 116,000 Toe. The total emissions of GHG are 1300 to 1400 Gg CO₂ per year ²

Ceramics industry

The ceramic industry in Morocco comprises 8 major companies localized in Tangier, Settat, Kenitra, and Casablanca regions, specializing in making sanitary equipment like toilets, lavabos, and baths in ceramic. This industry mainly uses LPG to fire their kilns and dry the shaped products. The main four companies in this sector produce 5 million pieces of sanitary ceramics per year (approximately 150,000 tons). As the specific energy consumption is 7Gj/ton, we can estimate the total energy consumed by this sector (mainly LPG) to 25 000 Toe, and the CO₂ emissions are about 327 Gg CO₂/year.

-

Paints, varnishes and solvents

The paint industry in Morocco includes 8 leading producers, most of which are located in the Greater Casablanca and Center region. They produce architectural coatings, coatings for the automotive industry, and industrial coatings. They make various products for construction and other applications like Vinyl paints, Acrylic paints, Alkyd mat paints, varnishes, Epoxy floor paint, waxes, etc. It is challenging to know the precise composition of these products as they contain various chemical substances, and patents cover

most. However, **this industry generally uses four categories of chemical substances: binders, pigments, solvents, and additives.**

National consumption currently stands at 250,000 tonnes

The main substances used to make the binders are Acrylic copolymers (vinyl acetate and an acrylic ester base), Alkyd polymers (glycerol) with a dibasic acid anhydride and a drying oil, epoxy polymers, phenolic resins, and chlorinated rubber. Solvents used are xylene, toluene, alcohol, and ketones. The pigments may contain Titanium Dioxide (white), Anthraquinone, Benzidine (Yellow), Chrome Oxide (Green), Phthalocyanine (Blue), and carbon black.

The hazardous chemicals that are standard components of paints include benzene, toluene, chlorinated solvents (dichloromethane, trichloroethylene), **xylenes, metals** (cadmium, chromium, and inorganic lead), styrene, Polycyclic Aromatic Hydrocarbons (HAPs), **and aromatic azo dyes. Oil-based paints may also contain pigments of concern**, such as lead chromate, carbon black, titanium, cadmium, and cobalt.

Paint can be a potential health hazard for workers and consumers due to the ingredients and chemicals involved. The main risks are presented below:

- - - **Water-Based Paints:** Recent restrictions regarding these latex paints have reduced solvent emissions but they may still contain low water-soluble solvents like isopropyl alcohol and methyl alcohol. While generally not highly hazardous, **certain pigments like carbon black, cobalt, or cadmium can be of concern.**
 - - **Oil-Based Paints:** once systematically used in commercial and industrial applications, these paints contain many solvents. Typical solvents include acetone, toluene, xylene, and more. **Pigments like lead chromate, carbon black, titanium, cadmium, and cobalt can also be problematic. Faster drying times can increase worker exposure to evaporating solvents,** posing acute or chronic health risks.
 - - **Solvent and emissions of particulates:** Paint operations emit solvents and particulates. Pigments like cadmium, cobalt, lead, manganese, and carbon black can pose exposure risks.
- - - **Resin Type Paints:** Designed to reduce VOC emissions, resin paints contain two components, typically containing isocyanates, which can cause severe respiratory reactions in sensitive individuals. These paints

should be applied in well-ventilated areas with monitoring for isocyanate exposure.

- - **Dry Powder Coating Paints:** Applied to metal parts using a dry powder that adheres when heated, these coatings usually pose minimal risks. However, some dry components like carbon black, cadmium, or silica can be hazardous. **PFAS (some PFAS are POPs) may be added to paints** to improve flow, spread, and glossiness and to decrease bubbling and peeling. **They are also used in specialty paints for stain-resistant, graffiti-proof, and water-repellent properties. PFAS are also used in powder coats.**

Insulation products

Polystyrene is a synthetic polymer made from styrene monomers. It is commonly used as a building material in the form of expanded polystyrene (EPS) and extruded polystyrene (XPS). In some countries, regulations are imposed to add flame retardants to polystyrene. Among the flame-retardants used, **Hexa Bromo Cyclo-DoDecane (HBCDD) and commercial mixtures of Polybromo diphenyl ether (PBDEs) are considered by the Stockholm Convention as POPs** and listed in Annex A with a five-year derogation for their use in the construction sector. As there is no polystyrene production in Morocco, **EPS and XPS are imported**, and generally, there is no easy way to know which flame retardants they may contain.

According to the inventory of HBCDD carried out in Morocco by the Ministry of Energy and Sustainable Development, 30 to 40 tonnes of HBCDD are consumed annually at national level, broken down as shown in Annex H Chart 5.

Other construction materials that may hazardous chemicals

- Perfluoroalkylsulfonyle (PFAS) substances are a large, complex group of synthetic chemicals that have been used in consumer products around the world since the 1950s; this group includes PFOS and PFHS, **primarily used as fire foams and already listed in Annex B and A of the Stockholm Convention.** PFAS, including PFOS and PFHS, have many applications and are ingredients in various everyday products. **The main problem of PFAS is that they leak into the soil, water, and air over time.** People are most likely exposed to these chemicals by consuming PFAS-contaminated water or food, using products made with PFAS, or breathing air-containing PFAS. **Because PFAS break down slowly, if at all, people and animals are repeatedly exposed to them, and blood levels of some PFAS can build up over time.** Their use may be more or less common within any of the following categories:

- Protective coatings for metal sheet roofs, shingles, flashing, and roofing nails. PVDF and FEVE are two fluoropolymers of the PFAS family commonly used in this application.
 - Plasticizer in PVC pipes and tubes manufacturing with SCCP used in the manufacturing process
 - Asphalt shingle granules are sometimes coated with PFAS variants to increase the solar reflectivity of roofs.
 - Wood lacquers and sealers containing PFAS as wetting agents on wood and stain to enhance its resistance and ensure oil and water repellency.
 - Glass and ceramic fixtures such as windows, mirrors, shower doors, bathtubs, and toilets can be coated with PFAS to increase durability, prevent soiling and grime, and provide 'easy to clean' and anti-smudge characteristics.

The table 2 shown in Annex H is a short and non-exhaustive compilation of the other chemicals that could be found in construction materials and the associated risks to human health

Construction waste production and management

Construction waste comes from surpluses and debris from construction materials. It contains:

- Waste from bricks, cement, plaster, earth, stones, metals, wood, paper, plastic, insulation foam, sealing sheets, etc.
- Residues of products used for the implementation of materials like putty, glue, grease, bitumen, oil, etc.,
- Debris from construction materials (falling formwork wood, nails, tie wire, etc.)
- Equipment scrap (cranes, cement mixers, machinery, etc.).

The quantities of waste produced each year in the construction sector (excluding public works) were estimated in 2015 by a GIZ study at 4.9 million tons, of which 89.7% is inert, 9.8% is non-hazardous waste, and 0.5% is hazardous waste.

Despite the legal and institutional framework established by law 28-00 on the management and disposal of waste, construction and demolition waste still needs to be managed and disposed of ecologically. The leading causes are insufficient planning of waste management, lack of sites suitable for the burial of inert and hazardous waste, disorganization of recycling channels, irresponsible waste management by construction companies, and activities of informal operators very active in the waste sector.

The poor management of construction waste and the absence of channels for **the disposal of waste result in their deposit in landfills for household waste, and a large part of the waste stream is eliminated through illegal dumping in uncontrolled areas around towns, in forests, and along wadis.** These practices have consequences on the health of the inhabitants, have harmful effects on the environment, degrade the soils and underground waters, and damage the aesthetics and health security of the population.

The magnitude of the land degradation due to construction waste deposits has never been precisely assessed in Morocco. Still, a simple calculation based on a land use indicator, a heap of 5 tons of construction waste occupies 10 m², allows us **to estimate land degradation at approximately 920 ha per year.**

Open burning of construction waste is also common inside and outside construction sites, emitting harmful toxic gases (CO, NO_x, SO_x, unintentional POPs like HCB, dioxins, and furans) and GHG, mainly CO₂. There is no data concerning this practice, **but 10 to 20% of the construction waste is supposed to be burnt in the open air, approximately 500,000 tons of waste.**

- **Unintentional POPs emissions from the construction material industry**

The production of mineral construction products may result in unintentional POPs emissions, such as dioxins and furans. An inventory of these emissions using the Toolkit 2013 was conducted while preparing the National Implementation Plan for the Stockholm Convention by Morocco (NIP update of 2019). The inventory showed that the total emissions of this sector is 2.12 g TEQ/year, breaking down as follows:

- - - Cement industry: 1.254 gTEQ/year to the air
 - - Lime industry: 0.133 gTEQ/year to the air
 - Bricks and tiles: 0.385 gTEQ/year to the air
 - Ceramics: 0.119 gTEQ/year to the air
 - Other mineral industry: 0.039 gTEQ/year to the air

Pollutants emitted by fuel combustion

As the whole sector of mineral products for construction (cement, plaster, bricks, glass, ceramic) uses fossil fuels, atmospheric emissions depend on the fuel used and operating conditions. There is no specific data concerning the emissions of this sector in Morocco, but the BREF document (2006-bricks and ceramics) gives the typical emissions from fuel combustion, found in table 3 from Annex H

Green House Gases emission and contribution to climate change

The construction materials industry is one of Morocco's top three sectors emitting GHG, with cement, steel, brick and tile, and ceramics production being the most significant contributors. The different sectors contributed as follows:

The **cement sector emitted** in 2018 approximately 4892 Gg of CO₂ eq, i.e., **5% of greenhouse gas emissions for the whole country**, according to Morocco's 3rd updated biennial report within the framework of the UNCCC (2022).

Steel production for construction in Morocco is about 1.5 million tons/year, including 1.2 million tons/year of reinforcing bars and welded mesh. The rest comprises profiles and tubes used for metal construction. By adopting the emission ratio proposed by the “World Steel Association” of 0.83 t of CO₂ eq per ton of steel produced from scrap, the steel sector emits approximately 1248 Gg of CO₂ eq/year.

The **production of bricks and tiles** in 2015 was around 3.5 million tons, with a consumption of 155,000 tons of oil equivalent (mainly LPG). With a ratio of 2900 kg of CO₂/Toe, the total emission of this sector is around 450 Gg of CO₂ eq.

The **ceramics sector** produces about 52 million m² of tiles, around 700,000 tons/year, and consumes about 92,500 toe/year, mainly LPG, which emits about 268 Gg of CO₂ eq.

The **production of sanitary ceramics** is 150,000 tons per year and consumes 25,000 toe, resulting in annual emissions of 72 Gg CO₂ eq.

See graph 1 in Annex H for the percentage of contribution of these subsectors to GHG emissions.

Current barriers to building an alternative scenario and key enablers that could initiate a transformation of the supply chain

Based on the detailed assessment of the sector presented above, a number of barriers can be identified to explain current difficulties in reducing the environmental impact, health impact and climate change contribution of the sector. [The table presents a summary of the barriers that currently hinder the adoption of sustainable material and circular approaches in the construction value chain, as well as key enablers that would transform the sector.](#)

<p>Root barriers and challenges</p>	<p>Key drivers and enablers to achieve an alternative scenario</p>
<p>Lack of data and information on material use and processes of the sector and on the current material flow along the value chain. Tools used to collect information from construction companies and suppliers on the type of materials use are lacking and regulators cannot properly assess the characteristics of materials currently stocked in current buildings. Furthermore, the lack of data hinders the use of Life Cycle Assessment and the sound evaluation of alternative materials that could be promoted to transition the sector towards greener materials.</p>	<p>Improving data collection on materials to accurately capture the current use of materials and enable thorough assessment of alternative materials while avoiding burden shifting. EPDs or Health Product Declarations are example of tools available to facilitate data collection.</p>
<p>Key regulatory tools, such as legal framework for green public procurement are missing and fail to incentivize a corporate shift towards circular approaches, green materials and energy-efficient processes for construction and buildings.</p>	<p>A legal framework for green public procurement could play a very strong role in supporting the transformation of the construction supply chain in Morocco, and the size of Governmental programmes for housing and reconstruction offers an excellent leverage point to do so. Green public procurement usually covers a set of voluntary instruments which are applied to investment and policy. It relies on clear, verifiable and justifiable environmental criteria for products and services based on a life-cycle approach.</p>
<p>Mandatory building codes are available in Morocco but they are not harmonized with databased related to chemicals such as GHS or chemicals databases. Such tools are therefore not contributing to awareness or enforcement of regulations related to hazardous chemicals.</p>	<p>Developing mechanisms and building capacities of regulators, enforcement officers as well as the private sector would enable an integrated use of building codes and chemicals data bases. Pathways of intervention could include the development of voluntary codes that clearly relate to chemicals or the development of regulatory mechanisms to regularly update building codes and integrate chemicals-based tools in the processes of granting building permits.</p>
<p>Awareness on the environmental and health impact of hazardous chemicals and on the climate change and environmental impact of the sector in general is low. Since consumers, public planners, corporates or regulators are not aware of the implications of their choice in construction materials, the market for innovative, hazardous-free, green, circular and responsibly-sourced products could be limited.</p>	<p>Targeted outreach should communicate on the benefits of nature-based, circular and non-hazardous materials in buildings to foster demand for these products, increase business outcomes for new initiatives and match ethical suppliers with larger corporates. Awareness would also be facilitated by increasing the level of information made available to consumers, with the use of green labeling.</p>

<p>SMEs lack access to finance to test innovative materials and ideas. In this regard, lack of financing is a clear barrier to innovation and circularity of the sector.</p>	<p>Innovation can be facilitated through incubators, which are critical to convey potential solutions and actions that can be taken to improve the circularity of the sector. Such initiatives are essential to build capacities and advance technological-readiness for wider-scale investment. Small scale investment can also enable testing of recycled content, alternative materials and new building techniques. Results of such investment would also be critical in informing decision-makers and regulators of effective solutions that can effectively reduce the environmental impact of the sector. Such solutions would subsequently be implemented at a wider scale in public works contracted by the State.</p>
<p>Lack of (or non-existing) financial mechanisms or incentives for green construction and use of alternative materials. The absence of adequate financing tools for corporates hinders investment in sustainable and circular projects or resource-efficient processes even when the long-term benefits are clear.</p>	<p>Unlocking large financing tools targeted at promoting green investment is critical to sustain change. Mechanisms such as guarantee funds can be piloted in collaboration with development banks.</p>

Current baseline initiatives

The Government of Morocco has implemented a numbers of measures, mostly focusing on energy efficiency in various sectors, including energy performance standards for building and tax incentives for investment in energy efficiency. Law 47-09 encourages in particular the systematic integration of energy efficiency measures at all level of all sectoral development programmes, including setting up energy efficient codes.

On the environmental impact of construction, the Zenata eco-city Project is a particularly relevant and ambitious public utility initiative aiming to create a new urban center in Greater Casablanca, based on social cohesion, economic development and environmental protection. In order to raise the level of consideration and integration of environmental aspects into the various stages of urban development in the Zenata ecocity project, the Society of Zenata Planning (*Société d'aménagement de Zenata*) SAZ has introduced a set of environmental specifications that are systematically attached to the tender documents for development and construction works contracts. These specifications have made a number of good practices compulsory, in particular the reuse of backfill and excavated materials used on site. The Zenata Ecocity project has been developed on brownfield land, with

thousands of existing buildings. In order to make the most of the materials from these buildings that are due to be demolished, a project to reuse these materials was studied in 2015. This project is currently being rolled out.

The Government of Morocco has announced a reconstruction programme which currently is estimated at over 12 billion USD, which is to be linked to sustainable, green and low-carbon targets.

For a detailed list of ongoing initiatives with which the Project would ensure collaboration, please refer to section Coordination and Cooperation with Ongoing Initiatives and Project.

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

The project aims to offer an alternative for the construction sector in Morocco in its ambition to provide for the increased housing and infrastructure needs while responding to the environmental obligations and synergizing with the reconstruction efforts after the earthquake of 8 September 2023. It will therefore support regulatory measures, sustainable funding mechanisms, multi-stakeholder collaboration with global platforms and innovation to transform the supply chain through new products and processes. The project will focus on the following actions across the supply chain in the construction sector:

-
-
- **Incentivizing sustainably sourced, responsibly managed, recyclable and nature-based solutions in the construction supply chain to remove non-renewable and hazardous materials.** Green and sustainable chemistry can eliminate chemicals of concern in products such as paints, plastics or textile. For these materials, nature-based alternatives can be envisaged where applicable, for instance for insulation materials. Lifecycle assessments will be used to assess the environmental and economic implications of alternative materials, as well as their potential social effects, while the green public procurement will work to strengthen the market demand for green buildings.
-
-
- **For conventional construction materials, shifting to cleaner, resource efficient production processes, reducing energy consumption and emissions.** Alternative low-carbon materials to cement have an enormous potential for GHG reduction. Cement production being one of the most polluting industry, promoting the use of recycled cement, concrete-steel composite, calcined clay or lower clinker-to-cement ratio will considerably

reduce the impact of the construction sector to GHG emissions in Morocco, and facilitate its adoption in other countries.

- - **Innovation and transformation in building techniques that require less energy and no hazardous chemical.** Use of smart design and material selection will be promoted with positive implications on energy use, water consumption, pollution and chemicals of concern by exploring solutions such as modular buildings and construction methods based on traditional knowledge and locally sourced materials. Innovation to re-discover, reinvigorate and modernize building techniques based on traditional and local knowledge will be piloted in the Atlas and Rif region. The tourism sector in Morocco offers an excellent opportunity to market traditional habitat, and the dynamism of the sector can strengthen the potential for scaling up. Furthermore, these pilot projects will also foster adaptation to climate change, considering that traditional materials like clay have excellent properties in terms of thermal variation and pressure resistance.
 - **Reverse logistics to return construction products and materials back to manufacturers to reuse or recycle,** and close the loop in the value chain by connecting the consumption/use phase of products with the design/production phase. This will be critical in particular to enable the use of recycled cement and decrease the impact of cement production to uPOPs and GHG emissions, but also for improved land management practices.
- To enable transformation and incentivize change in a cross-sectoral manner, the project will action the following levers, with examples of specific activities that will be considered:
 -
 - **Policy and governance:**
 - Improving data collection on materials to enable the implementation of LCA for materials and buildings. EPDs or Health Product Declarations are example of tools for such application, used in decision-making processes. There is currently not regulatory tool enforcing their use in Morocco. Based on similar regulatory instruments deployed in other countries, the Project will develop technical and legal content to support their use and enforcement in reporting obligations of companies.
 - Strengthening building codes as a key policy instrument to encourage green materials use and reduce energy consumption of buildings, based on a whole life-cycle approach. The project will also explore the introduction of specific standards, guidelines and tools for the informal sector, in order to facilitate compliance.
 - Strengthening regulations related to traceability of materials in the planning phase, with material labeling, building labeling and green labeling.

- Strengthening legal framework on management of chemicals in particular hazardous products for better monitoring their use especially in the planning phase
- Fostering demand for green energy efficient buildings as well as sustainable material solutions through application of green procurement principles in public procurement for reconstruction programmes and urban planning

- Improving data collection on materials to enable the implementation of LCA for materials and buildings. EPDs or Health Product Declarations are example of tools for such application, used in decision-making processes. There is currently not regulatory tool enforcing their use in Morocco. Based on similar regulatory instruments deployed in other countries, the Project will develop technical and legal content to support their use and enforcement in reporting obligations of companies.

- Strengthening building codes as a key policy instrument to encourage green materials use and reduce energy consumption of buildings, based on a whole life-cycle approach. The project will also explore the introduction of specific standards, guidelines and tools for the informal sector, in order to facilitate compliance.
- Strengthening regulations related to traceability of materials in the planning phase, with material labeling, building labeling and green labeling.
- Strengthening legal framework on management of chemicals in particular hazardous products for better monitoring their use especially in the planning phase
- Fostering demand for green energy efficient buildings as well as sustainable material solutions through application of green procurement principles in public procurement for reconstruction programmes and urban planning

Innovation and knowledge management in collaboration with global platforms to encourage the use of innovative materials and the development or regenerative design:

- Developing curricula and guidelines on sustainable and regenerative design for public planners, architect and building companies. The alternative designs can play a great role in the reduction of the needs for materials containing hazardous chemicals or the need for HVAC, for example.
- Supporting the development of incubators that will promote entrepreneurship and innovation related to alternative materials, material recovery and green planning.
- Connecting local actors with global knowledge and platforms to make accessible readily available tools (chemicals database, material sourcing platforms etc.) and to disseminate local solutions and connect corporates with ethical material suppliers. Business to business events will further promote the direct involvement of the private sector through transfer of eco-innovative solutions and establishing business linkages.
- Building capacities on LCA assessment for informed decision-making on alternative designs and materials free of hazardous chemicals.

- **Access to finance:**

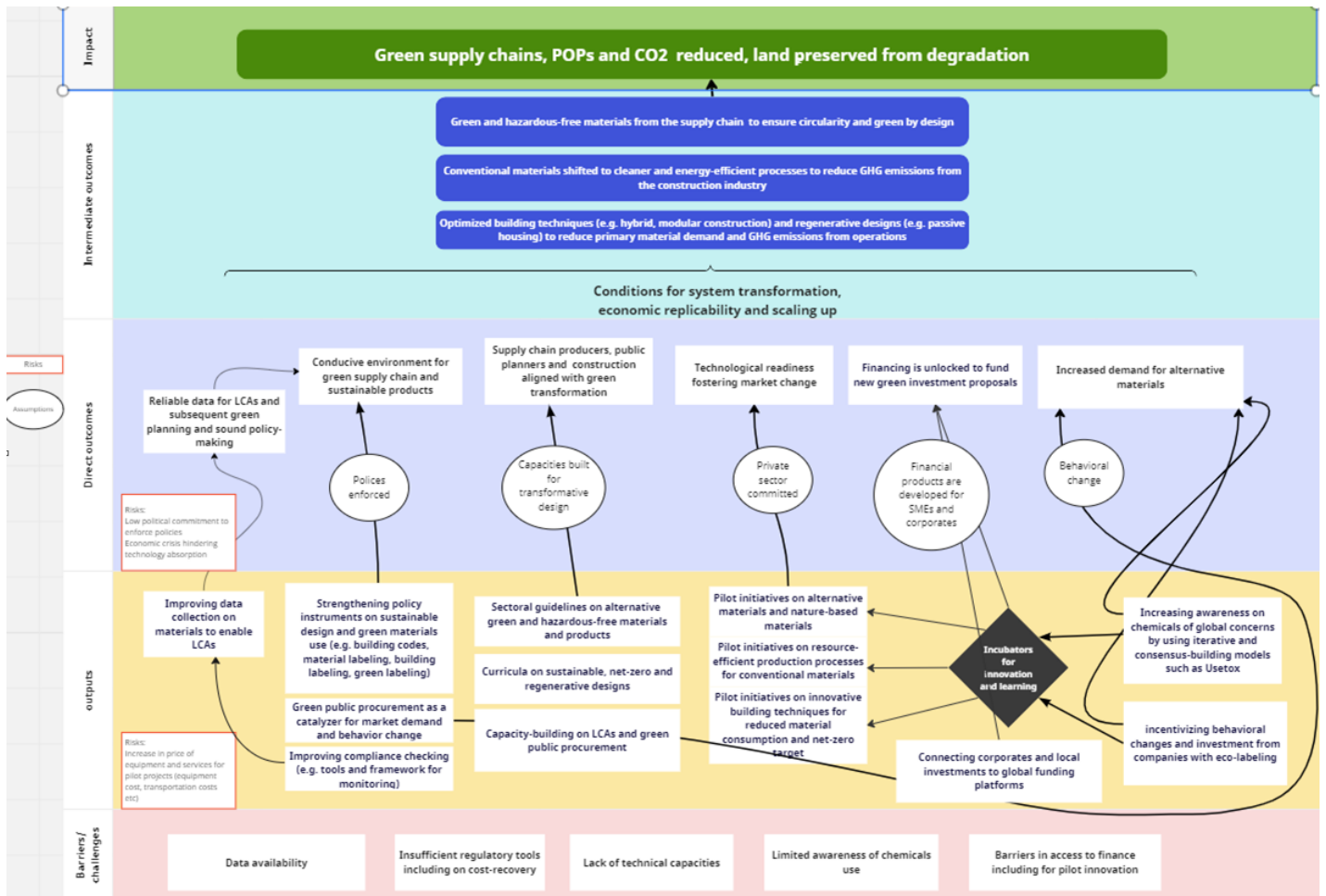
- Advancing public finance tools such as incentives, subsidies, green bonds and investment to support alternative materials and guide private sector investments.
- Promoting green public procurement as a catalyzer for change in the construction sector.
- Connecting local investment banks to regional and global financing institutions involved in green finance to use and further promote existing mechanisms and evaluation criteria related to chemicals and circular economy

- Developing guidelines, degree and technical content for sustainable funding, e.g. EPR schemes, guarantee funds, green bonds, risk-sharing loans, green mortgages etc.
- Promoting incubators to unlock finance for SMEs piloting alternative materials, green materials or innovative building techniques.
- Launching competition and awards in collaboration with larger industrial partners to encourage regenerative design and innovative materials, and awards for innovative architects and designers.

Behavioral change as a driver for demand of green materials and sustainable practices:

- Increasing awareness on chemicals of global concerns by disseminating available tools (e.g. Usetox) for the general public, decision makers and experts of the sector.
- Incentivizing behavioral changes and investment from companies with eco-labeling, standards and certification for sustainable practices, which would provide guidance to consumers.

Theory of change



Detailed description of project components

Component 1: Policy strengthening by integrating a life-cycle approach into the existing legislative framework to encourage certified green materials use, demand and efficient production processes

Outcome 1: Enhanced policy and regulatory framework to encourage certified green material use, demand for environmentally sound construction materials and efficient production processes

Output 1: The life cycle approach and use of LCAs is integrated in the decision making process on construction materials and techniques.

Improving data collection on materials is critical to enable the implementation of LCA for new buildings. EPDs or Health Product Declarations are example of tools available to facilitate data collection and the creation of targeted and comprehensive databases to enforce minimum environmental standards. The creation of EPDs with characteristics and content of materials used in construction is a very good example of using life cycle assessment and selection of best alternative at the design stage. The use of LCA has been promoted through various initiatives

at EU level, with the perspective of moving towards legislative adoption of LCA requirements for the construction industry, which is expected to be a catalyst for wider market penetration of EPDs. The Project will focus on the capacity-building of technical public officers, development of learning material and development of technical content to enhance the use of LCAs in decision-making processes.

Output 2: Mechanisms are in place to regularly harmonize the regulations related to building codes with chemicals databases.

Building codes are very efficient tools to foster energy efficiency in the construction sector and Morocco has mandatory building codes that cover the entire building sector. However, such codes are not harmonized with data bases related to chemicals, such as GHS or chemical databases. Closing this gap would require development of relevant mechanisms and capacity building for regulators, enforcement officers as well as the private sector. The development of voluntary codes that clearly related to chemicals would also greatly benefit decision-making and increase awareness. The Project will provide technical expertise focused on the development of regulatory mechanisms to regularly update building codes and integrate chemicals-based tools in the regulatory processes of granting building permits. Technical content for voluntary building codes will also be developed.

Considering the large share of informal sector in the construction sector, and the share of self-built and informal housing in the country, specific standards, guidelines and tools will be developed for the informal sector, in order to facilitate compliance.

Output 3: Regulations related to traceability of materials are strengthened for the use of material labeling, building labeling and green labeling.

Draft decrees or other applicable regulatory tools will be developed to strengthen the use of material labeling, building labeling and green labeling. This will in turn facilitate transparency and key information for consumers, which will become increasingly aware of material composition and make informed decisions. Furthermore, this will greatly facilitate green public procurement, as a transformational leverage point. Cooperation will be established with national certification authorities such as IMANOR to introduce certification schemes guaranteeing renewable and/or non-hazardous materials. The proposed eco-labels will be further disseminated to associations and federations in the construction sector and educate consumers and construction professionals about the benefits of certified materials and final products/buildings.

Output 4: Policy tools including green public procurement and financial mechanisms (e.g. EPR schemes, guarantee funds etc) are developed to promote green materials, gender-responsive policies and sustainable practices.

Green public procurement is a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured. Green procurement usually covers a set of voluntary instruments that can be used across investment. It relies on clear, verifiable and justifiable criteria for products and services based on a life-cycle approach and scientific evidence. The Project will develop technical tools and regulatory texts to support the deployment of green public procurement for the investment of the

Government in the construction sector. In addition to development all the technical and regulatory texts required for this tool to be properly applied, the Project will implement training, building up on the LCA support also provided as part of component 1.

The Project will assess and promote gender mainstreaming in public procurement by raising awareness on gender-related integrity breaches, gender inequalities and unequal representation of women in the sector. Green public procurement policies will plan specific training on the social benefits that may result from empowering companies committed to reduce their environmental impact and provide social benefits.

EPR is a mechanism that links the waste management to the design and production of products and seeks to close material loops at the end of life. EPR shifts the responsibility for waste management activities onto producers. By shifting the responsibility (financial and physical) for waste management to the party that has the most control over product design (i.e. manufacturers), there is a greater incentive to design out waste and produce easy-to-recycle products and material, to reduce costs associated with managing them at end-of-life. EPR is increasingly seen as an important policy tool to drive the transition to a circular economy.

Other financing mechanism such as guarantee funded by the Government or development banks are critical tool that can unlock access to finance for SMEs, enhance energy efficiency, facilitate the adoption of new manufacturing processes and promote innovation.

Output 5: Behavioral change is incentivized by taking into account gender factors and investment from companies is promoted with eco-labeling, standards and certification for sustainable practices.

It is necessary that all stakeholders have a clear understanding of the alternatives they have when making their investment, as it is essential that the eco-solutions developers see a clear incentive to invest in new, sustainable materials and products. Labeling and certification schemes are foreseen for this purpose. Consumption choices and the width of the attitude-behavior gap depends from a variety of factors such as a location, age or gender. As highlighted by a recent OECD report (2022), research shows that women “tend to be more sustainable consumers and are more sensitive to ecological, environmental and health concerns” (OECD, 2022). Acknowledging factors that influence differentiated behaviors in consumption should be taken into account when designing public awareness campaigns. Although construction materials are not typical household products on which social factors have the strongest impact, a gender-differentiated response may foster the adoption of green materials in individual dwellings or in larger infrastructure projects. The Project will adopt a gender approach on the development of eco-labels in order to acknowledge gender differentiated behavioral preferences and increase the visibility of health risks that specifically or disproportionately affect women.

In addition, gender mainstreaming in public policies including eco-labeling, standards and certifications bears the potential to advance the agenda on gender inequalities. Fair representation of women in the work force and/or promotion of women and youth employment would be included as criteria to incentivize a positive change in the social impact of companies.

[1] OECD, Empowering Women in the Transition Towards Green Growth in Greece (2022), available at <https://doi.org/10.1787/a9eacee6-en>

Component 2: Capacity- building and awareness raising

Outcome 1: Strengthened capacities to promote and facilitate the use of alternative materials, and regenerative designs

Output 1: Capacities of the public sector on LCAs are strengthened for effective use in the decision- making process

The project will provide technical training on LCAs and related data collection tools for several target groups including regulators, public planners and architects.

Output 2: Sectoral technical guidelines are developed to support alternatives to materials from the supply chain containing hazardous chemicals

Technical guidelines will be developed for a selected range of products entering the supply chain in order to remove hazardous chemicals from the production process and promote the use of safer alternatives. These may be developed for the following products produced or imported in Morocco: coatings for roof, paints, wood lacquers and sealers containing PFAS, glass and ceramic fixtures coated with PFAS, plastic pipes using plasticizer containing SCCPs, brominated textiles and firefighting foams of products put in buildings.

Workshop materials, training manuals, and educational resources will be created for construction professionals and the public to raise awareness and provide guidance on safer material selection and handling. A specific attention to gender will be brought in the development of the guidelines to include specific content on risks that are particular to woman health.

Output 3: Curricula on sustainable, net-zero and regenerative designs are available for Public planners, architect and building companies.

Using available tools and materials developed by the World Bank Group, UN Habitat or UNEP, the Project will develop curricula and guidelines on sustainable and regenerative designs, applicable to several ecosystems and environmental conditions of Morocco and the region. The guidelines will provide technical information and cost-benefit analysis on innovation such as net-zero housing, passive housing, nature-based solutions and regenerative innovation. Extensive training will be provided to policy makers, architects, larger corporates and academia. For the latter, the Project – in collaboration with the Ministry of Education – will develop curricula on smart and regenerative design for inclusion in existing tertiary programmes.

For curricula being developed for architects, a competitive award on the most innovative design may be organized in collaboration with the academia or technical institutes. A comprehensive list of recommended alternative

construction materials and practices to reduce the reliance on hazardous substances, including their benefits and applications.

Output 4: Technical knowledge of the Project is disseminated amongst the general public, decision makers and experts of the sector through targeted outreach including gender specific communication.

Behavioral change will act as a driver for demand of green materials and sustainable practices. Awareness on chemicals of global concerns will be increased by using and disseminating tools such as Usetox for the general public, decision makers and experts of the sector. The project will organize campaigns and initiatives to raise consumer awareness about the risks associated with hazardous substances in construction materials with a particular emphasis on gender-specific risks. This includes educating consumers about the potential health and environmental impacts of using such materials and their long-term implications. Specific content will be created to advocate about risks for women. Awareness sessions will be planned for consumer associations, architects, and real estate developers.

To reach the general public, the project will organize workshops with consumer advocacy groups and organizations, including women-led groups and women consumer groups to engage them in advocating for changing industry practices to prioritize the use of non-toxic and sustainable construction materials. Consumer-friendly guides or brochures will be created to educate people on identifying non-toxic and sustainable construction materials. Gender will be mainstreamed across all training and awareness-raising materials by ensuring a fair representation of women in all activities, and awareness-raising materials targeted women as a specific group will be developed.

The project will create a dedicated project website or online platform with resources such as scientific articles, videos, guides, and FAQs on hazardous products and associated risks to help consumers make informed choices about construction materials. The website will provide links to global platforms to facilitate access to existing resources.

Component 3: Transformation of the supply chain with regenerative designs, innovative materials and cleaner processes

Outcome 1: Non-renewable and hazardous materials are eliminated from the supply chain and processes are transformed

Output 1: Selected non-renewable and hazardous materials eliminated from the supply chain, including with the use of nature-based alternatives

The Project will incentive sustainably sourced, responsibly managed and recyclable materials in the construction supply chain to remove non-renewable and hazardous materials. Green and sustainable chemistry can eliminate chemicals of concern in products such as coatings, paints, plastics in pipes or textile. For some materials, nature-based alternatives can be envisaged where applicable, for instance for insulation materials. Lifecycle assessments will be promoted to assess the environmental and economic implications of alternative materials, as well as their

potential social effects. Investment and technology transfer will be targeted by the Project in selected products line, in collaboration with enterprises already leading shown-successful initiatives.

Output 2: Enhanced sustainability of conventional construction materials through cleaner, resource efficient production processes with reduced energy consumption and emissions

Alternative low-carbon materials to cement have an enormous potential for GHG reduction. Cement production being one of the most polluting industry, promoting the use of recycled cement, concrete-steel composite, calcined clays, or lower clinker-to-cement ratio will considerably reduce the impact of the construction sector to GHG emissions in Morocco, and facilitate its adoption in other countries. To mitigate carbon emissions and promote sustainability in the construction industry, activities will be implemented to test the feasibility of resource-efficient practices, including the use of recycled cement and work with cement producers towards lower levels of clinker use. The cement industry is aware of the benefits it can achieve by introducing cementitious materials (fly ash, slag, silica fume) in its processes. However, some barriers prevent easy access to this resource: the price, the transport over long distances, and securing the needed quantities.

The project will conduct a detailed assessment of current barriers to the alternatives for cement production and pilot innovation in collaboration with the private sector. Based on the results of industrial tests, the Project will facilitate advocacy and updated norms of maximum clinker-to- cement ratios. These incentives and activities can create a more favorable environment for cement producers to adopt practices and technologies that reduce clinker content, thus emitting less GHG and pollutants.

Reverse logistics to return construction products and materials back to manufacturers to reuse or recycle, and close the loop in the value chain by connecting the consumption/use phase of products with the design/production phase. This will be critical in particular to enable the use of recycled cement and decrease the impact of cement production to uPOPs and GHG emissions, but also for improved land management practices.

The project will also target mineral products manufacturers, including those producing bricks, tiles, floor and wall coverings, and ceramic sanitary equipment. This sector is a significant consumer of fossil fuels and an emitter of atmospheric pollution. The actions planned in collaboration with their respective associations and federations will encompass the fields of energy efficiency and pollution reduction. This sector was audited in 2016 in the framework of the “*Plan National d’Efficacité des Ressources Industrielles,*” and a contingent of measures was proposed. Still, up to now, very few were executed. Some of the measures proposed in this plan, in line with this project's objectives actionable plans will be developed with policy-makers and the private sector. In collaboration with the *Institut des Matériaux de Construction of Tamesna* the project will organize special training sessions for technicians of the private sector to strengthen their capacities in energy efficiency and pollution control within the construction materials industry.

Output 3: Building techniques are transformed by innovation including modular buildings, hybrid buildings and building techniques based on traditional and local knowledge

Use of material will be reduced with positive implications on energy use, water consumption, pollution and chemicals of concern by exploring solutions such as modular buildings and construction methods based on

traditional knowledge and sustainably sourced materials. Innovation to re-discover, reinvigorate and modernize building techniques based on traditional and local knowledge will be piloted in the Atlas and Rif region. The tourism sector in Morocco offers an excellent opportunity to market traditional habitat, and the dynamism of the sector can strengthen the potential for scaling up. Furthermore, these pilot projects will also foster adaptation to climate change, considering that traditional materials like clay have excellent properties in terms of thermal variation and pressure resistance.

Attention will be given to the materials used in modular and prefabricated buildings. The current practice in the national industry focuses mainly on metal container-based buildings, with energy efficiency and energy intensity consequences, increased use of chemicals etc.

Component 4: Knowledge management and access to finance

Outcome 1: Innovation is driven by global collaboration and unlocked access to finance

Output 1: Incubators are promoted to unlock finance for SMEs, piloting alternative materials, green materials or innovative building techniques.

By providing capacity building and technical assistance for the development and growth of green businesses, the incubators will support the introduction and adoption of sustainable construction materials and technologies. It targets both well established companies and start-ups at different stages of business development and aims is to ensure the development of a local market driven by established national competences and ownership among different stakeholders. Synergies will be sought with the incubation programme launched by Omrane in 2022, in the framework of the partnership with IRESEN, focusing on startups working in the construction sectors Group, to catalyze innovation and encourage startups to innovate in the sector, while providing innovative and sustainable solutions to current operational challenges in the sector.

Output 2: Local actors are connected to global knowledge platforms to enhance the use of available tools, disseminate local solutions and connect ethical material suppliers.

The project will aim to leverage the participation of Morocco to relevant regional initiatives such as the Breakthrough Buildings, but also the established platforms such as the Global alliance for buildings and construction hosted by UNEP as well as the Knowledge Management project under GEF-8 IP11. The Green Growth Knowledge Platform, a joint platform between UNIDO, UNEP, World Bank, OECD and GGGI, will be leveraged not only for accessing applicable knowledge and tools but also for sharing the experiences and outcomes generated from the project. This will also include, research and development results on innovative construction materials and processes through technological and technical monitoring identified and tested in the country through the programmes of Al Omrane.

Output 3: Business to Business promotional events to exchange best practices and technologies, and establish business linkages, technology cooperation and transfer of eco-innovative solutions.

In particular, these events would aim to offer Moroccan businesses the possibility to meet international eco-solutions companies and discuss potential cooperation, commercial collaborations and/or industrial partnerships. The transfer of technology would facilitate the uptake of new processes and materials that should ultimately accelerate the transformation of the sector through new technological solutions. This would allow the construction industries in the country to increase their competitiveness, profitability and environmental compliance not only in the local, but also in the regional markets. An equal representation of women will be ensured in the participants benefitting from South-South or North-South cooperation, and women-led businesses will be particularly encouraged by including their fair-representation as a screening criteria for participation.

Output 4: Corporates and local investment banks are connected to regional or global financing institutions to promote existing mechanism and evaluation criteria including gender-responsive finance for green investment.

It is essential to provide not just access to funding for the businesses that want to offer innovative and sustainable technologies and products but also to encourage the market demand for green, sustainable housing through the introduction of dedicated financing schemes. In this regard, the Output would be building on the success of some of the initiatives such as the MorSEFF financing facility offered by EBRD through the national banks, the Business Green Supply Chain initiative or the NAMA Habitat initiative. Synergies with the Fonds Solidarité Habitat (FSH) will be sought, as this trust fund is intended to facilitate access to credit financing for the beneficiaries of the programme.

The Project will provide technical assistance to integrate gender aspects into green finance activities, having in mind that gender-criteria are part of the decision-making of multilateral investors and that building capacities of national financing facility, the private sector and policy-makers in these aspects will improve changes of accessing finance. Activities deployed by the project will include: - Training on gender inequalities in access to finance and compliance with existing gender-sensitive incentive systems already enforced by regional development banks and multilateral funds - Training on assessment of gender-specific climate and environmental risks - Sex-disaggregated and gender data required by investors and regulators - Development of gender-based criteria for funds allocation

Project stakeholders

Stakeholders from the public sector, professional associations, the private sector, technical institutes and organizations, the civil society and financing institutions will contribute to achieving the project objectives, scaling up innovation and sustaining change. As part of the knowledge management strategy of the Project, collaboration will also be maintained with international organizations and already available tools related to nature-based solutions, sustainable designs and chemicals identification. For a detailed analysis of identified stakeholder, please refer to the section on stakeholders engagement.

Civil society	Academia	Type of engagement
	SMEs	

Private sector	Corporations (associations of sectoral branches, chambers of commerce and trade association, Moroccan association for building and climate) Entrepreneurs	Pilot innovation in materials, designs and processes Foster innovation
Government	Ministry of energy transition and sustainable development Ministry of Urban Planning Ministry of Health Ministry of Labour	Create market demand with green public procurement practices, norms, standards and certifications Build capacities by maintaining knowledge on science-based tools for decision making such as LCAs Create enabling environment with adequate regulations and strategies
Financial institutions	Regional development banks (AfBD, EBRD, EIB) Financial intermediaries	Deploy financial instruments Scale up results across sectors and geographical areas
Civil organizations	Global and regional platforms (Global Alliance for Building and Construction, green building councils) Academia Technical institutes (center of techniques and materials of construction, Al Omrane group on urban planning and habitat) Consumers associations Workers associations Global platforms	Create market demand Promote behavior change Increase requirements for transparency and traceability
International organizations	UNEP FI SAICM Secretariat African Development Bank World Green Building Council UN Habitat	Access to finance Knowledge management and access to chemicals data base Use of nature positive road maps, circularity accelerator, curricula for sustainable building design

Innovation, sustainability and scaling up

The project objective is to promote transformational change in the industry by replacing resource-intensive processes and materials with sustainable and circular alternatives. The Project intervention addresses the entire lifecycle of construction and focuses on a broad range of products entering the supply chain. Following this green by design approach, the Project will also support new processes and sustainable building techniques

that will reduce material use (e.g. modular buildings), reduce energy consumption (concrete recycling, smart architecture) and foster regenerative designs (carbon-capture, nature-based solutions).

Crucially, the Project will increase the capacity of designers and corporations to work with alternative materials and create sustainable designs by incubating new businesses, developing innovative curricula for architects and train public planners in sustainable, circular and regenerative designs.

A coherent policy framework will sustain the outcomes of the Project, by enforcing regulations that will promote the use of green materials and sustainable building practices. Policy will include regulations and mechanisms on imports and use of chemicals in the industry, integration of chemicals database with building codes, green procurement standards, material and building labeling and strict reporting construction companies on material use.

The Project will unlock finance to scale up new businesses and circular approaches. Incubators will provide funding and support for startups and SMEs. The Project will also collaborate with financial institutions and development banks in order to explore the establishment of new financing mechanisms focusing on green industrial development, for instance as a guarantee fund enabling green loans for the private sector. Capacity-building for the public sector and corporates in meeting requirements for already existing funding tools, such as green bonds, will also be implemented. Activities increasing the level of information available to consumers (tools on chemicals use, material labeling etc) and targeted outreach will also be critical in instigating behavior change and fuel a large demand for sustainable buildings. The Green Value Chain from EBRD is an example of a credit line worth 90 million Euros deployed in Morocco to support SMEs. Such funds should be targeted towards precise investment targets in green construction.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

The Project will ensure close coordination and cooperation with ongoing initiatives and Project presented in the table below.

Name of Project or ongoing initiative related to the proposed alternative scenario	Contribution to the proposed alternative scenario
GEF Integrated Programme 11 Eliminating Hazardous Chemicals from Supply Chains, following on the fashion and construction supply chains	The GEF IP 11 integrated programme will generate a lot of knowledge on sustainable materials for the construction chain and sustainable processes for the construction sector. The Project will use knowledge,

	<p>tools and technical content generated by the IP to pilot ideas at local level. The Project will also share local successful initiatives – for instance nature-based solutions for alternative materials and building techniques based on traditional knowledge and local materials – with the IP, to ensure that local results can be used and scaled up in other countries and/or regions with similar environmental conditions. The Project will also keep updated on platforms aiming to connect ethical suppliers to new markets.</p> <p>Period of implementation: 2023- 2029 including PPG</p>
<p>GEF Project “Greening construction supply chains to eliminate hazardous pollutants and develop circular building practices in Costa Rica”</p>	<p>This child project is from the IP 11 and implemented by UNIDO will create an enabling environment and accelerate technical capacity to eliminate hazardous pollutants and develop circular building practices. In particular, the project will develop innovative solution for the use of wood in buildings. UNIDO will ensure collaboration with the child project and use any technical content of relevance developed by the Project.</p> <p>Period of implementation: 2023- 2029 including PPG</p>
<p>Global alliance for buildings and construction hosted by UNEP: Ministry of national territory, planning, land planning, housing and city policy is part of the platform</p>	<p>The global alliance for buildings and construction is a multi-stakeholder alliance committed to delivering zero-emission, efficient and resilient buildings and construction sector. The focal point for this alliance in Morocco will be part of the Project steering committee, in view of ensuring integration of roadmaps and technical content in technical guidelines developed by the Project. The Project will also facilitate participation in events and study tours organized by the global ABC and further disseminate knowledge.</p>
<p>Sustainable Energy Efficiency Financing Program (MORSEFF). The MORSEFF program has been developed to help private companies to implement resource efficiency and renewable energy. Worth 150 million euros, this program was established by banks and development aid organizations such as EIB, EBRD, AFD, and KfW. This program provides access to loans for acquiring equipment and assistance of 10% of the credit distributed by local partner banks. The program's second phase, worth around 160 million euros, is being mobilized</p>	<p>The Project will mobilize funding for planned investment by initiating cooperation with the MORSEFF program. The Project would develop feasibility studies for investment demonstrating feasibility of alternative materials and processes and ensure compliance with MORSEFF criteria to raise capital for investment by the private sector.</p> <p>Ongoing since 2021</p>

<p>Business Green Value Chain: The 'business-specific green value chain' program, funded by EBRD, EU, and South Korea Climatic Fund, enables private Moroccan companies to finance green technologies that promote energy efficiency and the rational use of resources.</p>	<p>The Project will mobilize funding for planned investment by initiating cooperation with the program. The Project would develop feasibility studies for investment demonstrating feasibility of alternative materials and processes and ensure compliance with criteria to raise capital for investment by the private sector.</p>
<p>AFD/PEEB Energy efficiency in buildings programme. The PEEB supports the implementation of thermal regulations and the operationalization of national climate commitments. AFD's PEEB activities are part of a proactive approach to supporting project owners with projects that have high transformational potential, due to their exemplary nature, scale and potential for replication. This support makes it possible to guide the architectural choices of the projects financed so as to reduce their energy requirements, guaranteeing better thermal comfort and reduced operating costs. GIZ and ADEME are also developing capacity-building initiatives for the building and construction industry.</p>	<p>The Project would ensure collaboration with the PEEB to effectively combine energy efficiency with actions targeting chemicals-free materials and green alternatives. The project would bring an environmental perspective to energy efficient projects usually supported by the PEEB, and ensure maximum cost-recovery and return on investment for the private sector interested in co-financing the investment.</p> <p>Ongoing since 2018</p>
<p>Zenata eco-city Project. Zenata Eco-City is a public utility project aiming to rebalance Greater Casablanca Region by creating a new urban center based on social cohesion, economic development and environmental protection. In order to raise the level of consideration and integration of environmental aspects into the various stages of urban development in the Zenata ecocity project, SAZ has introduced a set of environmental specifications that are systematically attached to the tender documents for development and construction works contracts. These specifications have made a number of good practices compulsory, in particular the reuse of backfill and excavated materials used on site. A set of specifications has been drawn up for property developers to improve the environmental quality of buildings, including a series of requirements (minimum criteria) and incentives in terms of building height if certain levels of environmental performance are achieved.</p>	<p>The Project will develop regulatory tools based on the set of environmental specifications developed by SAZ – which are systematically attached to tender documents for development and construction work contracts of Zenata - promote technical content, and explore integrating the developed specifications into curricula. The project will also use such specifications when developing investment plans for alternative materials and innovative business techniques removing hazardous component and reducing the environmental impact of the sector.</p> <p>Period of implementation: 2006-2030</p>
<p>NAMA Habitat Morocco. The NAMA Facility is an initiative that provides developing countries with</p>	<p>The Project would ensure collaboration with the programme to effectively combine energy efficiency measures with actions targeting chemicals-free</p>

<p>support in implementing their NAMAs (Nationally Appropriate Mitigation Measures). Donors include the governments of Germany, Denmark and the United Kingdom, as well as the European Commission.</p> <p>The Ministry of National Planning, Urban Development, Housing and Urban Policy, in partnership with the Ministry of Energy Transition and Sustainable Development and the Al Omrane Group (GAO), and with the support of the German Development Cooperation (GIZ) and the French Development Agency (AFD) submitted a project proposal to the NAMA Facility in March 2019 to receive financial and technical assistance for the integration of energy efficiency measures in social and medium-standard housing to be built nationwide, as well as for promoting the acquisition by households of energy-efficient household appliances.</p>	<p>materials and green alternatives. The project would bring an environmental perspective to energy efficient projects usually supported by the PEEB, and ensure maximum cost-recovery and return on investment for the private sector interested in co-financing the investment.</p>
<p>Project on acceleration of energy efficiency in the industry of Morocco (<i>Accélérateur de l'efficacité énergétique dans l'industrie au Maroc</i>) executed by the Moroccan Agency for Energy Efficiency (AMEE) and UNIDO</p>	<p>UNIDO has a developed a Programme for Country Partnership for Morocco, ensuring the integration of all technical assistance activities delivered in the country and their full alignment with the priorities of the Government. The Project will organize regular consultations with AMEE in order to connect with industrial sites ready to pilot energy efficient initiatives in the construction sector.</p> <p>Period of implementation: 2018-2023</p>
<p>Programme of support to energy efficiency in Morocco (programme d'appui à l'efficacité énergétique au Maroc (PEEM) funded by BMZ and executed by GIZ in partnership with the Ministry of Industry and Trade and the Institute of energy engineering (<i>Société d'ingénierie énergétique</i>)</p>	<p>UNIDO has a developed a Programme for Country Partnership for Morocco, ensuring the integration of all technical assistance activities delivered in the country and their full alignment with the priorities of the Government. The Project will organize regular consultations with the Ministry of Industry in order to connect with industrial sites ready to pilot energy efficient initiatives in the construction sector.</p> <p>Period of implementation : 2021-2026</p>
<p>Project on recycling of construction waste by GIZ and CETEMCO</p>	<p>Results from the GIZ and CETEMCO study will directly contribute to potential pilots on sorting and recycling of construction and demolition waste to ensure material recovery and closing the loop of materials flow. These results are of particular relevance for alternative processes to be piloted for cement, which is one of the most critical leavers to achieve lower carbon and environmental impact of the entire value chain.</p>

<p>Management plans of construction waste, demolition waste and green waste in Rabat in partnership with Sita Al beisa</p>	<p>This initiative will contribute to material recovery and closing the loop of materials flow. In addition to cement recycling and potential for a significant decrease of the sector environmental and climate impact, the management plans will facilitate recovery of other type of waste, such as wood, which contributes significantly to emissions of uPOPs when openly burnt at open dumps.</p> <p>Report of phase 1 published in 2016</p>
<p>Project “Africa-Europe Bioclimatic Collaboration for the 21st century(ABC 21) on energy efficiency for buildings</p>	<p>The Project will organize regular consultations with the relevant stakeholders and focal points in order to connect with industrial sites ready to pilot energy efficient initiatives in the construction sector. During the PPG, the Project will also consult publications made on the analysis of local materials, and make use of technical guidelines published for passive design in warm climates.</p> <p>Period of implementation: 2020-2023</p>
<p>GEF6 Project “Sound management and final disposal of PCBs in Morocco” (GEF IF 9916)</p>	<p>UNIDO is executing the Project since 2018 in collaboration with the Ministry of Energy Transition and Sustainable Development, and has developed a very successful working relationship with the stakeholders. The project piloted an initiative on the co-processing of hazardous waste in cement kilns, with a series of testing on the impact of co-processing on the quality of cement and on PCDD/F emissions. The methodology developed for this industrial test would greatly benefit any similar activities developed by the GEF proposal, for instance on lower clinker ratio or co-processing of solid waste in cement kilns.</p> <p>Period of implementation: 2018-2024</p>
<p>GEF 7 Project “reduction of industrial pollutant chemicals in manufacturing and recycling sectors through life-cycle approaches in Georgia” (GEF ID 11005)</p>	<p>UNIDO is implementing this project aiming to use lifecycle approached to reduce import, use and build-up of POPs in manufacturing and recycling sectors. The project plans to develop specific policies, regulations and environmentally sound management plans to eliminate POPs from manufacturing processes, demonstrate industrial feasibility of POPs-free materials. The methodology used will include surveys, sectoral analysis and LCAs to assess alternative materials and avoid burden-shifting. Some sectors included in the CEO document include EPS and XPF (phase out of HBCD), HBCDD-containing insulation foams and SCCP from paint manufacturing and PFOS from firefighting foams.</p>

Period of implementation: 2022-2025

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
400	0	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
400.00			

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Document(s) that justifies the HCVF)

Title

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)	1000000	0	0	0
Expected metric tons of CO₂e (indirect)	400000	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	1,000,000			
Expected metric tons of CO ₂ e (indirect)	400,000			
Anticipated start year of accounting	2024			
Duration of accounting	4			

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
------------	---------------------------------	---	---------------------------------	--------------------------------

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
1,443.60	0.00	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
Hexachlorobutadiene (HCBD)	160.00			
Short-chain chlorinated paraffins (SCCPs)	1,200.00			
Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride	83.60			

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.3 Hydrochlorofluorocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1			

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 9.6 POPs/Mercury containing materials and products directly avoided

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.7 Highly Hazardous Pesticides eliminated

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 9.8 Avoided residual plastic waste

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)

Indicator 10 Persistent organic pollutants to air reduced

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)
6.40			

Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1			

Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator in addition to Core Indicator 10 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	126,000			
Male	294,000			
Total	420,000		0	0

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

CI 4: 920 hectares are covered with rubble every year (estimated 5 tonnes per 10 m²). The project will target the average annual recovery, recycling and reuse of 500 thousand tonnes from the demolition streams that are currently unused.

CI 6: 14 million tonnes of cement are produced each year in Morocco. The average clinker content in the cement is estimated at 72%, leading to around 10 million tonnes of clinker production annually. In 2021, the emission of CO₂ resulting from clinker production in Morocco were estimated at 5 million tonnes of CO₂. The project will promote innovation for greener materials in the construction sector, aiming to increase the use of recycled cement and lower the use of clinker in the production process. Assuming that the share of clinker content in cement can be decreased to 60%, the reduction potential for use of clinker is 1,9 million tonnes with associated emissions of 800,000 tonnes of CO₂ avoided. Targeting 30% of this potential could lead to 1 million tonnes of CO₂ avoided during the project duration. Further reductions are possible through alternative materials such as calcinated clay, but their deployment potential currently is not possible to estimate more precisely. The investment will provide ground for new regulations regarding the use of recycled cement in Morocco.

Targeting improved energy efficiency in the residential dwellings due to improved materials and construction techniques could lead to additional GHG emission reduction. Assuming a 10% fraction of the 3 million homes to be built by 2030 will use greener materials and have improved energy household consumption, 400 thousand tonnes of CO₂ can be avoided during the same period. The current carbon footprint of the electricity in Morocco is 0.6 kg CO₂ per kWh.

The emissions saved by reducing the amount of conventional materials in the buildings cannot be estimated at the moment. The project will aim to develop a material use baseline for Moroccan housing projects and a methodology on calculating the emissions omitted. Generally, MIT estimates between 15 and 100 tonnes of CO₂ emitted for the construction materials used in a typical house.

CI 9: 33,500 tonne/year of EPS and XPS are imported in Morocco for various industrial use. From this amount, 6,741 tonne is imported annually for use in the construction sector. Assuming that HBCD content reaches 0,6% of EPS and XPS, the total amount of HBCD use in Morocco is 40 tonnes/year. Part of the investment component included in the project plans to convert polystyrene insulation production lines.

Annual PFOS imports in Morocco are estimated for 2021 at close to 31 tonnes, of which 50% are considered as used in paints for buildings and construction purposes (15.5 tonnes). Considering the imported quantities of ready paint for the same purpose, ranging from 4000 to 5400 tonnes annually, with the 1000 mg/kg PFOS content – the total targeted quantity of the project intervention is 20.9 tonnes annually.

SCCP imports, another POP listed in Annex A of the Stockholm Convention is used as a plasticizer in PVC pipes and tube manufacturing. No official data exists on the amount of SCCC imports for informal plastic production. However, plastic compounding specialists estimate it to be around 300 tons.

POPs will be reduced by direct investment and by transformation brought by policies framing the use of green materials, financing mechanisms driving investment and innovation and capacities improving adaptation to new market demands.

CI 10: 15 million tonnes of construction rubble is generated annually in Morocco. 10% of this waste stream is non-inert and non-hazardous, meaning that 1.5 million tonnes produced each year in Morocco, all of it being openly dumped. We estimate that 20% of the non-inert nonhazardous waste is made of wood amounting to 300,000 tonnes. Considering that all landfills are uncontrolled ones, fires are subject to happen to free occupational space. With an assumption of 25% of the open dumps subject to open burning in each year, 72,000 tonnes of wood would openly burn each year. The project during its duration would target an annual average of 30% decrease of wood reaching open dumps to be recycled. This would contribute to remove 22,500 tonnes wood from open burning and reducing 1.35 gTEQ/year of uPOPs annually (year 2 to 5). Additional 0.237 gTEQ/year are avoided through the targeted reduction in clinker production.

CI 11 is calculated based on the assumption that the project will reach reach and engage 60,000 per year with awareness raising of component 2 and knowledge management of component 4. Assuming 10% of the workforce in the construction sector would benefit from the project adds 120,000 beneficiaries over that period. As part of the gender mainstreaming approach that will be implemented by the Project, women should represent at least 30% of the beneficiaries.

Risks to Project Preparation and Implementation

Summarize risks that might affect the project preparation and implementation phases and what are the mitigation strategies the project preparation process will undertake to address these (e.g. what alternatives may be considered during project preparation—such as in terms of consultations, role and choice of counterparts, delivery mechanisms, locations in country, flexible design elements, etc.). Identify any of the risks listed below that would call in question the viability of the project during its implementation. Please describe any possible mitigation measures needed. (The risks associated with project design and Theory of Change should be described in the “Project description” section above). The risk rating should reflect the overall risk to project outcomes considering the country setting and ambition of the project. The rating scale is: High, Substantial, Moderate, Low.

Risk Categories	Rating	Comments
Climate	Low	<p>Due to a combination of political, geographic, and social factors, Morocco is recognized as vulnerable to climate change impacts, ranked 70th out of 182 countries in the 2021 ND-GAIN Index Morocco has a high degree of risk to natural hazards and disasters. Impacts from natural hazards are estimated to cost the country \$800 million annually. Morocco is expected to become hotter and drier in the future. An increase in temperature and decrease in average precipitation by 10% to 20% is expected, with the potential of a 30% reduction for the Saharan region by the 2090s. Morocco is also likely to experience an increase of drought and flooding in some areas as well as other climate related hazards. In Morocco, flooding and drought combine for the most significant impacts, however earthquakes have also resulted in significant destruction to infrastructure and death. Extreme rainfall will result in soil erosion and land degradation The functioning of the upgraded pilot companies should not be put at risk by temperature rise and heat stress. Assessment during the PPG will collect information on the flooding risks in particular areas, and environmental studies during the execution of the Project will precisely assess the effects of soil erosion, floor or seismic risk prior to any investment. Pilot companies will be assessed against risk of flooding or heat-stress when obtaining environmental permits for their installation. Increased temperatures and more extreme heat waves that can cause negative health impacts, can be addressed through the cooling</p>

		<p>effect of green spaces. Geospace information will be used when selecting pilot projects, and all information related to climate risk in the existing environmental and social management plans of the companies will be reviewed to further design mitigation measures if need be. The evacuation plans will help the pilot company to cope with climate change related risks.</p>
Environment and Social	Moderate	<p>Risk of non-acceptance of the Project, persistent habits regarding management of construction waste and chemicals The project will deploy awareness-raising activities to increase social acceptance and ensure replication of results.</p>
Political and Governance	Moderate	<p>Political support is insufficient to promote the required regulatory and institutional framework and drive strong engagement from key stakeholders Representatives of different levels will be involved in the steering committee; the tasks of the PMU will include ensuring adequate communication with all project partners; roles and composition of each project institution will be clarified and agreed since the inception of the project. The risk will also be mitigated through building understanding and capacity of project counterparts and stakeholders during project preparation and implementation to ensure stronger ownership of project, and a clear definition of roles and responsibilities of counterparts, continuous monitoring and periodic reporting to main Government counterparts and partners.</p>
Macro-economic	Substantial	<p>Free trade with certain countries makes it difficult to reduce the</p>

		<p>imports of POPs. The risk will be mitigated by evaluating the possibility to develop policies and regulations also applicable to restricting the imports of POPs in the country. Specific capacity-building activities for customs officers could may also be envisaged if found relevant after a legal and institutional gap assessment.</p>
Strategies and Policies	Moderate	<p>Policies, regulations and programs may not be adequately adopted and implemented; weakening of political commitment. This risk will be substantially mitigated by: (i) Engaging decision makers early on in the project preparation phase, building their understanding and keep them involved during the implementation; (ii) Carefully designing and providing capacity building programs tailored to policy-makers and institutional specific needs.</p>
Technical design of project or program	Moderate	<p>Lack of baseline information impacting the logical framework of the Project and promoting inadequate targets regarding POPs reduction. The main difficulties in assessing the GEB baseline will be addressed at the very initial stages of the project, where surveys on the manufacturing sectors will be undertaken. Criteria for the calculation of the reduced GEB achievable from the reduce consumption and release will be established in detail in these stages. A residual risk on the estimation of POPs cannot be completely eliminated, but adoption of conservative criteria for the estimation will ensure that the GEB at project design are more likely underestimated than overestimated</p>

Institutional capacity for implementation and sustainability	Moderate	Project partners may not sustain the project activities including co-financing commitments. Capacities of partners to execute the Project will be assessed during the PPG through a HACT assessment conducted by GGKP. Capacity to execute the project in line with results based management will be carefully evaluated. UNIDO will also support the Project managing agreements of executing partners. Co-financing will be regularly monitored by the PEE as part of its agreement with UNIDO.
Fiduciary: Financial Management and Procurement	Low	Project funds are not adequately managed, the Project faces delays in the mobilization of co-financing. Capacities of partners to execute the Project will be assessed during the PPG through a HACT assessment. Procurement and financial management will be carefully evaluated during this assessment prior to signing any execution agreement. The Project will be managed according the financial and procurement procedures of the executing partners, and will therefore not be impacted by disharmonized rules and regulations between the implementing agency and the executing partners
Stakeholder Engagement	Moderate	Stakeholders are not properly involved and/or there is weak coordination among stakeholders, leading to inadequate project implementation. The risk that small manufacturers may not be interested in participating in project activities will be addressed by properly communicating the economic benefit to take part in project training activities, and the risk to be not prepared to the fulfilment of standards that may be endorsed by

		the government on the matter A detailed logical framework, with budget and indicators, will be integrated in the project. targets will be considered as core project targets
Other		Not applicable
Financial Risks for NGI projects		Not applicable
Overall Risk Rating	Moderate	The overarching risk to this project is low-moderate. Close monitoring of the identified risks and effective implementation of mitigation measures will ensure that the risks do not adversely impact the success and durability of the project.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

This project is aligned with the GEF-8 programming strategy and the Chemicals and Waste Focal area. The project aims to transform the supply chain by removing barriers hindering the development or adoption of alternative materials, including nature-based materials, and regenerative design. In particular, it promotes the elimination, restriction and control of POPs chemicals and plans to strengthen the national legislation related to the reduction of chemicals use as materials in a strategic and fast-growing sector. This will include the removal of market access barriers for alternatives for products containing GEF relevant chemicals, and which can reduce the production of harmful chemicals.

This project is aligned with the GEF-8 principles of cost-effectiveness; sustainability; innovation; private sector engagement and building on the use of existing national framework. The selected demonstration sectors will be an entry point to address the reduction of POPs along the life-cycle of the construction sector and through commercially available POPs alternatives.

The project is aligned with national priorities, particularly in relation to MEA obligations of the Stockholm Convention National Implementation Plans, Paris Agreement Nationally Determined Contributions (NDC), and the Convention for Biological Diversity and National Biodiversity Strategic Action Plans (NBSAP).

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities:

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

Public sector

- The **Ministry of Energy Transition and Sustainable Development** is in charge of the development of the national sustainable development strategy and monitoring of its implementation and evaluation, in coordination and collaboration with the ministerial departments concerned. It is also in charge of proposing draft laws and regulations relating to environmental protection and monitoring of their application in accordance with current legislation
- **The Ministry of Housing and Urban Policy** works on the technical supervision of the Housing sector to improve the housing production process in terms of safety, quality, and sustainability. It ensures the implementation of technical, administrative, and regulatory standards such as Construction Code, Para seismic Construction Regulations, Building Thermal regulations, Standardization of materials (participation in technical committees of the IMANOR standardization institute) and procedures, and Acoustic Regulations.
- **The Ministry of Industry, Trade, Investment, and Digital Economy** is responsible for designing and implementing government policy in industry, commerce, and new technologies. It promotes waste recycling sectors as part of the green economy and provides control and monitoring of cross-border flows through customs. This ministry also oversees IMANOR, which lays down technical standards, particularly construction materials.
- **The Ministry of Housing and Urban Policy** works on the technical supervision of the Housing sector to improve the housing production process in terms of safety, quality, and sustainability. It ensures the implementation of technical, administrative, and regulatory standards such as Construction Code, Para seismic Construction Regulations, Building Thermal regulations, Standardization of materials (participation in technical committees of the IMANOR standardization institute) and procedures, and Acoustic Regulations.
- The **Ministry of Industry, Trade, Investment, and Digital Economy** is responsible for designing and implementing government policy in industry, commerce, and new technologies. It promotes waste recycling sectors as part of the green economy and provides control and monitoring of cross-border

flows through customs. This ministry also oversees IMANOR, which lays down technical standards, particularly construction materials.

- The **Ministry of the Interior** supervises local authorities such as municipalities and town halls
- **Society of Planning of Zanata (Société d'aménagement de Zanata)** as the developer of the eco-city Zenata project introduce a set of environmental specifications that are systematically attached to the tender documents for development and construction contracts of the eco-city Zenata.
- **Urban agencies** are present in every province. They have multiple prerogatives, including producing urban development, zoning plans, and verifying the conformity of architectural projects presented for authorization and subdivision.
- **Local authorities**, such as rural communes and municipalities, issue building and demolition permits. They also hold responsibility for environmental protection in their respective areas.
- **The construction observatory** was created to develop sector-based economic intelligence relating to the construction industry, including monitoring stakeholders and indicators in the sector (prices, investments, physical achievements, industry impacts, etc.).

Foreseen role in the Project: The Ministry of Energy Transition and Sustainable Development and will have a central role in the execution of the project, especially in the planned regulatory and normative development processes. This ministerial department's mission is to propose laws and regulations to protect the environment in agreement with other ministries. Its role is also the implementation of the National Energy Transition Strategy and projects planned within the framework of the Nationally Determined Contributions (NDC) of Morocco. The project will also have to rely on the Ministry of Industry and Commerce for everything relating to the importation and trade of substances and materials and standardization through the Moroccan Institute of Standardization (IMANOR), which is under its supervision, and ensure the collaboration of the technical organizations under its control (CETEMCO for example). Furthermore, the project must rely on the means and prerogatives of the Ministry of the Interior to carry out actions in managing household waste and landfills.

Professional associations

The industries of the construction material sector in Morocco are, in general, well-organized and represented in sectoral associations, such as the Federation of industries and construction materials, which includes association members for Cement, Bricks and Tiles, Ceramics, Ready-mixed concrete, plastics, plaster and lime, aggregates and marble, and steel industry. The ability of federations to share information and promote the adoption of new practices among their members. The most active association members are:

-
-
-
- - *Association Professionnelle des Cimentiers (APC);*
-
- - *Association Marocaine des Produits du Béton (AMPB) ;*
 - *Association des sidérurgistes du Maroc (ASM) ;*
 - *Association marocaine des céramistes (AMC) ;*
 - *Association des briquetiers (AMB) ;*
 - *Fédération Marocaine de Plasturgie (FMP),*
-
- - *Fédération de la Chimie et Parachimie (FRCP) ;*

- *Association Marocaine des Industries de Peintures, d'Encres, de Colles et d'Adhésifs (AMIPEC)*

Other critical actors include:

- The Moroccan **Federation of Construction Materials**, is the professional federation of the construction materials sector which serves to promote product quality, technological advancement, building code updates, better use of materials and represent the sector before the national and international bodies and public.
- The **Federation of trade and services** « *Fédération du Commerce et des Services* » (FCS) may be concerned with importing and distributing construction products and materials on the national market.
- The **Federation of National Buildings and Public Work** « *Fédération Nationale du Bâtiment et Travaux Publics (FNBTP)* » gathers 5,000 organized companies in the construction sector, of which more than 60% are in the building sector. Its missions include organizing, defending, and representing companies and improving the sector's legislative, regulatory, and administrative environment.
- The **National Federation Property Investors** « *Fédération Nationale des Promoteurs immobiliers (FNPI)* » includes 12 regional representations. This federation, which brings together most real estate developers, is a significant player in the construction sector.

Foreseen role in the Project: The construction industry federations represent construction companies' and professionals' concerns and needs. They are essential in promoting new standards and processes to reduce hazardous chemicals and material use. Some of these federations hold great importance in the national economy, such as the Professional Association of Cement Makers (APC), and some of them are linked to international industrial groups using very advanced environmental and climate preservation technologies.

Technical institutes and organizations

- **The Public Laboratory for Testing and Studies** (LPEE – *Laboratoire Public d'Essais et d'Etudes*), is a public company with the legal status of a public limited company. The LPEE is organized in Specialized Centers based in Casablanca and Technical Centers and Regional Laboratories located in the central regions of Morocco and covering the entire national territory. It offers and ensures various services of tests, analysis, studies, controls, expertise, and technical assistance in all aspects of construction and building materials; it has also developed expertise in environment and pollution prevention.
- The **Center for Technical Studies and Construction Material** “*Centre Technique et d'Etudes des Matériaux de Construction*” (CETEMCO) is an Interprofessional Association created in December 1996 on the initiative of manufacturers of construction products and companies, with the support of the Moroccan State through the Ministry of Trade and Industry. CETEMCO's role is to provide technical advice, chemical analysis services, and certification of building materials. Its mission is also to raise awareness among its members (cement makers, brick makers, ceramists, etc.) to promote mechanical and thermal standards in construction.
- The **National Laboratory for Studies and Surveillance of Pollution** “*Laboratoire National des Etudes et de Surveillance de la Pollution*”, falls under the Ministry of Energy Transition and Sustainable Development.
- The official laboratory of analysis and chemicals research of Casablanca “*Laboratoire Officiel d'Analyses et de Recherches Chimiques de Casablanca*” is a laboratory created by the Ministry of Industry that specializes in analyzing materials and consumer products.

Foreseen role in the Project: Laboratories specializing in the analysis of construction materials (LPEE, CETEMCO, LOARC) may be requested to conduct tests on construction materials to detect the presence of hazardous substances in their composition. They can also contribute to test and develop safer and more sustainable materials. They can also help disseminate new standards, regulations, and lessons learned through the project among their members. The OFPPT, through the Institute of Building Professions (IMB- Casablanca) and the Institute of Construction Materials (IMC) of Tamesna, contributes to identifying dangerous materials in construction products, carrying out research and proposing alternatives, and disseminating knowledge and good practices among their trainees.

Professional Training in the construction sector

The office for vocational training and employment promotion « *Office de la Formation Professionnelle et de la Promotion du Travail* » is Morocco's main public Professional training body. It creates and manages Professional training institutions according to the needs of different sectors of the economy, including the building materials industry and construction. The OFPPT has 390 establishments offering 408,000 educational places at different levels in 465 professions. It also provides continuous training to workers and technicians according to needs and changes in the labor market. Some centers are specifically suited to training in specific building materials sectors: plastics, construction industry, building trades, health, safety, and environment. Each year, OFPPT creates training courses according to the needs expressed by the private sector. The FMC launched in 2014 in Tamesna in partnership with the OFPPT, the Institute of Building Materials (*Institut des Métiers de la Construction*). The main objective of creating the IMC is to provide the sector with qualified personnel capable of upgrading companies, using new materials, and following and anticipating the sector's evolution. This institute is open to young girls and thus promotes equal opportunities and the gender approach.

Civil Society

Other stakeholders, such as environmental NGOs, consumer associations, and universities, can also play a role in the project to reduce dangerous products in construction materials. They can advocate for stricter policies, conduct independent research into the safety of building materials, and raise public awareness of the risks associated with certain products.

Private sector:

Near all industrial sectors involved in the supply chain or in the construction sector are represented in Morocco, including:

- Construction Material Suppliers
- Cement production kilns
- Recycling companies
- Start-ups (Doers, Afriquia 50 Sprints, Startup Maroc, Centre des Jeunes Dirigeants, CEED Maroc, Enactus Maroc)

Foreseen role in the Project:

Local and global construction material suppliers are central to the construction sector: The project can collaborate with these suppliers to source alternative, eco-friendly materials with a reduced environmental impact. The FCS is an important player as the Federation defends its members' individual and collective interests at the national and regional levels. The Federation offers a unique platform for exchanges between members, thanks to its organization by sectors and typology of commerce, which makes it possible to bring together the players in a branch of activity. The FCS has specialized experts who provide free advice to members. The federation could act as a link between the project and the trading sector.

Waste management companies: According to Moroccan legislation, local authorities must collect and manage household waste. Due to their difficulties in effectively managing waste, including collection and landfills, most have delegated this management to private companies. Unfortunately, these companies do not manage construction and demolition waste. In addition, no landfill accepts construction waste even if the law provides that separate bins within household waste landfills should be prepared to receive non-dangerous wastes. Collaborating with these companies is essential to developing any industrial sorting or recycling system project near or inside a dump. Certain landfills have allowed cooperatives to create industrial facilities inside their premises to sort waste and remove recyclable or reusable materials. Such an initiative was born in the Rabat region in the Oum Azza landfill; today, the At-Tawafouq cooperative is a success story; it employs more than 150 people, its turnover exceeded 8 million Dirhams last year, and they made more than 500,000 Dirhams in profit. Initiatives of this type must be encouraged and duplicated, particularly in the context of the circular economy and the reduction of GHG emissions. It could also be combined with a cement plant initiative to use sorted waste.

Startups specializing in circular economy practices can offer innovative solutions for reusing and repurposing construction waste and materials. These startups can help identify opportunities for waste valorization and recovery.

Certification body: IMANOR

Foreseen role in the Project: Although the search for construction certification is still in its initial stages in Morocco, competition between operators is pushing them to highlight the environmental qualities of their products, mainly through certification. The leading labels recognized in Morocco, such as HQE, LEED, or BREEAM, are starting to be sought after by developers, and several certification offices have integrated these new labels into their service proposals (TRUSTED ENERGY, IMANOR, VERITAS, SGS, etc.). Furthermore, quality certificates are awarded by IMANOR for building products such as paints. Collaboration of the project with IMANOR is essential to promote new environmental quality standards and criteria through the project.

National financing institutions

- **The Fund for Housing Solidarity Fonds Solidarité Habitat (FSH)** was set up in 2002, succeeding to the funding mechanism Fonds Social de l'Habitat (Social Housing Fund) and aims to increase the financial resources allocated to the housing sector. The fund is mostly financed by allocations from the Government, deriving from revenues from the cement tax, which has been used to finance a number of social housing projects, including the Programme "Cities without Slums" (Villes sans bidonvilles). The trust fund, which is intended to be an effective tool in the fight against substandard housing, has facilitated access to loans for micro-finance institutions enabled micro-finance institutions. A property loan with subsidised rates is also reserved for public and private sector employees affiliated to the CNSS, self-employed persons and Moroccans of the World.

- **The Municipal Equipment Fund (FEC)** is a public bank dedicated to financing investment projects and development programmes, all under the prerogatives of territorial communities
- **The Fund for Housing Solidarity *Fonds Solidarité Habitat (FSH)*** was set up in 2002, succeeding to the funding mechanism *Fonds Social de l'Habitat* (Social Housing Fund) and aims to increase the financial resources allocated to the housing sector. The fund is mostly financed by allocations from the Government, deriving from revenues from the cement tax, which has been used to finance a number of social housing projects, including the Programme “Cities without Slums” (Villes sans bidonvilles). The trust fund, which is intended to be an effective tool in the fight against substandard housing, has facilitated access to loans for micro-finance institutions enabled micro-finance institutions. A property loan with subsidised rates is also reserved for public and private sector employees affiliated to the CNSS, self-employed persons and Moroccans of the World.
- **The Municipal Equipment Fund (FEC)** is a public bank dedicated to financing investment projects and development programmes, all under the prerogatives of territorial communities

Foreseen role in the Project: participating in the Project activities to raise awareness and building capacities of industries and property investors on the set of evaluation criteria to comply with to raise capital on green investment projects.

Multilateral financing institutions

Unlocking local access to finance for sustainable construction projects often requires collaborating with financial institutions and development banks specializing in environmental and infrastructure financing. Additionally, incubators and funding mechanisms can be vital in supporting innovative and sustainable construction initiatives:

- **The African Development Bank (AfDB)** is already financing many projects, and has partnered with Morocco for many years on private and governmental investment projects.
- **The European investment Bank**, which currently funds a programme to green the energy sector of Morocco, with investment on solar energy farms, urban railways and win energy programmes.

Foreseen role in the Project: Financial institutions will contribute, in collaboration with the Government, to the deployment of financial instruments such as guarantee funds or green bonds. Support could include the actual financing of such instruments or capacity-building for Government and corporates to meet the specific criteria related to the environment and mitigation of carbon emissions.

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
UNIDO	GET	Morocco	Chemicals and Waste	POPs	Grant	6,000,000.00	570,000.00	6,570,000.00
Total GEF Resources (\$)						6,000,000.00	570,000.00	6,570,000.00

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount (\$)

200000

PPG Agency Fee (\$)

19000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non- Grant	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
UNIDO	GET	Morocco	Chemicals and Waste	POPs	Grant	200,000.00	19,000.00	219,000.00
Total PPG Amount (\$)						200,000.00	19,000.00	219,000.00

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
Total GEF Resources					0.00

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
CW-1	GET	2,900,000.00	22400000
CW-2	GET	3,100,000.00	19600000
Total Project Cost		6,000,000.00	42,000,000.00

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Energy Transition and Sustainable Development	In-kind	Recurrent expenditures	12000000
Recipient Country Government	Ministry of Energy Transition and Sustainable Development	Grant	Investment mobilized	4000000
Private Sector	Cement production company	In-kind	Recurrent expenditures	10000000
Private Sector	Cement production company	Grant	Investment mobilized	1460000

Private Sector	Producers of construction material	In-kind	Recurrent expenditures	300000
Private Sector	Producers of construction material	Grant	Investment mobilized	500000
Private Sector	European Bank for Reconstruction and Development (EBRD) European Investment Bank	Grant	Investment mobilized	10000000
Private Sector	Global ABC	In-kind	Recurrent expenditures	500000
Recipient Country Government	Technical institute on construction materials	In-kind	Recurrent expenditures	500000
GEF Agency	UNIDO	Grant	Recurrent expenditures	40000
Total Co-financing				42,000,000.00

Describe how any "Investment Mobilized" was identified

Investment mobilized was identified as a result of stakeholder consultation, stakeholder engagement and analysis of the supply chain. Investment will be confirmed during the PPG with confirmation of companies part of the investment component

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Ganna Onysko	10/1/2023		+43 1 26026 3647	g.onysko@unido.org
Project Coordinator	Vladimir Anastasov	10/1/2023		+43 1 26026 3461	v.anastasov@unido.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name	Position	Ministry	Date (MM/DD/YYYY)
Rachid Firadi	Director of Partnership, Communication and Cooperation	Ministry of Energy Transition and Sustainable Development	10/16/2023

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place



Potential area of intervention	Geo reference
Région du grand Casablanca	N 33°32'00" W 7°35'00"
Rabat-Salé-Kénitra	N 34°00'04" W 6°46'49"
Région de Tanger-Tétouan	N 35°15'00" W 5°26'00"
Marrakech-Tensift-Al Haouz	N 31°30'00" W 8°20'00"

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title

Environmental and Social Screening

Annex H - List of figures from Project Rationale

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Significant Objective 1	Significant Objective 1	No Contribution 0	No Contribution 0

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
Influencing Models	Transform policy and regulatory environments	(multiple selection)	(multiple selection)
	Convene multi-stakeholders alliance		
	Demonstrate innovative approaches		
Stakeholders	Private sector	Individuals/Entrepreneurs	(multiple selection)
	Beneficiaries	SMEs Financial Intermediaries Large Corporations Individuals/Entrepreneurs General public	
	Civil Society	Academia Workers Unions Technical institutes	
	Type of engagement	Participation Consultation Information Dissemination	

		Partnership	
	Stakeholder engagement	Strategic Communications Behavior Change Awareness raising	
Capacity, Knowledge and Research	Capacity Development	(multiple selection)	(multiple selection)
	Knowledge Generation and exchange		
	Knowledge and Learning	Knowledge Management Capacity Development Learning	
	Learning		
	Innovation		
Gender Equality	Gender Results areas	Awareness raising Capacity development Knowledge generation and exchange	(multiple selection)
	Gender mainstreaming	Women groups Sex-disaggregated Indicators Gender-sensitive Indicators	

Focal Area/Theme	Chemicals and Waste	Persistent organic Pollutants Industrial emissions Waste Management	(multiple selection)
------------------	---------------------	---	----------------------