

Clima-Med  
Acting for Climate in  
South Mediterranean



# CLIMATE FINANCE GUIDEBOOK

A GUIDEBOOK FOR FINANCING  
LOCAL SUSTAINABLE ENERGY ACCESS  
& CLIMATE ACTION PLANS (SEACAPS)



*The UN Secretary General's Synthesis Report on the Sustainable Development Goals (SDGs) At the UN General Assembly 2014, p. 22, par. 94.*

"Many of the investments to achieve the sustainable development goals will take place at the subnational level and be led by local authorities."

*Mark Carney, UN Special Envoy on Climate Action and Finance, (former) Governor of the Bank of England (December 2019)*

"Now is the time to ensure that every financial decision takes climate change into account."



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ADB	Asian Development Bank
AFD	Agence Française de Développement
CAS	Climate Action Strategies
CPSC	Caisse des Prêts et de Soutien aux Collectivités Locales
CVDB	Cities and Villages Development Bank in Jordan
DANIDA	Denmark Development Cooperation
EBRD	European Bank for Reconstruction and Development
EFSD	European Fund for Sustainable Development
EIB	European Investment Bank
ESCO	Energy Service Companies
FEC	Fond d'équipement communal
FNVT	Fédération Nationale des Villes Tunisiennes
GCF	Green Climate Fund
GCOM	Global Covenant of Mayors
IFC	International Financial Corporation
IFI	International Finance Institutions
JRC	Joint Research Centre
KfW	The German Kreditanstalt für Wiederaufbau
La Caisse	La Caisse des Dépôts et Consignation
LA	Local authorities
MDLF	Municipal Development and Lending Fund
MRV	Measurement, reporting and verification
NCG	National Coordination Group
NDB	National Development Bank
NDC	National Determined Contributions
NFI	National Financing institution
PDUGL	Programme de Développement Urbain et de Gouvernance Locale
PFI	Partner Financial Institutions
PFI	Partner Financial Institutions
PPP	Public Private Partnerships
SEACAPs	Sustainable Energy Access and Climate Action Plans
SFD	Social Fund for Development
SIDA	Swedish Development Cooperation
SSM	SEACAP Support Mechanism
WB	World Bank

## What is Climate Finance?

Climate Finance can be defined as financing actions or projects that have a measurable effect on climate change through mitigation or adaptation. Climate Finance comprises the process of securing financial streams but also addressing the enabling conditions, including governance, project prioritisation, project preparation, etc.

On a local or sub-national level, Climate Finance covers most sectors of municipal and urban interventions that have mitigation or adaptation impacts. These can include, for example, sustainable energy, waste management and circular economy, sustainable transport, water supply, wastewater treatment, and awareness raising.

## The Guidebook's Objective

The Climate Finance Guidebook (Guidebook) recommends ways to facilitate funding projects identified in the Sustainable Energy Access and Climate Action Plans (SEACAPs) and similar stand-alone climate actions located within the boundaries of sub-national entities (cities, municipalities, villages, regions, unions of municipalities etc.) and are led by or promoted by local authorities or by central authorities.

The Guidebook's target users are national and local authorities in Clima-Med beneficiary countries (Egypt, Jordan, Israel, Lebanon, Morocco, and Tunisia), proposing applications and project funding models emphasising strengthening the private sector's involvement. This core document proposes common elements of success and recommendations to all seven countries. As their conditions and specific needs differ, additional applicability aspects are included in the "Framework Conditions for Climate Finance" annexe, typical for each country.

## The Guidebook's Content

**Section 1** briefly introduces climate finance's state of play. This is followed by discussion and guidance to local climate finance in multiple fields of climate finance actions.

**Section 2** deals with national-level actions to enable local climate finance, covering (i) national policies and regulations applied to enable local-level climate finance; (ii) enhancing the role of national development banks as intermediary actors to channel funds to cities to finance their climate actions; (iii) supporting the establishment and operations of super-ESCO Model to support local climate action; and (iv) Integrating green and climate criteria into concessions and PPPs.

**Section 3** deals with local authorities' strategies for financing SEACAP actions covering (i) best practices to mainstream SEACAPs' implementation into Green Public Procurement; (ii) Asset contribution by cities instead of cash in PPPs, and (iii) crowdfunding for climate change.

**Section 4** discusses the approach proposed by Clima-Med to establish one SEACAP Support Mechanism (SSM) for each country as a national instrument to support the preparation and funding of the SEACAPs.

**Section 5** covers ways to strengthen cooperation with financing institutions.

Each of the sections from section 2 to section 5 includes a presentation of:

- Applied modalities and arrangements in the specific addressed field.
- Factors of success/ enabling conditions/recommendations to be applied in the countries.
- Success stories and applicable examples or approaches.

## Annexes

Seven Annexes complement this Guidebook, each for one of the partner countries: Jordan, Egypt, Israel, Lebanon, Morocco, Palestine and Tunisia, including an overview of the "Framework Conditions for Climate Finance", presenting a selected set of rules, regulations, structures and examples of relevance to the overall effort to scale up climate finance in the country.

The information included in each Annex is meant to help guide climate finance actions in general and, more specifically, to enhance the planning and implementation of the recommendations in the Clima-Med Climate Finance Guidebook.

## Clima-Med Documents Complementing the Guidebook

The Guidebook complements the climate finance recommendations included in the countries' Climate Action Strategies (CAS) documents prepared by Clima-Med. It is linked to the pool of projects prescribed in the SEACAPs prepared through the CES-MED and Clima-Med, and others described in two working documents: (i) the "Development of Pilot Funding Models of SEACAP Projects" report and (ii) the "Analysis of the Financing Models of Seven Pilot Projects".

*The Clima-Med team and the European Commission Joint Research Centre (JRC) have collaborated in the preparation of this Guidebook. Through this collaboration, the JRC provided elements of climate finance for local authorities recommendations at a global level that have been described in the document.*

# 01.

THE GENERAL STATE OF PLAY:  
FROM GLOBAL, NATIONAL TO  
SUBNATIONAL CLIMATE FINANCE



## Cities account for over 65% of energy consumption and over 70% of CO2 emissions.

This introductory note gives a broad outline of the climate finance State of Play in Clima-Med's affiliated countries in the southern Mediterranean (referred to as the "Region" in this document) in terms of the basic need to mobilise funding for climate actions within local development plans; limitations of international climate funds outflow; the primary sources and forms of sub-national finance to cities through national authorities, and critical obstacles that restrain its flow including the limited capacity of local authorities (LA) to finance and to contract loans for climate actions, restricted investment readiness, and difficulty of identifying and structuring investment opportunities.

### 1.1. Mobilising Local Climate Finance

On a global scale, cities account for over 65% of energy consumption and over 70% of CO2 emissions[1]. They are highly vulnerable to climate change, with more than 70% of cities already experiencing climate change impacts on their citizens[2]. It is estimated that 50% to 80% of needed climate mitigation opportunities are to be implemented at the local level, considering that related critical sectors like water and sanitation, waste, transport, and building stock issues are managed or controlled wholly or partly by local institutions. This is also the case for climate change adaptation and disaster resilience measures such as urban green and blue infrastructure, flood prevention, etc. Hence, consolidating local authorities' institutional and financial capacity

to deal with climate change-induced pressures and impacts on cities is crucial to undertake mitigation and adaptation measures.

According to an estimate announced by the Global Covenant of Mayors (GCoM), trillions of dollars will be required to help build cities' low-emission and climate-resilient infrastructure. New financing facilitations and solutions are thus essential to meet the growing opportunity for investment at the local level.

Applied national forms and sources of subnational finance through national authorities: Subnational finance or financing climate actions in cities - primarily through national authorities - can take the form of direct or

indirect grants on the one hand and Financial Instruments on the other hand, including specialised credit lines through Financial Intermediaries; commercial loans; guarantees; co-financing, or Wother equity instruments addressed to subnational governments or local authorities. Subnational finance is applied through recurrent finance or project-based transfers. Recurrent finance can be done through intergovernmental funds transfers, complementing cities' revenues (from the city budget or others). Project-based transfers can be grant transfers, borrowing from special public funds for subnational governments, and Public-Private Partnerships (PPP).



[1] [https://www.c40.org/why\\_cities](https://www.c40.org/why_cities)

[2] Climate Policy Initiative. (2021). The State of Cities Climate Finance.

## 1.2. Main Obstacles to Subnational Climate Finance

Main obstacles that restrict climate action finance in Southern Mediterranean countries can be grouped under three main issues with a wide range of multicausal, interlinked, and related issues that are also addressed in relevant sections of the Guidebook.

- **The limited aptitude of local authorities to finance mitigation and adaptation measures**

While sharing similar roles and mandates, the climate-action capacity of LAs depends on many factors.

In general, LAs in Clima-Med beneficiary countries need more know-how and non-adapted legal and administrative structures that would allow them to competently and resourcefully set up and fund climate actions and altogether urban actions interventions. At the same time, LAs suffer from creditworthiness and legal restriction to contract direct loans.

- **Inadequate investment readiness to unlock project pipelines**

While an increasing number of cities in the region are developing climate action plans and establishing and tracking their own locally determined contributions (associated with Nationally Determined Contributions), they typically lack the resources and capacity to turn such plans into structured projects of sufficient maturity with robust business plans. Hence, robust pipelines of low-carbon and climate-resilient infrastructure projects of adequate maturity and ready to be presented to investors still need to be included.



- **Difficulty in identifying and structuring climate investment opportunities**

The limited pipeline of bankable climate change projects may be attributed to the difficulty of structuring feasible climate investment opportunities into bankable projects. This, in turn, is a constraint for developing a dynamic and efficient market for financing green and climate-change-related projects. This reduces the ability of financial institutions to scale up sustainable and climate finance in the region.

Moreover, the low level of private investment in climate change projects is due to the nature of their risk-return profile. This is especially relevant for CC adaptation projects which often need more revenue streams. Most such projects are capital-intensive, and the level of risk is very high. Moreover, limited human resources and technical know-how hinder market formation and private investment.

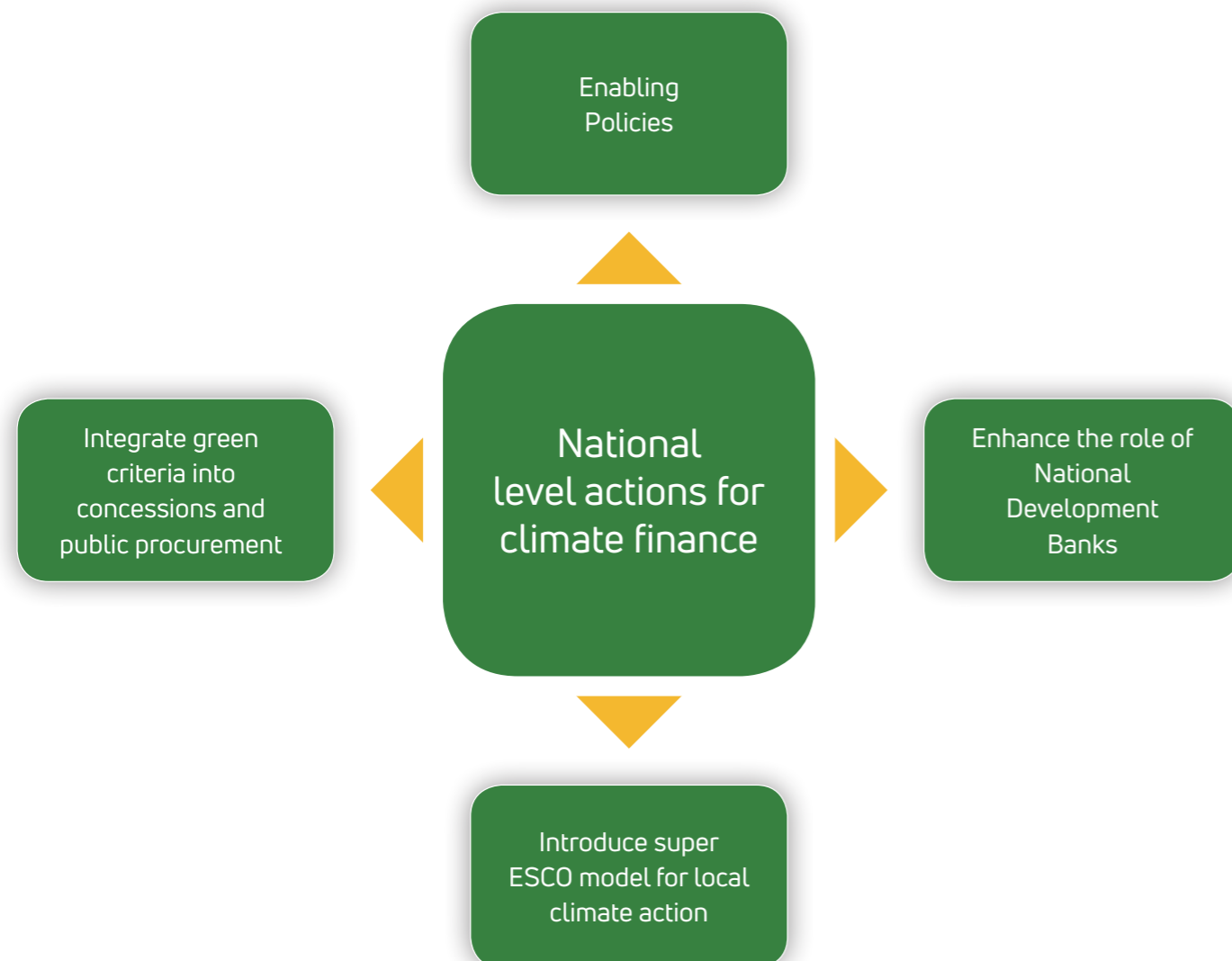
# 02.

NATIONAL-LEVEL ACTIONS  
TO ENABLE LOCAL CLIMATE FINANCE



Different nationally driven forms of subnational finance that could affect climate action funding are tackled in this section. We first refer to currently applied subnational finance modalities and arrangements. Then follows the identification of main policies and regulations-related obstacles. The chapter also includes success factors towards consolidating subnational climate finance mechanisms tailored to each country. Finally, the chapter contains recommendations for measures to be taken by national authorities to improve local climate finance.

## Different perspectives of national-level actions for climate finance



## 2.1. National Policies and Regulations to Enable Cities' Climate Finance

### 2.1.1. Modalities and arrangements

A large part of the funding for climate action in cities is provided through central government institutions (e.g., ministries), as most countries use financial transfers from national institutions to support subnational infrastructures, such as housing, health facilities, schools, roads, and water infrastructure. Similar transfers would also be applicable and could support SEACAP projects and similar local climate actions.

Country-adapted policies and measures can consolidate the role of local authorities and increase their capacities to raise and manage funds for climate actions in order not only to open the way for standalone projects but also to promote a robust national climate finance system that enhances the climate finance ability of local authorities towards implementing concrete projects. Applications of such systems can integrate or be part of the proposed SEACAP Support Mechanism (SSM).

Recommended measures for enabling subnational finance may include increasing the role, capacity, and capitalisation of national development banks; designing or facilitating business model proposals for pilot projects; establishing super-ESCO companies to coordinate individual ESCO companies and hence attract private capital to the energy efficiency sector; and integrating green and climate criteria in PPPs.

**Subnational finance can take the forms of:**

- recurrent finance, commonly from own revenues,
- intergovernmental transfers of funds from the central government,
- project-based transfers,
- direct or indirect grants,
- credit lines (implemented by Financial Intermediaries) leading to loans,
- matching grants,
- matching loan,
- financial guarantees,
- and other forms of equity for subnational governments and their associated entities.

**Providing matching loans is relatively limited in many countries and is usually delivered via intermediate actions of private sector entities or PPP.**

Moreover, subnational finance can be accompanied by technical assistance for project prioritisation, preparation, or implementation, among other forms of capacity building that help a local authority move forward with implementing their SEACAPs. Capacity improvement supports the subnational government in firming up the fiscal discipline required to manage the loan (including local revenue generation for repayment). It allows it to follow a trajectory of creditworthiness that can progressively improve.

Subnational finance transfers can also incentivise subnational governments to improve their capacity and consolidate their governance. Alternatively, funding is commonly provided by national development banks or other private

financial intermediaries at preferential conditions (e.g., interest rate, grace period, collateral, etc.). When legally permitted, loans are provided on market-based terms via private finance institutions.

The finance structure will first depend on the type of project proposed for financing. Either it is a revenue-generating project (e.g., landfill, clean fleet) or a project that does not generate financially relevant revenue (climate adaptation projects). The second issue affecting the structure is the subnational government's creditworthiness.

Entities capable of transferring subnational finance can be concessions or development finance institutions (e.g., La Caisse des Dépôts et Consignation) designed specifically for this purpose.

## Examples of policies and regulations obstacles that hinder the capacities of local authorities to access climate finance include

### **The limited institutional ability of national implementing agencies to lead climate action**

The relatively weak capacity and overall governance of implementing agencies (e.g., ministries, agencies, etc.) may limit access to the private and public climate finance available nationally and internationally to local authorities or projects such as those included in the SEACAPs. The weak governance includes aspects such as the lack of reliable and consistent data sets necessary for the planning (e.g. carbon emission, threats of climate change); inefficient national-local institutional coordination mechanisms, under-developed (or missing) systems for measurement, reporting and verification (MRV) especially by local authorities; lack of personnel at the national and local level capable of developing funding proposals and able to adequately communicate climate-related risks (and opportunities) among cities and national authorities.

### **Deficiency of climate action-related data, standards, and definitions**

Lack of consistent, good-quality data and deficiency of commonly accepted metrics, classification standards (such as the definition of green investments), definitions and methodologies are

all barriers to promoting sustainable finance in general and urban climate finance. These elements are necessary to adjust to business-related risks efficiently or adequately capitalise on opportunities. Climate-specific investment opportunities will fail to pass through risk assessment and due diligence decision-making processes successfully. Investors need well-structured information to make informed decisions and partner with local authorities.

### **Imbalances between diminishing revenues and climate-related public expenditure**

The need for balance in public spending and tax revenues at the national and local levels is paramount for fiscal sustainability and stability in many countries. This is challenging even in the best of times. However, with climate change, governments will face severe pressure to increase public expenditures for mitigation, adaptation, and disaster-related emergencies, such as household disaster relief and reconstruction of the infrastructure. At the same time, climate change will also affect different sectors of the economy, such as agriculture, tourism, energy, and others, reducing the tax base and exacerbating budgetary imbalances.



### **Inadequate enforcement mechanisms for green finance**

The need for adequate enforcement mechanisms for climate finance policies, rules and regulations is among the top barriers to scaling green and climate finance. Clima-Med beneficiary countries have yet to enact explicit climate-related financial laws (such as corporate disclosure of climate-related information). Sustainable and, thus, climate finance policies and rules are generally non-mandatory when adopted, replacing compliance with voluntary adoption. Therefore, two parallel strategies must happen simultaneously: better enforcement of mandatory measures (including penalisation of non-compliance) and encouragement of voluntary measures.

### **Lack of incentives to finance the transition to green, climate-resilient economies**

A lack of explicit incentives that encourage finance providers to promote climate-proofing and greening of the financial sector is a barrier limiting the potential role of national financial institutions in supporting the transition. While incentives have been offered within the sustainable energy framework to promote private investment in renewable energy and energy efficiency, finance providers have not been explicitly incentivised to participate in scaling up green and climate finance in cities through measures such as preferential interest rates and credit allocation policies, as has been done in countries such as Bangladesh and India.

## **2.1.2. Elements of success and recommendations**

**In each country, the above obstacles should be further explored by relevant national financial authorities (involving Clima-Med National Coordination Group (NCG) members). Following this analysis and considering the advanced recommended steps below, tailored approaches to overcome these obstacles should be devised in the framework of national climate actions and programs and potentially through the SSM.**

### **Climate finance regulations**

In each country, concerned national authorities should take steps to adapt, issue and enforce climate finance guidelines and regulations tailored for the subnational level. The goal would be to boost the capacity of the financial sector's governance bodies (regulators and supervisors, central banks, and non-banking financial institutions) for climate finance on a local level. From this transformation perspective:

- Consider applying incentives to encourage and proliferate subnational climate actions (e.g., preferential rates and credit allocation policies with priority to projects of local authorities).
- Adopt climate finance taxonomy where financial sector regulators mandate finance providers adopt climate finance metrics, definitions, standards, and methodologies already developed elsewhere (e.g., in the EU).
- Mandate national financial institutions (NFIs) to integrate climate change risk considerations into their stress-testing approaches and to use scenarios based on climate change trends as

part of their overall risk management practices.

- Establish highly capable Climate finance units within the NFIs to introduce climate finance merits and promote/lead correlated practices, e.g., increase climate-related lending.
- Develop a pool of well-trained, qualified industry experts such as lawyers, accountants, and data providers to support the sustainable and climate subsector of the finance industry.
- Enhance the institutional capacities of national implementing agencies to collect and categorise data efficiently; track climate mitigation and adaptation actions and measures; identify related financing needs and develop funding proposals.
- Improve coordination among various actors (potentially supported by the SSM)—including government entities, local authorities, financial sector regulators, financial intermediaries, and investors—to communicate better climate change financing mitigation and adaptation needs and associated investment risk opportunities.

### Other relevant areas where NFIs can play a productive role regarding climate finance

- Public resources: NFIs can get an agreement on aligning national finance with climate action policies and programs required to achieve local climate commitments and guide resource allocation to effective climate action budgeting. As a step forward, this may allow countries to assess the percentage of GDP spending on climate change and the sources of this spending.
- Public procurement: NFIs can oversee procurement reforms and functions, which offer multiple opportunities to promote climate-friendly technology, goods, and services. The scale of governments' collective procurement spending makes it one of the most potent policy instruments for stimulating innovation and adoption of climate-friendly goods, services and works, from equipping schools to building transportation systems to procuring stationery supplies.
- Fiscal incentives: Finance ministries can promote the alignment of fiscal incentives with national and subnational climate commitments, including incorporating climate considerations in economic reform or stimulus packages, including post-pandemic packages.

- Policy reforms: Finance ministries can promote reforms to remove environmentally harmful incentives and subsidies (e.g., fuel subsidies) and introduce carbon pricing, which can positively influence the private sector and consumer behaviour and contribute to an influx of green and climate-related investments in research, innovation, and development.
- New climate investment tools: Finance ministries can introduce and support the establishment of new instruments, such as climate bonds, to finance new and existing projects that offer climate change and impact control benefits.
- Public-private partnerships: Finance ministries can propose legislation requiring that public investments and public-private partnerships follow environmental standards and that risks related to climate change, disasters and environmental impact are assessed.

The above issues and recommendations would be presented and reviewed, then associated with the institutional role consolidation and establishment of the SSMs proposed by the Clima-Med project.

The table below lists additional success elements with their prioritisation levels per country.

Elements of Success							
Other areas where NFIs can play a productive subnational climate finance role	Priority						
Countries	Lebanon	Tunisia	Palestine	Egypt	Israel	Morocco	Jordan
Incentivize intermunicipal collaboration, mergers, and ad-hoc subnational clusters / groups under NDC priorities and SEACAPs' work	RHP	RP	RP	RP	Extg	Extg	RHP
Consolidate coordination mechanisms exist between the national and subnational governments around NDC priorities and SEACAPs' implementation	RHP	RP	RP	RHP	Extg	Extg	Extg
Institutionalize subnational clusters under NDC priorities and SEACAPs' implementation	RHP	RP	RP	RHP	Extg	Extg	Extg
Allocate lump sum funding from the national government for subnational merging for climate actions and SEACAPs' actions	RP	RP	RP	RP	Extg	Extg	Extg
Restructure intergovernmental transfers prioritizing NDC priorities and SEACAPs' actions	RHP	RP	RP	RP	RP	RP	RP
Prepare / consolidate legal system allowing subnational government capacity and technical ability to manage grants and loans	RHP	RHP	RP	N/A	RP	Extg	RHP
Adapt the municipal taxation system to the implementation of NDC	RHP	RP	RP	RP	RP	RP	RP
Support to solving challenges to tax collection	RHP	RP	RP	RP	RP	RP	RP
Allow subnational governments to set taxes linked to NDC priorities	RID	RP	RP	N/A	RP	RP	RP
Modernizing financial management and institutionalizing transparency	RID	RP	RP	RP	RP	RP	RP

RP: Recommended, including when integrated or interactively with decentralisation policy  
RHP: Recommended High Priority to prioritise as soon as possible  
N/A: Recommendation is not applicable in the country's framework  
Extg.: The system already exists in the country.



### 2.1.3 Success stories

#### Ambassadors for Sustainable Development programme in Egypt

The Ministry of Environment and Planning of Egypt and the Institute for Governance and Sustainable Development are developing national capacities through a programme called Ambassadors for Sustainable Development[3] .

Like Al Gore's Climate Reality Project, the programme – which can be applied to undertaking subnational climate actions - trains trainers to understand and communicate the concept of sustainability and climate action[4] . The programme started by training people aged 18-35 and is growing to target government officials and NGOs.

The programme utilises virtual tools so that it can continue operating despite (e.g., COVID-19) restrictions, with 1-hour recorded lectures from a group of top scientists and academics in different fields (biodiversity, sustainable finance, green economy), followed by an interactive Zoom session for participants to ask questions and share their

experiences. The programme received more than 7000 applicants, and 1000 were selected with cohorts of 100, 150 and 200 to allow the programme to be administered.

The first five-day face-to-face session began in June 2021 when the first 25-30 participants learned how to communicate this message and organise a training session. A test at the end of the training identifies participants qualified to deliver the message, and trainers receive an accredited certificate from the National Institute for Governance and Sustainable Development. Certified trainers are contacted annually to demonstrate that they delivered the Ambassador's message.

[3] <http://nigsd.gov.eg/be-an-ambassador/>  
 [4] <https://www.climateRealityProject.org/>

#### Abu Dhabi, Dubai & Egypt central banks participate in the Network for Greening the Financial System

The Network for Greening the Financial System (NGFS) is a group of central banks and supervisors who agree to share best practices, contribute to developing environment and climate risk management tools, and mobilise finance to support the transition to a sustainable and climate-action-oriented economy.

Launched in 2017 with eight founding members, the group has grown to 95 with 16 observers. The Abu Dhabi Global Market Financial Services Regulatory Authority and the Dubai Financial Services Authority both joined the Network in 2019, and Egypt's Financial Regulatory Authority joined in 2020[5] .

The Network defines and promotes best practices and conducts or commissions analytical work on green finance under five work streams:

- Macroprudential / Supervision, which studies how to assess and integrate climate and environmental risks and differentiate risks between green and other assets.
- Macro financial, which develops climate scenarios, guides financial stability monitoring, and helps to

size the macro-financial impact of climate-related risks.

- Scaling up green finance, which promotes responsible investment principles and boosts market transparency through reporting and disclosures.
- Bridging data gaps, which identifies and closes gaps in data relevant to the other workstreams.
- Research, which updates critical research questions and NGFS coordination.

Joining the NGFS demonstrates that a country's monetary authority recognises the unique financial system risks posed by climate change, aims to accelerate finance towards activities that will mitigate them, and wants to share and learn best practices.

[5] <https://www.ngfs.net/en>

The new OECD subnational green budgeting guidelines were developed based on existing subnational green budgeting practices and two green budgeting case studies. Any region or municipality can use these guidelines and the accompanying recommendations to develop their own green budgeting practice or strengthen an existing one[6].

## OECD Subnational Green Budgeting Guidelines

Conduct a diagnostic of local environmental and climate challenges as a pre-requisite to launching a green budgeting practice

Ensure Strong, high-level involvement and support from both the administrative and elected sides of government

Ensure the practice relies on a robust, shared scientific basis to facilitate public trust and ensure the practice can adapt to changing scientific evidence

Adopt a step-wise approach to implementing green budgeting in order to learn from previous steps and reinforce the alignment of the practice with local strategic priorities

Integrate the green budgeting practice into existing public financial management procedures and tools to help ensure the practice endures

Include revenues within the scope of the green budgeting practice to ensure the entire budget aligns with green objectives

## How Egypt Leverages the Green Climate Fund

The Green Climate Fund (GCF) helps developing countries respond to climate change, particularly relevant to Egypt.

It has two primary funding tracks[7]:

- A Technical Assistance track that helps countries develop capabilities, formulate projects, accredit domestic institutions, and establish and comply with global climate frameworks.
- A project finance track that uses loans, grants, and de-risking instruments to mobilise public and private sector finance towards mitigation and adaptation projects.

Egypt has taken an active role in the GCF, including sitting on its board and using its technical assistance support to put in place enabling policy frameworks to support mitigation and adaptation projects. It has received over USD 300 million from the GCF across four projects. A 105 million USD climate adaptation project provides soft structures for

coastal defence and integrated coastal management to protect the vulnerable Nile Delta against damage from coastal flooding. A climate mitigation project called the Renewable Energy Financing Framework provides technical assistance to support renewable energy integration, policies, and planning. Two cross-cutting projects focus on finance. One project implements a Sustainable Energy Financing Facility, an on-lending programme that provides credit lines to Partner Financial Institutions (PFI) for energy efficiency, renewables, and climate resilience projects. The other demonstrates the commercial viability of climate finance projects and provides loans through local PFIs for energy, agriculture, forestry, waste, and water projects.

[6] State of play: Subnational green budgeting practices in OECD and EU countries, <https://www.oecd-ilibrary.org/sites/982f1fdd-en/index.html?itemId=/content/component/982f1fdd-en>

[7] <https://www.greenclimate.fund/>

## 2.2. Enhancing the Role of National Development Banks

This subsection tackles the role and operations of NDBs. It explores the main elements of their effective functions in supporting the funding of actions within SEACAPs and other local climate actions.

### 2.2.1. Modalities and arrangements

To remedy market stoppages in subnational borrowing, central governments in the southern Mediterranean region have relied on financial intermediaries to build the capacity of local authorities to access debt markets, both by providing them with technical assistance and capacity building, facilitated access to grants and loans (e.g., Municipal Development Funds), credit enhancement mechanisms (e.g., Guarantee Corporations or Guarantee Funds), or Special Purpose Vehicles (SPVs) (e.g., sectoral pooled funds that provide finance for small municipalities or urban development investment corporations that borrow in the market for municipalities).

A public entity NDB can be a fund created with contributions from the national budget and managed by a government agency (e.g., Ministry of Finance). In some cases, NDBs can also be fully private entities, such as commercial banks, that provide access to private funding from domestic or international sources. Where an NDB is different from a commercial bank is its mission of development, as it aims to mobilise resources for development projects in line with the country's priorities, such as climate action.

The role of NDBs can be crucial when oriented to support funding of LAs' climate projects, in line with their task to:

- Advance public policies and accelerate the reaching of targets, including climate ones.
- Improve LA capacity to address short- and long-term needs by setting market signals leveraging international and national private climate-related investments.
- Contributing directly to reducing the incremental cost of implementing NDC priorities and SEACAPs' actions.
- Addressing demand-side barriers.
- Providing the necessary incentives to mobilise the supply of climate-friendly private investment.

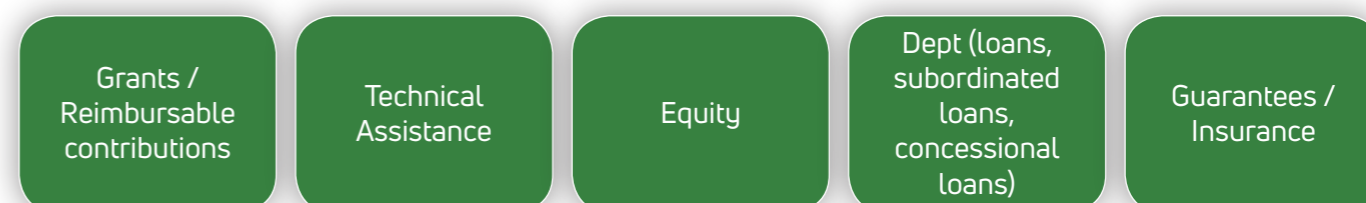
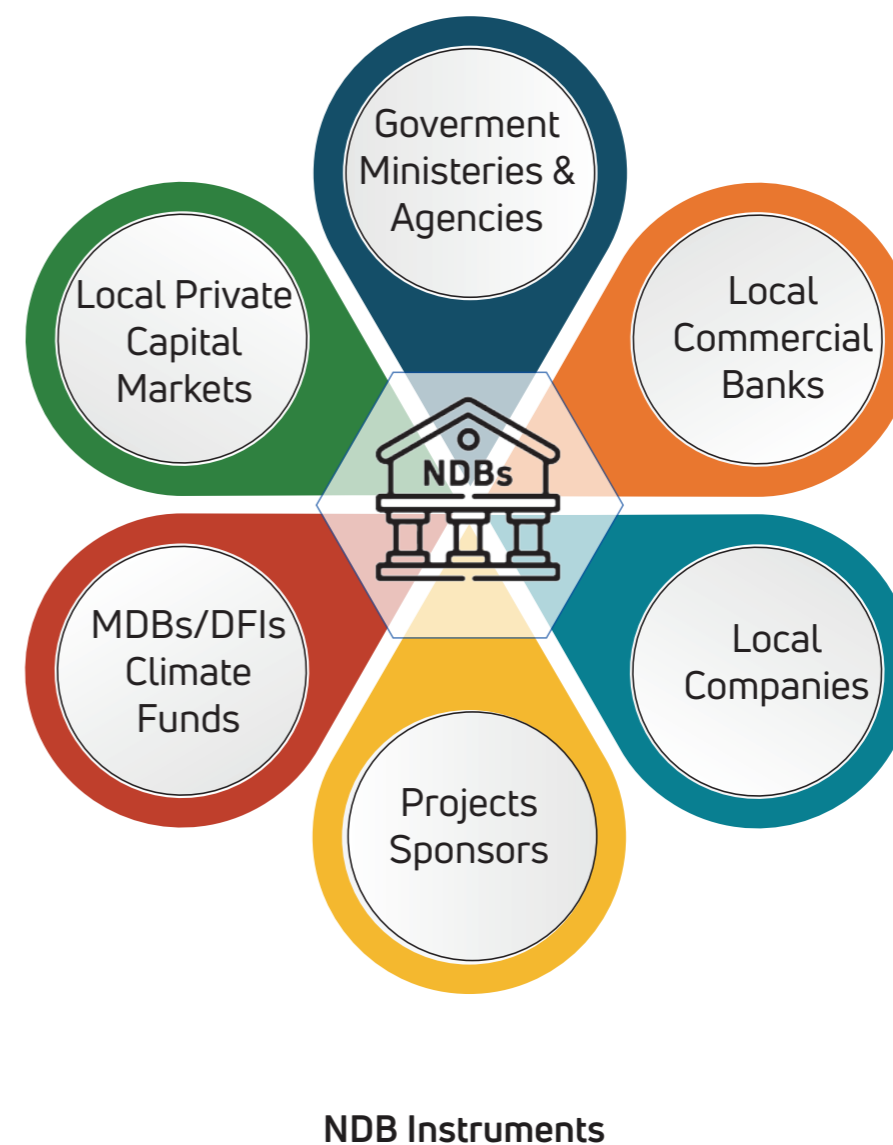
There are five specific functions of NDBs in the development process that can be geared towards local climate actions. These are:

- Providing counter-cyclical finance.
- Encouraging innovation and structural transformation.
- Enhancing financial inclusion.
- Supporting infrastructure financing.
- Promoting environmental sustainability by combating climate change.

In conclusion, NDBs can play a role in mobilising and catalysing critical investments to transform into a low-carbon and inclusive economy at scale.

**In the effort to leverage NDBs for local climate action, it is vital to build multilateral cooperation with different actors, including ministries and governmental agencies; local commercial banks; local private sector/companies; project sponsors; multilateral development banks or Development International Financing Institutions (IFIs); and local private capital markets.**

### NDB and interaction with other institutions



### 2.2.2. Elements of success/ recommendations to be applied

#### Enhance collaboration of operating NDBs with local authorities

In southern Mediterranean countries, several NDBs are already collaborating with local authorities, and this collaboration should be made more systematic, considering the availability of SEACAPs. NDBs working with NAs include the "Municipal Development and Lending Fund" (MDLF) in Palestine; the "Cities and Villages Development Bank" (CVDB) in Jordan; the "Caisse des Prêts et de Soutien aux Collectivités Locales" (CPSCL) in Tunisia; the "Fond d'équipement Communal" in Morocco; and the "Social Fund for Development" (SFD) in Egypt.

#### Expand the application of NDBs' combined sets of funding instruments

NDB can combine different groups of instruments to meet the needs of a project in its pre-investment and investment stages.

- During the pre-investment phase, NDBs can obtain and use grants or financial contributions to offer technical assistance activities to local authorities or private entities, such as capacity building, creating demand for companies and projects, developing expertise in the preparation and assessment of climate projects, undertaking

feasibility and environmental impact studies, preparing business plans; and designing and implementing monitoring, reporting, and verification systems for results.

- During the investment phase, the NDB can provide loans or guarantees, as best suited, to bear (or at least share) the risks that the private sector or local authority is not willing or able to bear.

To improve the application of those instruments in each country, several policy recommendations can be considered and applied following a detailed analysis of current operations, followed by a prescription of specific implementation methods.

- Define and provide a clear mandate and vision for the NDBs to support the implementation of the SEACAPs' climate actions and to link NDB priorities to climate-sensitive urban development or operations of local authorities.
- Establish dedicated NDB financing mechanisms tailored to subnational governments' conditions and relate to NDC priorities, e.g., to support funding of climate-smart urban infrastructure.
- Design and institute de-risking tools for attracting the private sector to fund local climate actions, such as guarantee or equity programs or credit support mechanisms.

- Allocation of transfers to promote grants/loans that consist of an initial borrowing to generate incentives for weaker subnational governments, thus improving their capacity and modifying their behaviour so they later borrow on more market-based terms.

- Enable NDBs to provide customised financial management training and technical assistance to borrowers or beneficiary local authorities for each project funded by or through the NDB.

#### Additional elements of success with their prioritisation levels per country.

National policy recommendations to enhance NDB's local climate action support role	Priority						
	Lebanon	Tunisia	Palestine	Egypt	Israel	Morocco	Jordan
<b>Provide clear mandate and vision for the NDBs to support the implementation of the SEACAPs</b>	RHP	RP	RP	RP	RP	RP	RHP
<b>Establish NDBs' climate financing mechanisms adapted to subnational governments' conditions</b>	RHP	RP	RP	RHP	RP	RP	RHP
<b>Enable NDBs to provide training and technical support to set and implement climate projects</b>	RHP	RHP	RHP	RP	RP	RHP	PP
<b>Design and institute de-risking tools for attracting the private sector to fund local climate actions</b>	RHP	RP	RHP	RHP	RP	RHP	RHP
<b>Allocate transfers to promote grants/loans to generate incentives for subnational governments</b>	RHP	RHP	RHP	NA	Extg	RHP	NA

RP – Recommended, including when integrated or interactively with decentralisation policy  
RHP - Recommended High Priority to prioritise as soon as possible  
N/A - Recommendation is not applicable in countries' framework  
Extg- The system already exists in the country.

### 2.2.3. Success stories

#### *La "Caisse des Prêts Communaux Tunisiens" (CPSCL) or the Tunisian Communal Loan Fund*

The CPSCL[8] main objectives and activities consist of stimulating the investment effort of LAs by mobilising resources needed to finance their respective projects; improving the system of municipal finances, local tax collection and municipal operating expenses; enhancing LAs' management capacity (through training and introducing modern means of municipal management); and provide loans, human and financial overall support to consolidate LAs' investment projects.

Other CPSCL-related activities include support funding local investment programs; technical assistance to LAs in identifying, planning, implementing, and monitoring their investment projects; and assistance to improve resources' management, budgeting, and rationalising investment expenditure.

CPSCL resources are generated from allocations from the Common Fund of Local Authorities; annual allocation from the State budget; a collection of annuities for the repayment of loans granted by CPSCL to LAs; and loans contracted by CPSCL from donors such as the WB, the AFD, the EIB and others. The CPSCL grants resources to the LAs through loans and subsidies to fund investment projects, grants (on

an exceptional basis), and subsidies of interest on loans.

The interest rates on loans are set between 5.5 and 8 per cent, with a repayment date varying between 5 years depending on the sector. The CPSCL is fully qualified to spearhead funding of LAs climate projects, knowing that it is one of several bodies in Tunisia that can support this role, including but not limited to the Ministry of Local Affairs and Environment, the governmental "Programme de Développement Urbain et de Gouvernance Locale » (PDUGL), the Ministry of the Interior and Local Development, The "Fédération Nationale des Villes Tunisiennes" (FNVT) and the « Centre de Formation et d'Appui à la Décentralisation » (CFAD).

#### *Le Fonds d'Équipement Communal" (FEC) in Morocco*

The FEC's[9] mandate is to contribute to the development of local communities; hence its operations can be adapted and tailored towards local climate actions. FEC provides grants and loans to local authorities and unions of local authorities, technical assistance in project identification, and support in project evaluation and monitoring.

As a Bank with a mission of collective utility, the FEC finances the local public sector and ensures the strengthening of local expertise and the promotion of local investments that foster development. The FEC thus offers its clients products and services tailored to their needs and endeavours to provide them with the technical assistance necessary to prepare and implement their investment programs and projects. A significant share of the Fund's activities can be oriented towards supporting SEACAPs and climate actions in cities and rural communities[10].

The FEC accompanies its clients in expressing their investment choices and offers them the possibility of concretising their projects which aim to improve the living environment of the Citizens. Thus, the FEC intervenes in various sectors which cover all the prerogatives of the Territorial Communities, in particular:

- Urban upgrading, urban mobility, and public lighting.
- Rural development and electrification.
- Development of economic activity zones, sports and leisure infrastructures, tourist facilities, merchant facilities, and green spaces.
- Sanitation and access to drinking water.
- Waste management and environmental protection.
- Upgrading schools.

[8] <http://www.cpscl.com.tn/accueil.php?langue=fr>

[9] <https://www.fec.ma/>  
[10] Idem.



### The Municipal Development and Lending Fund (MDLF) in Palestine

**The Fund[11] is mandated to provide municipalities, villages and local councils, municipally controlled institutions, and local government units with improved financial products and services;**

to facilitate their access to capital markets; to improve the delivery of local infrastructure and municipal services, promote economic development, and develop municipal efficiency and accountability. The MDLF also aims to enhance the mobilisation of donor assistance, strengthen intergovernmental financial transfers, and facilitate emergency response capacity for LAs. The MDLF regularly collaborates with IFIs, the French Development Agency (AFD), World Bank, KfW, or cooperation units such as Denmark Development Cooperation (DANIDA), Swedish Development Cooperation (SIDA), Belgium Government, as well as the EU.

#### **Among others, MDLF's main programs for implementing SEACAPs are:**

**-MDP (I, II, & III):** The "Municipal Development Program" (MDP) is a development and reform program designed by the MDLF, through which the MDP provides infrastructure grants to the Palestinian municipalities and support to improve their performance by building operational, planning, and financial capacity. Its cornerstone is the "Grant Allocation Mechanism", a formula-based method for distributing funds to municipalities for capital investments.

#### **- The Gaza Solid Waste Management Project[12]**

is a comprehensive strategic infrastructure and capacity building project, where MDLF is managing the southern component of the project covering 3 out of 5 governorates in the Gaza Strip, comprising approximately 64% of the Gaza Strip's total geographic area inhabited by 46% of its total population, or about 800,000 people.

#### **- The Integrated Cities and Urban Development Project[13]**

is a 4-year World Bank-funded project aiming to strengthen urban areas' institutional and technical capacities to plan for sustainable urban growth by providing, among other things, technical assistance, goods, and training.

#### **- The Local Government Services Improvement Project[14]**

aims to consolidate the local government financing system and improve local service delivery in villages.

[11]: <https://www.mdlf.org.ps/en/Home/Index>

[12]: <https://projects.worldbank.org/en/projects-operations/project-detail/P121648>

[13]: <https://www.mdlf.org.ps/Document/Integrated20%Cities20%and20%Urban20%Development20%Project.pdf>

[14]: <https://www.mdlf.org.ps/Document/Local20%Government20%Services20%Improvement20%Project.pdf>



### The Indonesia Infrastructure Guarantee Fund (IIGF)

The IIGF<sup>[15]</sup> is a 100% state-owned enterprise focusing on encouraging private-sector co-investment in large projects<sup>[16]</sup>. The IIGF comprises three specialised funds: a land-acquisition fund, a guarantee fund, and a donor-financed infrastructure-investment fund.

The land acquisition fund provides an asset management service for the government and collateral to engage in large operations. The donor-financed fund allows the IIGF to receive loans and grants from international financial institutions, reducing the cost of capital for sector-specific projects, such as many at the city level. Lastly, with the guarantee fund, the IIGF provides guarantees to commercial banks. The guarantees are used to cover potential partial losses associated with a customer (or a city) defaulting on their loans. The IIGF is a good example of an institution (with an NDB mandate) that leverages additional private capital by sharing risk with commercial banks.

### The Tamil Nadu Urban Development Fund (TNUDF)

In India, the Tamil Nadu Urban Development Fund (TNUDF)<sup>[17]</sup> is a financial intermediary facilitating access to capital markets for infrastructure financing by urban local bodies, including municipal corporations, municipalities, and town panchayats in the Indian state of Tamil Nadu.

The fund is managed by Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), a public limited company with equity participation from the state of Tamil Nadu and various private financial institutions, making it a PPP with the private sector holding the majority. This arrangement allows for public-sector involvement but keeps the fund's management at a distance from the government.

TNUDF enables debt financing of local infrastructure development projects by providing access to capital markets directly or through pooling arrangements. It also offers grants for public infrastructure targeting subnational authorities with more limited financial capacities. The technical assistance and capacity building provided by TNUDF increases local authorities' fiscal, technical, and managerial abilities. This increases transparency and makes LAs more attractive to private investors. It also stimulates further reforms in accounting, tax mobilisation, e-governance, decentralisation, etc.

[15] <https://www.iisd.org/credit-enhancement-instruments/institution/indonesia-infrastructure-guarantee-fund/>

[16] Asian Development Bank. (2012). Subnational Finance for Infrastructure: Potential Roles and Opportunities for ADB. Priyanka Sood, Marshall M. Mays, and Michael R. Lindeld No. 20.

[17] <http://tnuifsl.com/tnudf.asp>

## The Philippines' Local Government Unit Guarantee Corporation (LGUGC)

**In the Philippines, the Local Government Unit Guarantee Corporation (LGUGC) provides another type of mechanism for subnational lending. It is a private financial guaranteed institution incorporated in 1998 by the Bankers Association of the Philippines and the Development Bank of the Philippines.**

LGUGC does not lend directly but provides financial guarantees for local government units/ local authorities and other public and private entities providing services at the local level, such as water districts, electric cooperatives, renewable energy technology projects, and medium and large enterprises. Those financial guarantees enable them to access capital for infrastructure from private-sector financial institutions. It thus considers itself "the private sector link in public-private partnerships for local development financing."

The basic LGUGC approach is to provide guarantees to partner financial institutions in case of borrower default. For water projects, USAID provides a co-guarantee of up to 50%. In return, the partner financial institution, usually an LGUGC bank or subsidiary, offers loans to or underwrites bond issues for borrowing entities. For these guaranteed services, borrowers pay a guaranteed fee, ranging from 0.25% to 2.00% per year of the amount borrowed, depending on the risk assessment.

## The Role of National Development Banks in Mexico

**Mexico has a dense network of financial institutions that offer loans, grants, and technical training programs related to climate change. They play an essential role in Mexico's overall climate change strategy and help to integrate climate change solutions into the development agenda.**

*Nacional Financiera*[18] is the principal financial agent who is a financial intermediary, provides credit lines from the IFIs and works as a second-tier institution to coordinate and efficiently communicate financial, technical, and training resources to micro, small and medium-sized enterprises and local authorities. NA FIN manages several individual programs, including:

- the Mexican Forest Fund, which provides payment for environmental services,
- the Mexican Carbon Fund, which promotes the development and use of low-carbon emission technologies,
- the Trust Fund for Electric Energy Savings, which promotes energy efficiency, and
- support services for agricultural marketing.

The National Bank of Public Works and Services, specialising in urban development, operates the Energy Transition Fund to provide municipalities and low-income households with grants to increase energy efficiency through appliance and streetlight modernisation.

*Fideicomisos Instituidos en Relación con la Agricultura* (FIR), or Trust Funds for Rural Development) represent a group of four trusts which funds eligible borrowers in rural areas with the support of financial intermediaries such as commercial banks, credit unions and others. Priority is given to projects that encourage sustainable production, including climate change risk-management plans; access to carbon markets; production of biofuels; installation of anaerobic digesters; conservation of soil and irrigation water; and reforestation.

[18] <https://www.nafin.com/portalfin/content/home/home.html>

## 2.3. Super-ESCO Model for Local Climate Action

This subsection tackles the definitions, roles, and operational modalities of Energy Service Companies (ESCO) and their Super-ESCO model. It explores the main elements of success before providing recommendations inspired by successful practices to apply in South Mediterranean countries.

### 2.3.1. Modalities and arrangements

ESCO is defined as “a firm which provides a range of energy efficiency and financing services and guarantees that the specified results will be achieved under a performance contract[19]”. A Super ESCO is a governmental entity (primarily within the ministry with the energy efficiency policy competency) that functions mainly or exclusively for public sector facilities, such as hospitals, schools, municipalities, public buildings, street lighting, and other public facilities[20].

ESCO activities consist mainly of the following:

- Carrying out energy audits and identifying energy efficiency projects.
- Facilitating access to finance by demonstrating the repayment potential of loans resulting from project cost savings.
- Bundling and standardising energy efficiency projects to minimise operating costs.

The Super ESCO serves as a mechanism to overcome barriers hindering the large-scale implementation of energy efficiency projects in the public sector; to prepare the market for the development of a dynamic energy efficiency improvement sector with the active participation of private ESCO companies; provide a legal and institutional framework, identify, and facilitate projects' finance and mobilise human resources for energy efficiency market's sustainability.

When it comes to the mobilisation of Super ESCOs for local action energy efficiency, projects implemented within the governance of municipalities include but are not limited to the following:

- Energy efficiency improvements in public buildings and facilities (administrative buildings, sports centres, shopping malls, street lighting, recreational areas, social houses, business centres etc.), which include improvements in insulation, glazing, heating, cooling, and lighting systems as well as application of renewable energy efficiency equipment like photovoltaic panels (PV), heat pumps etc.
- Area-based energy efficiency implementations like district heating, heat recovery systems, and landfill biogas plants.
- Infrastructural improvement in energy transmission lines (power grid).

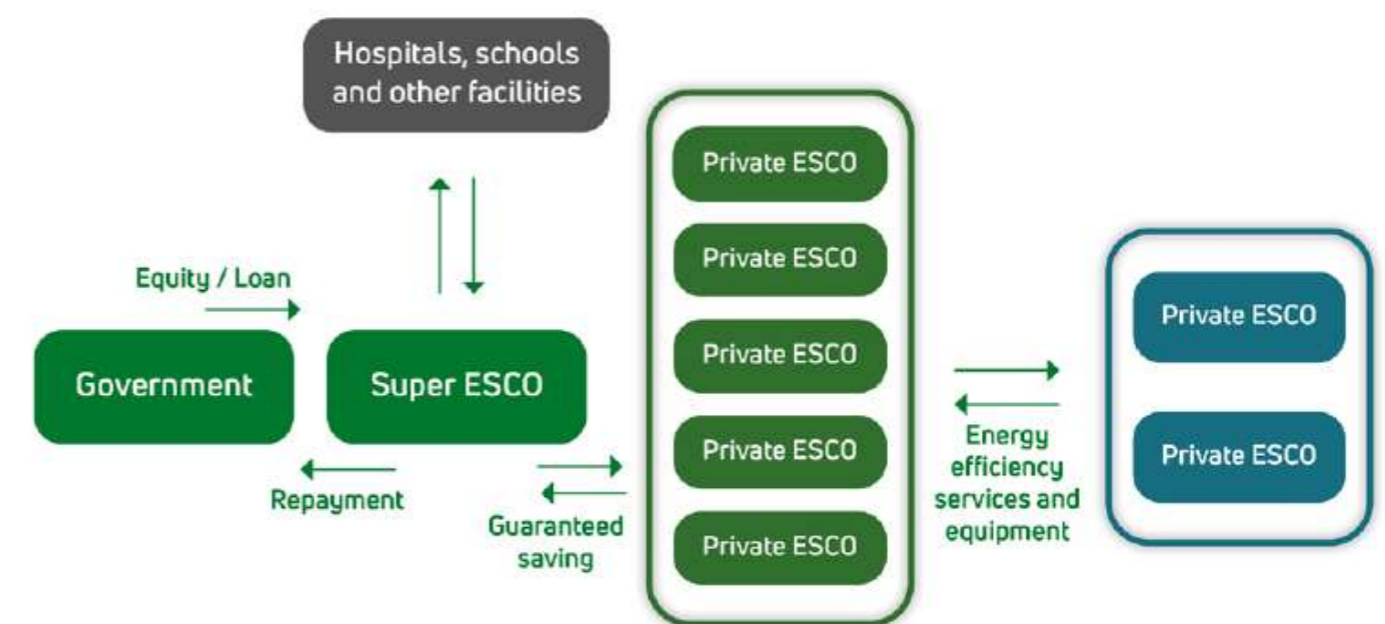
**In addition to cooperation with a Super ESCO, establishing a Municipal ESCO as an affiliation of a local authority or as a joint venture company with a private ESCO could be an alternative form of operation.**

Depending on the activity, financial sources diverge as well. These could consist of direct sources from a municipal budget; loans from local banks by municipalities subject to state guarantee; IFI financing (channelled through the central government); or the issuing of green bonds.

The following figure overviews the cooperation link between a central Super ESCO, national authorities, and local authorities/municipalities.

### Cooperation link between a central Super ESCO, national authorities, and local authorities/municipalities

#### How Super ESCOs Operate



[19] UN Terminology

[20] Super ESCO. An Innovative Approach to Unlock Energy Efficiency Potential, ECONOLER Series, 2017. [https://econoler.com/wp-content/uploads/10/2017/Econoler-Super-Esco-ANGLAIS\\_.pdf](https://econoler.com/wp-content/uploads/10/2017/Econoler-Super-Esco-ANGLAIS_.pdf)

### 2.3.2. Essential elements of success/ recommendations

Multiplication of the ESCO model and facilitating the establishment of Super ESCOs, and opening the ground for local authorities' cooperation with them will help accelerate the implementation of energy efficiency measures and climate actions mainly applied in buildings and facilities within the SEACAPs.

The following key recommendations, applicable to all countries at different degrees, are proposed:

- Further improve the regulatory framework for energy services for the public sector and adequate procedures for public procurement, including for local authorities.
- Enable ESCOs to access funds at affordable rates.

- Improve the public database with energy consumption and build upon calculations set by SEACAPs.
- Identify a regulatory body in charge of introducing energy audit guidelines, certifications, and accreditations of ESCOs, training and capacity building, and provision of transparency measures to ESCO contracts, and setting performance measuring mechanisms for services delivered by ESCOs.

Use equity funds and joint venture transactions to enable public funding and private-sector capital flows into ESCO projects to accelerate their growth. The below table provides recommended prioritisation levels of Super ESCO's actions for each essential element of guidance identified per country.



#### Existing Barriers to ESCO Development[21]:

Egypt	Jordan	Lebanon
<ul style="list-style-type: none"> <li>- Limited legislative support for ESCOs</li> <li>- Lack of clear legislative framework to promote Energy Efficiency</li> <li>- Need to establish more coherent procurement rules that are currently not adequate for Energy Efficiency</li> <li>- Relatively low consumers energy prices / Limited end users' incentives for Energy Efficiency</li> <li>- Limited capacity of Energy Efficiency agency to coordinate/ promote Energy Efficiency activities</li> <li>- Need for more reliable data/ information on energy end-use</li> <li>- Lack of mandatory Energy Efficiency building codes and benchmarking models including for industries</li> </ul>	<ul style="list-style-type: none"> <li>- Need for an adapted ESCO legislation</li> <li>- Difficulty accessing funds at affordable rates and terms</li> <li>- Limited awareness of the benefits of ESCOs</li> <li>- Need for an advanced database for energy consumption and thus, difficulty in setting up baseline consumptions</li> </ul>	<ul style="list-style-type: none"> <li>- Limited financial products by commercial banks for ESCOs</li> <li>- The current crisis requires that the government of Lebanon launches an emergency reform of the energy system</li> <li>- ESCOs have failed due to the current crisis</li> <li>- Instable political situation has hindered the operations of ESCO and the private initiatives to develop them</li> <li>- In the near future pending political stability and efficient energy reform, it is expected that the ESCO business will be developed</li> </ul>

Morocco	Tunisia	Israel
<ul style="list-style-type: none"> <li>- Need for well-established forms for finance</li> <li>- Perceived business and technical risk</li> <li>- Need to consolidate regulatory framework for energy services for the public sector / to simplify and set adequate procedures for public procurement</li> <li>- Limited awareness about ESCOs and the benefits of implementation of Energy Efficiency projects based on the ESCO concept</li> <li>- Need to build trust in ESCOs operations</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of finance for energy efficiency investments</li> <li>- Inadequate energy consumption data and information available in the industrial sector</li> <li>- Industrials are more concerned with enhancing operation and improving production rather than with reducing operational costs including through energy efficiency measures</li> <li>- Lack of expertise to develop projects.</li> <li>- The existing ESCOs are derived from consulting firms and have limited knowledge of the measurement and verification protocols</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of appropriate ESCO legislation</li> <li>- Complexity and inflexibility of public procurement rules</li> <li>- Lack of appropriate and commercial-based financial sources</li> <li>- Commercial banks are reluctant to finance ESCO projects and do not have appropriate products</li> <li>- Local banks are not familiar with the ESCO concept</li> <li>- Small-sized projects and high transaction costs</li> <li>- Low and fluctuating energy prices</li> </ul>

[21] Compiled from "ESCO Market Report for Non-European Countries."



### 2.3.3 Success stories

**In Poland, the Municipality of Piecki adopted an ESCO approach to upgrade the heating infrastructure of municipal buildings, improving energy efficiency and generating savings. This approach was adopted due to the need for more financial capacity to face the initial costs of this upgrade.**

The operating company (an ESCO) finances the costs associated with modernisation, repairs, heat production, and transmission. The municipality pays for this new, more efficient infrastructure with savings linked to lower energy consumption. In this operation, the ESCO had to request a loan for 750,000 EUR, with a 30-year repayment plan[22]. This model has been replicated in upgrading buildings, including heating, air conditioning, and thermal insulation. A key trigger for success in ESCO investments is that initial energy audits require sufficient technical capacity and the provision of grants to pay for them. Energy audits help reduce financial and physical performance risks, improving investments' attractiveness from the financial sector's views[23]. In the case of Piecki, the Financial Instruments for Renewable Energy Investment supported the initial audits and feasibility studies.

Energy Efficiency Service Limited is a Super ESCO undertaking several energy efficiency projects in India. Some successful implementation details include applying a simplified M&V process based on energy-saving and bundling similar projects (e.g., street lighting replacement with LED technology at the national and individual use levels). Repayments were made with the savings from municipalities' energy costs; supporting domestic LED manufacturers (this, in turn, increased India's market share in the global LED market from 0.1% to 12%); using bulk purchasing to increase the competitiveness of the market and decrease the unit price; and combining a variety of financial tools including Pay as You Save (PAYS), on-bill invoicing and up-front invoicing.

**In Morocco, The Société d'Investissements Énergétiques became a Super ESCO in October 2018. It is responsible for implementing various energy efficiency projects in the building, street lighting, mobility, and industrial sectors.**

It is empowered to function as a financial Super ESCO and support local SMEs and ESCOs, thus strengthening the national ecosystem in synergy with other actors in the sector.

The Super ESCO is an intermediary and facilitator for the public administration, local communities, public enterprises, and private sector companies. It also

develops intersectoral partnerships among the various stakeholders. Its main actions are geared towards upgrading the energy level of public buildings and street lighting in the cities of the Kingdom. In a second phase, it will also provide technical assistance to local SMEs and ESCOs to help create a vibrant domestic EE market led by ESCOs.

**Etihad ESCO was established in 2013 by the Dubai Electricity and Water Authority (DEWA) to foster an energy efficiency performance contracting market in Dubai.**

It is meant to be a so-called "SuperESCO", playing a coordinating role for private sector energy service companies (ESCOs), energy efficiency clients, technology providers, financial institutions, auditors, consulting companies, and DEWA to facilitate the identification, deployment, and payment of energy efficiency solutions. Etihad ESCO prequalifies buildings from portfolios of owners to establish project feasibility; organises tendering

on behalf of owners; helps to secure financing by negotiating with financial institutions and supporting with credit risk; verifies commissioning; and follows up in the guaranteed phase to verify energy savings; manages contracts and support building owners with issues. Since its launch, Etihad ESCO has supported projects in 7,763 buildings, which continue to deliver annual savings of 307 GWh of electricity and 289 MIG of water[24].

[22] <https://www.interregeurope.eu/policylearning/good-practices/item/3493/esco-formula-in-poland/>

[23] <https://www.escowpolsce.pl/produkty/smart-city.html>



## 2.4. Integrating Green and Climate Criteria into Concessions and PPPs

Public Private Partnerships (PPPs) are a form of cooperation between a private party and a government agency for providing a public asset or service in which the private party bears significant risk and management responsibility. PPPs can be considered part of the policy and financial instruments available to public authorities to “catalyse” or “leverage” private finance.

**Whether or not private partners are directly involved in securing finance, private involvement can help local authorities to develop, operate, and maintain infrastructure more effectively and efficiently, facilitating access to finance and helping to ensure repayment of associated loans.**

This subsection addresses the topic of the integration of green procurement criteria in local authorities’ investment decisions. It explores the main elements of success and provides for Clima-Med beneficiary countries recommendations inspired by successful global practices.

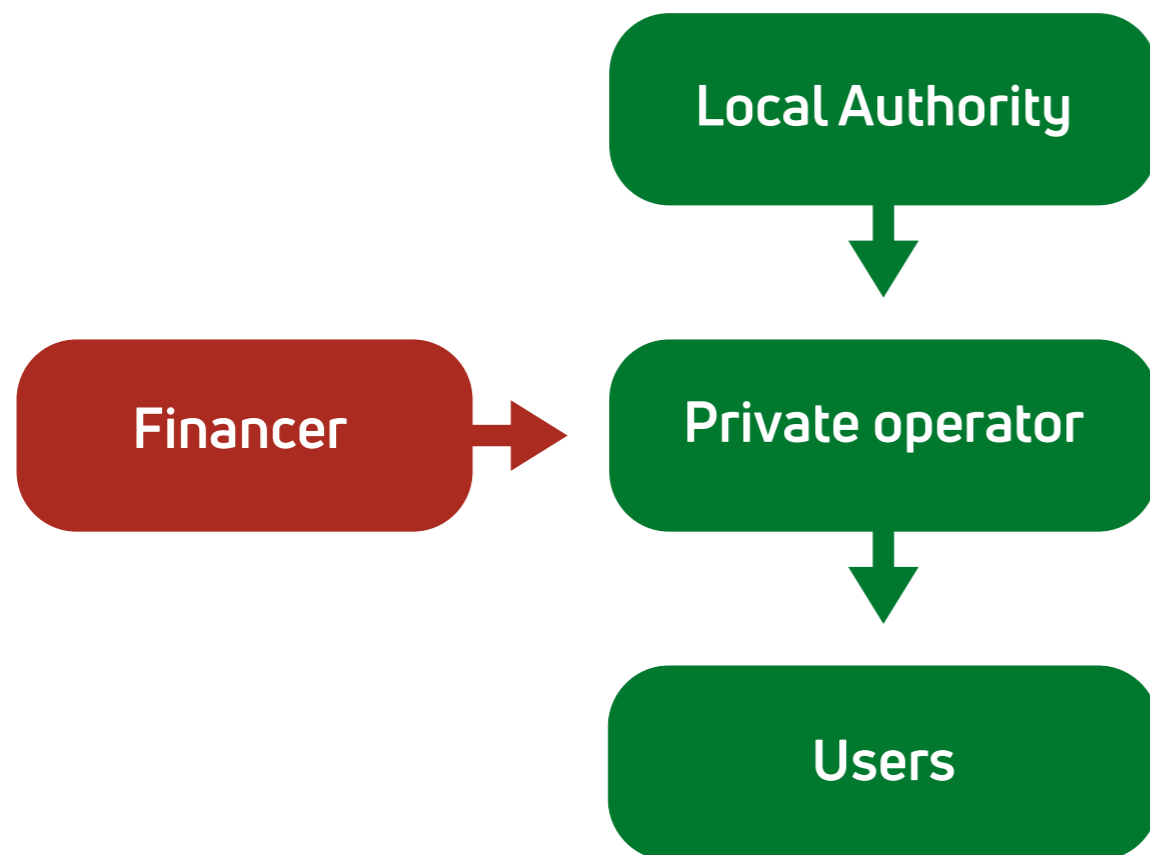
### 2.4.1. Modalities and arrangements

PPPs have more flexibility to accommodate changes in demand for a service or infrastructure than public investments. This makes them more suitable for the integration of NDC priorities. In the performance contracts

of PPPs, local authorities can integrate metrics associated with climate actions and build a model to ensure long-term alignment between investments and NDC priorities.

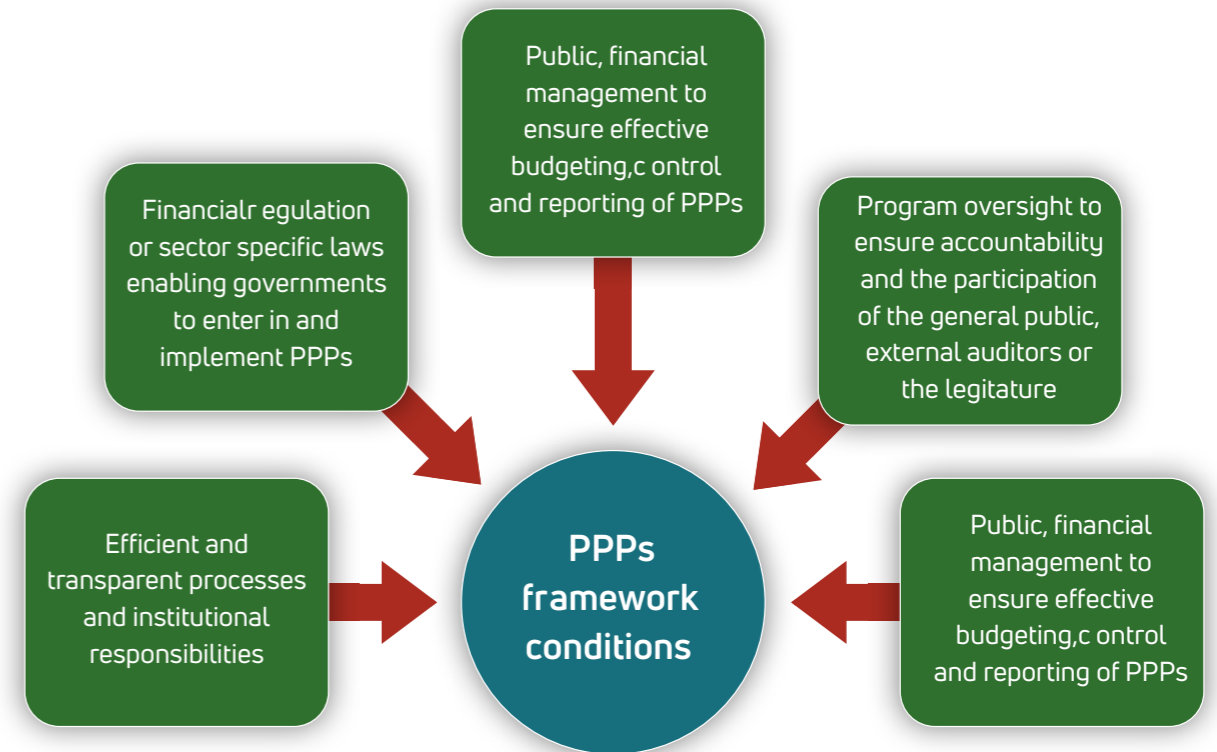
Among the other three potential fields of application for PPPs in climate finance are significant green infrastructure investments, natural resource management, and innovative private sector investments with measurable mitigation or adaptation impact. In a local context, PPPs with climate change consideration are mobilised primarily on urban infrastructure (bus shelters, parks, public space improvement), urban public transit (buses and trams) and non-motorised transport (public bikes), energy savings through lower electric bills linked to street lighting and water pumping, solid waste collection and processing.

PPPs require policy and market conditions that embrace both public and private interests. These interests depend on the country's context, legal and regulatory conditions, existing service delivery infrastructures, and the maturity of financial markets. National authorities hold an essential responsibility to establish frameworks suitable for PPPs to deliver climate finance services.



The below figure presents an overview of the central components of the PPP framework.

### Central components of the PPP framework



To go beyond a classical PPP scheme and integrate Green and Climate criteria into PPPs, incentives must be included in PPP requests for proposals (RfPs) and other bidding documents, guidance documents on project selection and evaluation, and PPP policies and legislation[25]. In this way, the private partner would integrate climate resilience into infrastructure investment, design, operations, maintenance, and performance indicators.

There has been a parallel shift in how the private sector approaches the climate agenda. As the debate has been reframed, climate-friendly building, for example,

is now considered a smart business move. This evolving understanding of the climate agenda has transformed the approach to infrastructure around the globe, underscoring the importance and ongoing relevance of public-private partnerships (PPPs)[26].

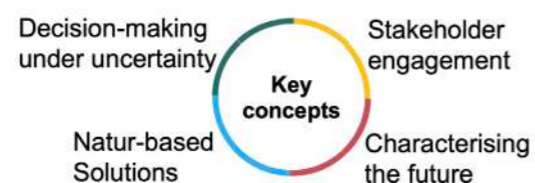
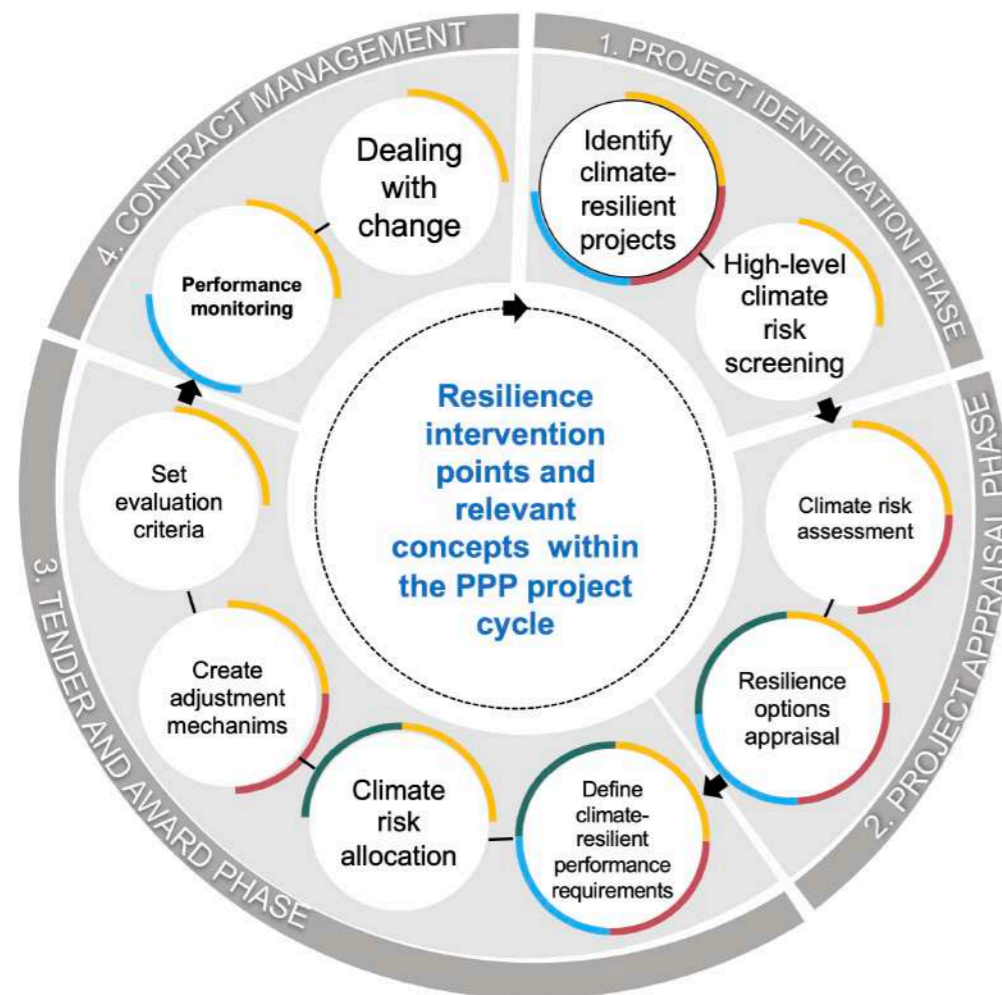
Many of today's climate-related infrastructure projects are PPPs, even if the partnership is not explicit. Regulatory drivers initiate that process in many sectors that involve mitigation of greenhouse gas emissions—for example, renewable energy or energy efficiency.

[25] For more information and examples, see Climate-Resilient Infrastructure Officer Handbook published by World Bank, Jan 2022. <https://gca.org/reports/climate-resilient-infrastructure-officer-handbook/>

[26] Climate Change PPPs - Handshake – IFC International Finance Corporation – IFCs quarterly journal on public-private partnership – issue 2# – July 2021

Climate-proofed PPPs make sense for several reasons. Primarily, PPPs are an excellent vehicle to promote cost-effective projects that spur innovation. PPPs can contractually set minimum performance standards to lower GHG emissions (for example, energy standards for buildings or minimum loss reduction targets for

electricity distribution systems). Other possibilities include solar or wind PPP building contractual incentives, like access to a Power Purchase Agreement or concessional financing. This would encourage the construction a pump storage hydropower plant that could store water during off-peak demand periods.



PPP are also important for climate initiatives because these partnerships can efficiently organise under a single project umbrella. These numerous and complex arrangements make a renewable energy (or any other climate-related) project work. A good example is the innovative area of Concentrated Solar Power (CSP) generation, an appealing new technology for countries with abundant sunshine and interest in reducing fossil fuel dependency. Lastly, it is critical to consider the role of PPPs in addressing adaptation to the effects of climate change.

Forward, examining potential impacts of a changing climate on its infrastructure. Adaptation is gaining prominence as new funds are being negotiated to assist nations that need it most—especially developing countries, which see the impact of climate literally on the ground. Many of these governments feel that adaptation is in their immediate interest because results can help improve people's lives shortly. With possible 25-year (or longer) concessions, PPPs also have the advantage of providing a structure for addressing medium- and longer-term issues.

#### 2.4.2. Essential elements of success

In the Clima-Med beneficiary countries, PPP in a local context has not been effective because of the need for a solid legal and regulatory framework and adequate local authority capacity to develop and administer the

contractual arrangements, including fiscal aspects and cost recovery. Therefore, in Clima-Med beneficiary countries, most of the PPP activity for infrastructure development has been driven and managed mainly by central governments. Larger cities have recently shown little effort to develop subnational PPPs, particularly in water, roads, transportation, and housing.

The potential field of application of PPPs in climate finance remains very broad in the region. Three main thematic areas were identified for public-private collaboration and are recommended to apply:

- Green infrastructure, where PPPs hold the potential for enhancing the efficiency of significant infrastructure investments and mobilising the resources needed to support infrastructure projects of a smaller scale.
- Natural resource climate management, where the importance of shared public and private ownership of natural resources can help achieve effective compliance and enforcement.
- Climate action innovation, where public-private collaboration can result in long-term certainty for private sector climate innovation investments, stimulate "green" entrepreneurship and help establish networks that support innovative outcomes.

- Climate action in urban environments provides an interesting context for the design, testing and implementation of PPPs, primarily regarding infrastructure development.

### Local authorities' climate commitments to set municipal services and PPP

- Building understanding and capacity among critical municipal government

### PPP and Climate Adaptation

**To date, PPPs are almost exclusively associated with the climate mitigation sector. The business case for adaptation activities is currently only seen as robust in those sectors directly impacted by climate change, such as the food or water sectors. Therefore, the public sector must formulate a straightforward narrative around adaptation finance that makes business sense so that the private sector and PPP can be engaged and help fill the gap[27].**

### Policy considerations

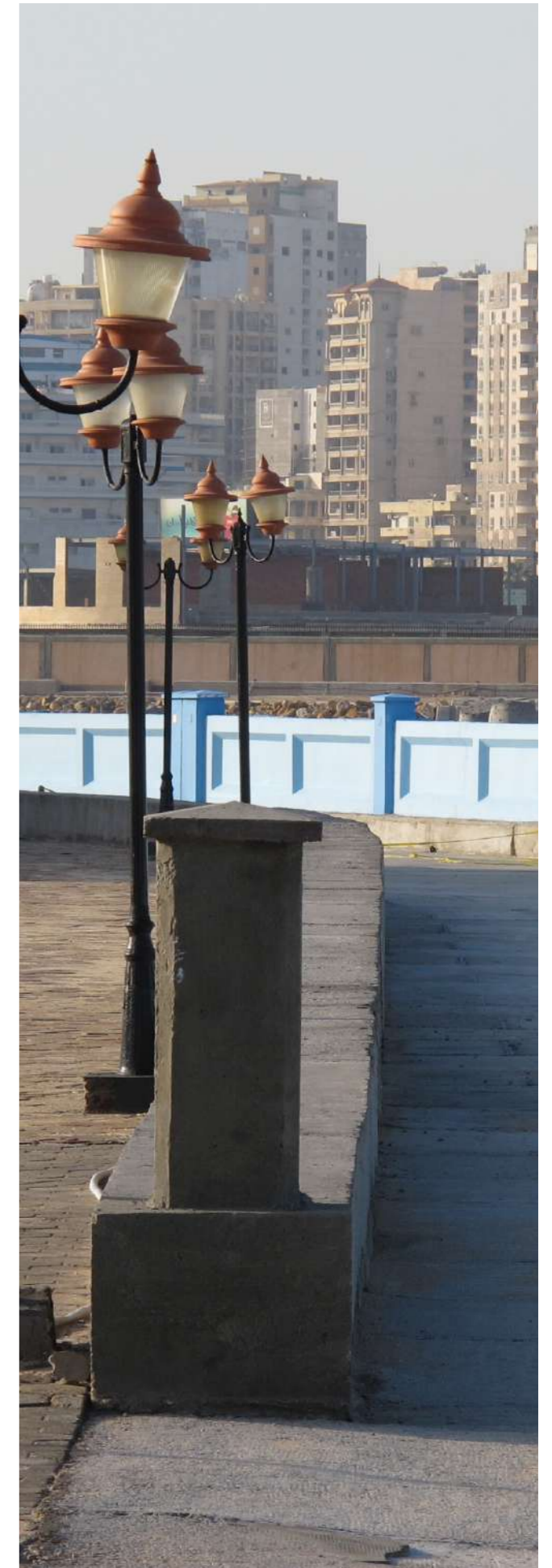
- Clarify the regulatory framework for infrastructure investment to provide potential investors with precise, transparent, predictable, and consistent policies and regulations. Often, the PPP laws coexist with other procurement modes for infrastructure, such as public utility legislation and several sector-specific laws.
- Ensure that infrastructure strategies align well with national and regional trade and development strategies, including investment, logistics development and broad governance reforms.

officials and private sector representatives of the fundamentals of designing, structuring, tendering, and implementing viable PPPs.

- Building consensus among stakeholders on the range of potential PPP models that could be used to deliver improved municipal infrastructure services.

- Streamline or remove restrictions to foreign investment in the energy and transport sectors.
- The public sector should work more closely with private stakeholders to address bottlenecks in climate investment and build appropriate national and local regulations.
- Strengthen the capacity of ministries to deal with PPP actors to be involved in infrastructure planning and prioritisation of climate actions.
- Integrate climate risk and resilience expertise among public and private partners.

- Tailor performance metrics to address climate risk and resilience, defining time horizons and uncertainties.
- Explicitly outlining the boundaries of when an extreme climate event would constitute force majeure, outside which the private partner must accept responsibility for repair and recovery costs and incentivising resilient design.
- Promote collaborative and participatory processes with the private sector and maintain communication channels with private stakeholders throughout the project lifecycle.
- Mandate maintenance history from the private partner during Contract Management Phase to identify trends in climate change risk and inform future projects.





### 2.4.3 Success stories

#### In India,

**the Jaipur Municipal Corporation is the leading local agency operating over 100,000 public streetlights within the city.**

With old technology and limited management capacity, the agency was spending too much on electricity, with a high toll on carbon emissions (%9 of the city's total). The International Financial Corporation (IFC) helped the agency to create a 10-year energy performance contract, which involved the retrofit of more than 70,000 LED-technology streetlamps for a value of USD 12 million, reducing %77 electricity consumption. The project benefited 1.65 million people with improved street lighting and a reduction of 36,750 metric tCO<sub>2</sub> per year,

saving JMC more than USD 1 million per year in fiscal savings due to reduced energy consumption. These savings help pay back investors and the IFC for the investment received, mainly through loans.

#### In Mexico,

**Mexico City launched the Metrobus project (a rapid bus transportation system) as part of the Programme to Improve Air Quality in the City Metropolitan Area Program (MCMA) 2002–2010 (PROAIRE).**

The established PPP model is based on a concession and comprises several stakeholders. The first is Metrobus, a decentralised body of Mexico City's government which plans, controls, and manages services. The second is the service operators, and the third group involves fare collectors, which includes INBURSA as the bank and two other companies that install, operate, and maintain the fee-collecting system. Finally, a trust fund was created to gather all collected fees to pay the corresponding

amounts to the transportation companies based on the number of kilometres travelled. Metrobus has resulted in %30 fewer accidents, %40 lower travel times, and a %15 modal shift from cars to public transit. Furthermore, during its first six years of operation, the first BRT line reduced CO<sub>2</sub> emissions by 300,000 tons. Now, each year the Metrobus is estimated to reduce CO<sub>2</sub> emissions by 110,000 tons; nitrogen oxide by 690 tons; particulate matter by 2.8 tons; and hydrocarbons by 144 tons.



**The city of Kuala Lumpur, since the early 1980s, has witnessed rapid population and urbanisation growth, which have resulted in a marked increase in flash flooding in the central areas.**

In 2001 the government and the city launched the creation of a mixed-used tunnel, diverting and storing the stormwater and allowing traffic flow when empty of water. To implement the project, a PPP was established between the Malaysian government, the city and two private companies and implemented through a concession contract for 40 years. The total cost of the SMART project

was USD 510 million. The concessionaire charges a toll fee for private cars and light vans to recoup the capital investment and operating expenses. In addition to effectively managing flooding situations, which offers potential for climate adaptation, the tunnel has helped reduce congestion and cut travel time into the city centre between 15–10 minutes, reducing emissions.

# 03.

LOCAL AUTHORITIES' STRATEGIES  
FOR FINANCING SEACAP ACTIONS



**In Clima-Med beneficiary countries, LAs continue efforts for mobilising local resources and knowledge to finance local climate projects and for channelling available resources into funding climate actions.**

The most common practice is leveraging local authorities' source revenues to support city-climate action. City-own-source revenues from taxes and fees are an excellent way to fund certain climate-smart city investments and services that benefit city taxpayers directly. Although national governments tend to play a leading role in collecting green taxes, this does not exclude the city's source revenues from playing an important role in city climate finance. Under certain conditions, it is more efficient to have city governments provide local-level infrastructure from municipal own revenue sources (i.e., paid by local taxpayers) rather than by providing these goods or services through more centralised mechanisms.

Under ideal conditions, local taxes act like a quasi-user fee for local public services

provided so that the decentralised provision of services achieves a more excellent correspondence between the costs and benefits of city infrastructure and services. Thus, city taxes would efficiently fund specific localised interventions (e.g., flood mitigation investments, tree planting and parks to prevent "heat islands"; and so on) where city residents are the immediate beneficiaries, primarily climate adaptation actions that are not revenue generating.

Besides those actions, a wide range of successful climate funding projects and business strategies are implemented in the region, realised with means beyond local authorities' resources. This section provides a selection of some of those models of action.

## 3.1. Mainstreaming SEACAP in Green Public Procurement

### 3.1.1. Modalities and arrangements

Green public procurement (GPP) rules are put in place to guide institutions when acquiring materials, supplies and services and when selecting such products based on their mitigation or adaptation impact. GPP can be applied to both products bought to run the business internally (e.g., office supplies and equipment) and, from an industrial company's point of view to the materials used in production processes[28].

This subsection explores successful strategies for mainstreaming SEACAP through GPP and identifies some elements of the success of the existing practices.

### 3.1.2. Elements of success

At the local authority level, green procurement integrates the country's NDC priorities and the LA's SEACAP implementation operations into procurement for social and infrastructure investments. The climate impact of investment and spending becomes one of the selection criteria during the tendering process. Contractors are invited to offer solutions with measurable mitigation or adaptation impacts.

Public authorities are major consumers of goods and services. By using their purchasing power to choose environmentally friendly goods, services and works, they can contribute to sustainable, green and climate action. Adopting green procurement principles by a LA can help stimulate a critical mass of demand for more sustainable goods and services. GPP is, therefore, a strong incentive for eco-innovation.

GPP is applied as a cooperation between local authorities' investment offices and contractors from the private sector. Introducing climate-related greening public sector investment at the local level is a political decision in the hands of the head of local authority (i.e., governors, mayors, or city councils). Decisions to apply GPP are made in cooperation with the units for investment planning, procurement, and internal auditing. These units oversee arrangements and execution of the procurements and investments. Contractors participate in the calls for proposals or procurement processes, providing innovative GPP solutions with a measurable mitigation and adaptation impact.

To be effective, GPP requires the inclusion of clear and verifiable environmental criteria for products and services in the public procurement process.

[28] The European Commission developed a repository of best practices and lessons learned on green procurement that can be of value for cities willing to introduce climate action into city investment decisions. Among the tools of this repository, a Green Public Procurement Training Toolkit is available, with ten training modules available in ten languages, covering the strategic, legal and market aspects of green procurement, as well as specific guidelines, ranging from furniture and repairs, copying paper and cleaning services, to building and road construction, and transport operation. [https://ec.europa.eu/environment/gpp/toolkit\\_en.htm](https://ec.europa.eu/environment/gpp/toolkit_en.htm)

The first step is to have a clear and shared vision at the local authority in line with SEACAP and NDCs, where the target and the methodology to reach this target are publicly available. For example, suppose the target is the reduction in CO<sub>2</sub> in local transport. In that case, the local authority can establish a policy for purchasing above-average fuel standards and utilising hybrid or electric vehicles. By integrating this policy into public communications, LAs will consequently allow the private sector to prepare their conditions to adapt to this shift in procurement preferences and gradually adjust their services and products.

The second step involves the provision of guidelines that clearly explain potential avenues for addressing climate action along the value chain. These guidelines can take an incremental approach, moving from simple to complex procurement. They can be complemented with best practice reference documents, adding a

comprehensive vision of implementing green public procurement. Further, the units for investment planning and procurement-public tenders can provide training, templates, and tools to assess how the contracting authority will determine compliance with climate and green targets to assure their contractors are aware of forthcoming climate commitments and environmental policies.

The third step is to establish pilot activities to create an emotional effect. These pilot activities can be financed by in-kind contributions from the private sector and donors interested in facilitating access to technology, training, and knowledge exchange. Powerful examples that help change the mindset of integrating climate action into city investments include energy efficiency and renewable energy integration in public buildings, electric cars, and changes in public building codes. These set the table for moving to the general market.

Basic rules to be applied by LAs, in general, and as part of the SEACAPs' implementation, include:

- Adopt a GPP policy and plan with clear definitions and targets appropriate to SEACAP and NDCs.
- Provide details for sector-specific GPP approaches (e.g., buildings, food and catering services, road transport vehicles and energy-using products).
- Communicate on GPP targets and methodology adopted by the local authority.
- Set priorities for the product and service groups with eco-labels.
- Support demonstrative effect projects, e.g., integrating solar power into schools and hospitals.
- Put information, training, networking, and monitoring for local authorities and the private sector's human resources in place.

- Be transparent in the learning process aspect of the GPP, considering the local market's readiness.
- Set award criteria which encourage tenderers to deliver even higher levels of environmental performance than those specified.
- Set contract performance clauses that underline contractors' environmental commitments and provide appropriate remedies where they fall short.
- Ensure there is a system for monitoring and applying these commitments to subcontractors.

The table below lists several strategies to mobilise non-municipal finance for urban areas interacting at national, private sector household and city government levels, reflecting innovative solutions across urban sectors supporting climate actions and projects to be included in the SEACAPs.

## Strategies to mobilise joint finance for climate investments in urban areas

SOURCES OF URBAN GHGS	NATIONAL LEVEL STRATEGIES	PRIVATE SECTOR AND HOUSEHOLD STRATEGIES	CITY GOVERNMENT (AS FACILITATOR AND REGULATOR) STRATEGIES
TRANSPORT	<ul style="list-style-type: none"> <li>-Set vehicle emissions standards</li> <li>-Provide tax exemptions for alternative fuels</li> <li>-Offer incentives and subsidies for electric vehicle purchase</li> <li>-Close the viability funding gap for transport</li> </ul>	<ul style="list-style-type: none"> <li>-Offer green bonds for public transport facilities and fleet purchases</li> <li>-Provide leases for electric bus fleets</li> </ul>	<ul style="list-style-type: none"> <li>-Develop green fleet procurement standards</li> <li>-Integrated transit-oriented design, planning and land value capture</li> <li>-Set parking management policy</li> <li>-Introduce congestion pricing</li> </ul>
BUILDINGS	<ul style="list-style-type: none"> <li>-Introduce energy-efficient construction, appliance, and design standards</li> <li>-Offer incentives for green building design and construction</li> </ul>	<ul style="list-style-type: none"> <li>-Offer green mortgages for housing purchases</li> </ul>	<ul style="list-style-type: none"> <li>-Create zoning and land use regulations to promote density and mixed use</li> <li>-Establish ecosystem services for land preservation</li> </ul>
ENERGY	<ul style="list-style-type: none"> <li>-Provide subsidies for solar panel</li> <li>-Offer grid neutrality for purchase of renewable power</li> </ul>	<ul style="list-style-type: none"> <li>-Issue green bonds to build power generation facilities</li> <li>-Introduce on-bill repayments</li> </ul>	<ul style="list-style-type: none"> <li>-Introduce a net metering policy</li> <li>-Transition to solar-powered streetlights</li> </ul>
WASTE	<ul style="list-style-type: none"> <li>-Issue waste disposal and recycling standards and guidelines</li> <li>-Establish deposit/refund programs</li> </ul>	<ul style="list-style-type: none"> <li>-Issue green bonds to build waste processing or recycling facilities</li> <li>-Set environmental funds for preservation &amp; remediation</li> </ul>	<ul style="list-style-type: none"> <li>-Provide recycling and/or sorting incentives for household waste</li> <li>-Introduce plastic bag levies</li> </ul>
INDUSTRY	<ul style="list-style-type: none"> <li>-Launch carbon trading programmes</li> <li>-Leverage taxes and/or penalties for emissions or discharges</li> </ul>	<ul style="list-style-type: none"> <li>-Issue green bonds for industrial estate development, and localized energy, waste processing / recycling facilities</li> <li>-Establish environmental funds for retrofitting / remediation</li> </ul>	<ul style="list-style-type: none"> <li>-Integrate eco-industrial parks into planning</li> <li>-Establish a tax holiday and/or abatement for green industry location</li> </ul>





### 3.1.3 Success stories

#### In 2017, Barcelona in Spain

**approved a municipal decree on sustainable public procurement based on a municipal strategy that stressed the importance of including social, environmental and innovation criteria in procurement processes. Two years later, the city reported that more than 88% of public contracts included social clauses and measures on the environment, climate and innovation.**

The procurement process has involved industry and trade associations, unions, and social organisations. Part of the success story is that the first order of business involved a communication team and a plan to ensure that procurement went through testing stages, including pilot projects, into learning and improving process[29]. While the Environmental Department executed more than %47 of these contracts, %37 were completed by local districts, implying that procurement was performed locally.

The city developed a local guideline so contractors can estimate their carbon footprint; how to introduce

it in procurement documents; the legislation that supported this decision; and alternatives for compensating environmental impacts in the procurement of products, services, and public works, facilitating the integration of these efforts into proposals[30]. This guideline also provided tools for eco-labelling, life-cycle assessment, and other environmental tools to assess the impact of activities on the environment. The result is that this guideline was extensively used, reporting through voluntary agreements a reduction of %13 in comparison with the business-as-usual scenario, with more than 2 M tCO<sub>2</sub>e avoided[31].

#### The City of Berlin

Following on from the Berlin Closed Substance Cycle and Waste Management Act (1999) and Berlin Waste Management Strategy (2011), whose main objective is to develop a modern, closed-loop waste management system, the City of Berlin has implemented measures and initiatives to help increase the recycled waste quantity from 445,000 tonnes in (%20.9) 1996 of total waste) to 624,000 tonnes in (%42.2) 2012). The Strategy

further sets ambitious climate protection targets, including an additional annual reduction of 1.1 million tonnes of CO<sub>2</sub>e by 2020 (about %25 of the decrease in total Berlin's GHG emissions over 2020-2010). This is to be achieved through high-quality recycling and waste recovery, but also through an improved, environmentally responsible public procurement system, valued at 5-4 billion EUR annually across the city government agencies[32].

#### The City of Copenhagen

All of Copenhagen's agencies must integrate environmental and climate requirements in their procurement, where applicable. To support the municipality's procurement team, Copenhagen has established a permanent team for green public procurement comprising four environmental and climate advisors. The green public procurement team works across all administrative and strategic procurement units to support sustainable procurement and market engagement activities regarding environmental and climate issues. Its activities consist of

coordinating and supporting strategies and policies, ensuring that procurement remains part of all relevant strategies and policies developed by the city. It is used to foster green growth by setting appropriate minimum criteria. The Green also sets award criteria which benefit suppliers with green products or services and implement capacity-building actions for the various units and departments, to further support them in managing environmental requirements of purchasing processes[33].

[29] [https://ajuntament.barcelona.cat/contractaciopublica/sites/default/files/20201214\\_gm\\_20479\\_2020\\_pla\\_objectius\\_contractacio\\_publica\\_sostenible\\_0\\_2021-2020.pdf](https://ajuntament.barcelona.cat/contractaciopublica/sites/default/files/20201214_gm_20479_2020_pla_objectius_contractacio_publica_sostenible_0_2021-2020.pdf)

[30] <https://ajuntament.barcelona.cat/contractaciopublica/sites/default/files/guia-quantificacio-emissions-geh.pdf>

[31] [https://canvclimatic.gencat.cat/web/.content/03\\_AMBITS/mitigacio/acords\\_voluntaris/7\\_Principals-dades-i-resultats/2019/Infografia-resum-informe-anual-2019-Programa-acords\\_gener2020-.pdf](https://canvclimatic.gencat.cat/web/.content/03_AMBITS/mitigacio/acords_voluntaris/7_Principals-dades-i-resultats/2019/Infografia-resum-informe-anual-2019-Programa-acords_gener2020-.pdf)

[32] C40 Good Practice Guides: Berlin - Sustainable public procurement

[33] [https://energy-cities.eu/wp-content/uploads/01/2019/climate-mainstreaming\\_budgets.pdf](https://energy-cities.eu/wp-content/uploads/01/2019/climate-mainstreaming_budgets.pdf)

## 3.2. Asset contribution in lieu of cash in PPPs

This subsection aims to complete the above section on integrating green and climate criteria into concessions and PPPs by adding local authorities' perspectives on the use of asset contribution in lieu of cash in PPPs linked to SEACAP projects. It identifies some elements of the success of the existing practices.

### 3.2.1. Modalities and arrangements

Financial assets include investments in public entities, cash deposits, advances paid, financial investments and loans, and receivables (e.g., uncollected fees and taxes). These are limited in Clima-Med beneficiary countries. However, depending on the size, economic power, and legal framework, LAs or another public entity can own and operate assets such as facilities, land, vehicles, equipment, building, equipment, programs, services, publications, websites, or events. These assets are essential to provide vital public services and thus absorb a large part of the budget for maintenance. In Clima-Med beneficiary countries, land is often the most important asset, representing more than 90% of the value of total assets.

Asset contribution in lieu of cash is a model of in-kind contributions or services valued at their fair market value or actual cost. In other words, they are valued in the partnership at what one would pay for them if they were not donated.

In the Clima-Med beneficiary countries, as LAs may not have the credit rating and visibility of their private counterparts, they may use their assets instead of cash to balance their participation in the partnership with the private sector (or other public entities). In some cases, LAs are using in-kind contributions in the form of issued licenses or additional incentives to investors to attract their investment to a target matching with local policy. For example, suppose a local authority is committed to developing green buildings in its SEACAP. In that case, it can offer additional rights/incentives to a housing development company if or when the project involves energy-performant solutions.

The process consists of political, economic, and legal steps. A local authority defines a political target where in-kind contributions are mobilised and build a strategy aligned with their priorities. Afterwards, the value of the in-kind contribution at the fair market value is defined. The "fair market value" is the agreed-upon price in an open and unrestricted market between knowledgeable and willing parties dealing at arm's length and who are fully informed. The fair market value is the price an institution would be expected to pay in such circumstances after applicable discounts.

The city government's financing, treasury, or investment promotion units or financing unit is the leading player in mobilising municipal assets as in-kind contributions. These units must

assess the value of the existing and potential infrastructure susceptible to payment collection. While the work of the Financing Units is dedicated to assuring proper sound financial management, it is also necessary to work with urban planning departments at the city level, particularly about how public property can be used for urban expansion. Under this case, the in-kind contribution is the private sector's use of an asset (e.g., public land) under specific conditions – for example, by leasing land from the city for building apartments with a pre-determined

share of social housing units under a mixed land use agreement. A group of secondary players are those parties, such as investors, infrastructure and service operators who are interested in making a profit in coordination with the in-kind contribution of the city government. As can be seen, the two players require a shared vision of the city, emphasising the participation of the private sector. This is particularly true in services and infrastructure that can be outsourced as business opportunities.



### 3.2.2. Elements of success

At first, successfully managing in-kind contribution assets requires understanding the value they have in the context of city services and infrastructure. For this purpose, a city shall assess or define the asset's value through a search among stakeholders and interested parties. These groups can express their views on the potential uses of a public good or resource. Examples include assessing the value of a street that can accommodate public bikes or scooters that integrate cooling elements, generate electricity through solar power, or develop public land for housing, service, or recreational purposes.

The city shall define metrics linked to using these assets, particularly regarding potential business partners. These metrics should be related to the financial performance of investments, assuring those in-kind assets are appropriately valued. In this context, some public resources are relatively easy to assess, such as the roofs of public buildings that can be used for solar power or vertical farming, which can be leased under a tender. Other resources

could be more precise, such as pricing the use of public land or competing uses of sidewalks or streets for urban infrastructure and services. Assessing the value of in-kind contributions is complex, as interpretations might suggest that public assets are free or already paid for by the city for public use as an open-access resource.

Valuations of these assets should be put together, and their use fostered through the financing units of the city as well as the technical areas that might want to promote a climate action measure.

Other rules to apply by LAs, in general, and as part of the SEACAPs' planning and implementation, include:

- Goals and metrics that track performance should be fully defined to ensure that in-kind assets are appropriately valued as a city contribution to business operations.
- Communication and coordination should be ensured between the Financing Units and the technical teams, such as transport, water, and waste management. This is a critical element in assuring the valuation of the in-kind contributions.

### Potential climate-relevant applications of the city's revenue source

CITY-OWN REVENUE SOURCES	POTENTIAL CLIMATE-RELEVANT APPLICATIONS
<b>LOCAL TAXES</b>	
<b>Local property taxes (buildings and land)</b>	-Provide local property tax credits to incentivise specific climate behaviours (e.g., solar energy credits) -Give preferential property tax treatment for green buildings
<b>Local business taxes (or business license fees)</b>	-Give local businesses tax deductions for offering employees public transit programs
<b>NON-TAX REVENUE SOURCES</b>	
Building license fees, development fees, land value capture taxes and fees	-Use land value capture taxes and fees to fund Transit-Oriented-Development (TOD) infrastructure
Market fees and rental fees	-Ensure market fees and rental fees fund climate adaptation and mitigation measures
Transit fees	-Subsidise or eliminate transit fees to increase public transit ridership.
Water & sanitation connection charges and tariff structures	-Establish differentiated connection charges and tariff rates for households and businesses in neighbourhoods or for structures with optimal density
Solid waste management fees	-Add surcharges for specific types of waste disposal -Encourage waste reduction and recycling
Fuel levies and road tolls	-Increase fuel levies and road tolls (including congestion pricing) to reduce GHG emissions from road transportation and promote climate-smart public transit alternatives
Parking fees and parking structure taxes	-Increase parking fees in city centres to discourage single-car commuting -Increase public transit usage, reduce the demand for urban parking space -Increase urban green space, and promote densification



### 3.2.3. Success stories

**Advertising companies have set up businesses with cities in leasing bus shelters for placing advertisements in exchange for providing public bikes and keeping bus shelters clean and well-maintained. This is a win-win solution for the company, government finances and citizens, as they get better infrastructure and additional mobility services. This is the case of JC Decaux, a global advertising company and provider of a self-service bike rental scheme with more than 52,000 bikes available in 88 cities worldwide[34].**

The service is provided on behalf of the city, and it helps in the demand for motorised transport while supporting the revitalisation of public space. The business model is relatively simple and attractive for the city, as it values the in-kind contribution of the city, which is a bus shelter or a bus shelter space; it outsources the collection of payments associated with the advertisement, and at the same time it outsources the provision of the public bike service. The company maintains bikes, stations, and bus shelters, keeping them clean and properly functioning. This arrangement has benefited citizens as it provides a

healthy, fast, and affordable mobility option, saving public space, as up to 32 bikes can be stored in the area used by a single car[35]. The company is also gradually providing electric bikes and solutions that improve air quality in bus shelters[36].

The introduction of public bike schemes has been implemented successfully in several cities in China, France, Spain, India, the United States, Mexico, Colombia, Thailand, Malaysia, and other countries[37], as well as in El Gouna in Egypt, which has the first bike share system in the MENA region with more than 300 bikes and 37 stations[38].

### The Bus Terminal and Municipal Market of Danlí, Honduras

**this urban renewal PPP transforms a city's buildings by using government assets to finance upgrades to the existing installations, including 600 commercial market stalls and 20 bus terminals, and eventually transfers ownership to small private and medium enterprises (SMEs).**

The market stalls will be shared with a private partner to construct the upgrades and then sold or rented to SMEs who will profit from the commercial space and bus terminal booths at a price pre-set by the municipality. The project also considers environmental and social impacts in the project planning: smart building, energy

savings, ecological handling of solid waste, noise limits during the project's construction, a system of fire risk management, high environmental and eco-friendly obligations, archaeological objects' protection, and exceptional design regarding accessibility for persons with disabilities.

[34] <https://www.jcdecaux.com/press-releases/jcdecaux-self-service-bikes-surpass-milestone-600-million-rentals-worldwide>

[35] <https://www.jcdecaux.com/mobility-trends/-32bikes-single-car-parking-place>

[36] <https://www.jcdecaux.com/blog/filtreo-bus-shelter-contribute-reduction-urban-pollution>

[37] <https://www.metrobike.net/the-bike-sharing-world-map/>

[38] <https://baddelonline.com/#about>

### 3.3. Crowdfunding for climate change

Crowdfunding is a way to raise funds for a specific cause or project of a reasonable size by asking many people to donate money, usually in small amounts and usually during a relatively short period, such as a few months. Currently, crowdfunding is done mostly online, often with social networks or through specialised platforms, which makes it easy for supporters to share a (project) cause on social networks. However, crowdfunding remains a limited tool that concerns only specific small projects in a context of high trust.

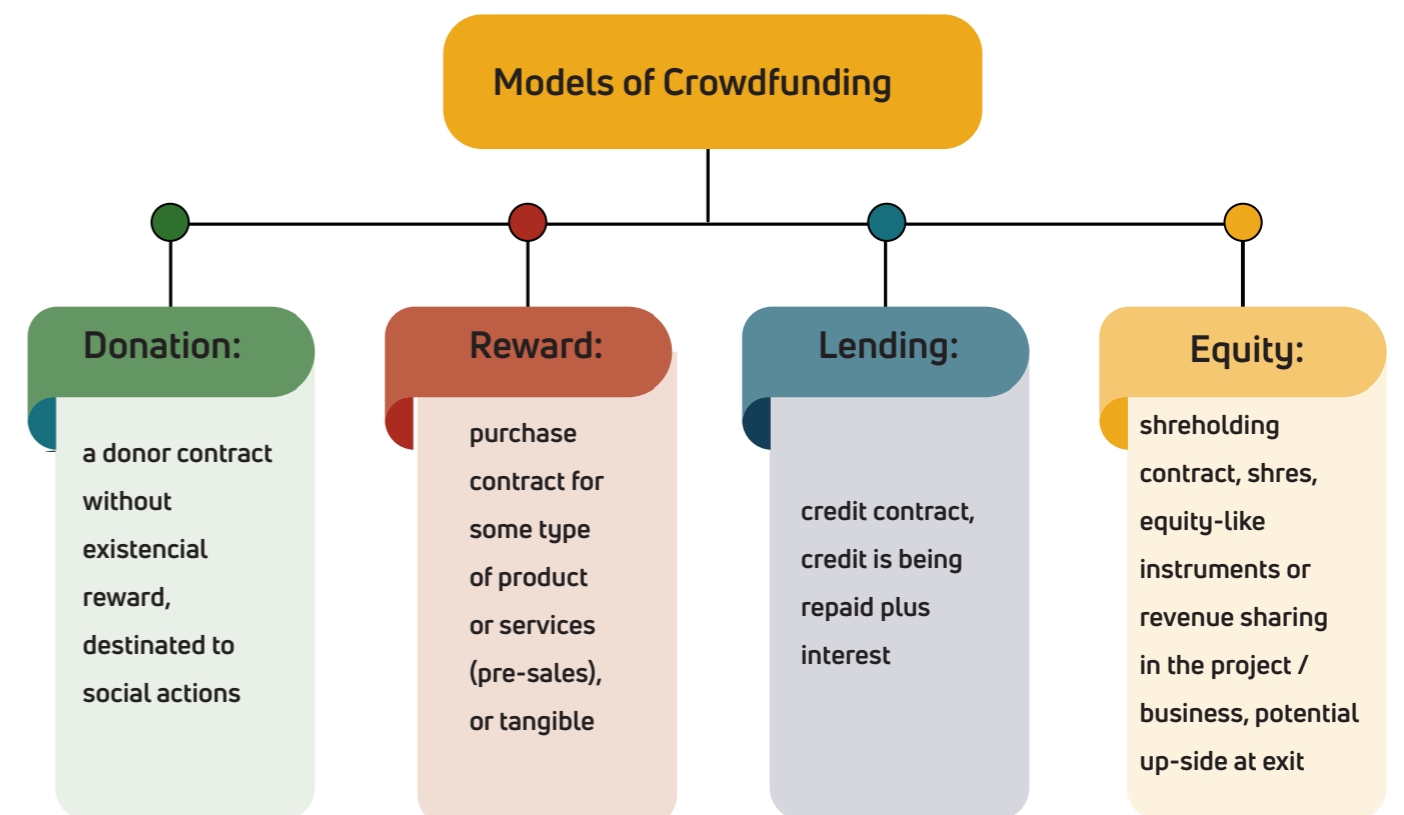
This subsection explores successful strategies for mobilising crowdfunding mechanisms for funding SEACAP projects. It identifies some elements of the success of the existing practices within the limits of the crowdfunding system.

#### 3.3.1. Modalities and arrangements

Crowdfunding exists for various funding models, including donations, in-kind rewards, lending, and equity investments. The link between the individual donor and the recipient can be direct as people to people or indirect – for instance, through an investment fund. The motivation of the funders can range from purely philanthropic to purely financial, with the majority finding themselves in the middle and expecting a 'dual return' of social and economic benefits. Contributions of individual

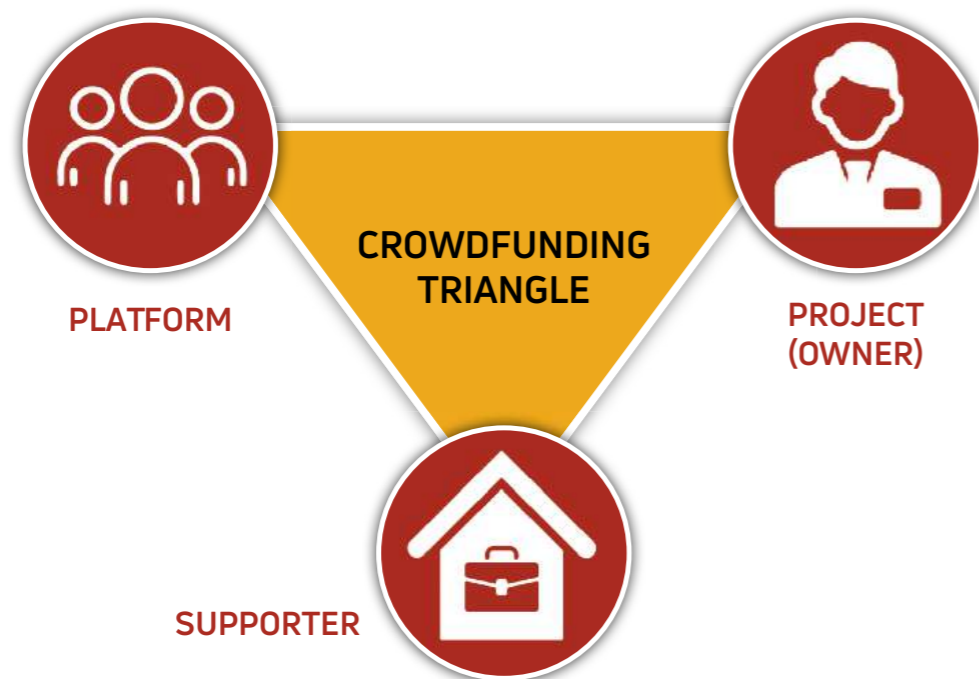
donors are typically too small to finance the entire project; hence a need to pool resources of several individuals or the crowd.

Organisations, businesses, individuals, or public authorities alike can use crowdfunding for any project; for example, a charitable cause; creative project; business start-up; school tuition; or personal expense can all qualify, as well as projects that have mitigation or adaptation impact and are linked to NDCs and SEACAP implementation.



Crowdfunding is a financing mechanism that builds upon shared ownership and standard financing principles. Crowdfunding happens when a group of people get organised to invest in a service or product that can be shared under an ownership structure considering several owners holding small equity. By bringing like-minded individuals, firms, and investors together, crowdfunding can help scale up sustainable innovations developed by environmental entrepreneurs. In this way, it can contribute to achieving the scale at which climate change mitigation technologies make a significant difference on a global level.

## The Crowdfunding Triangle



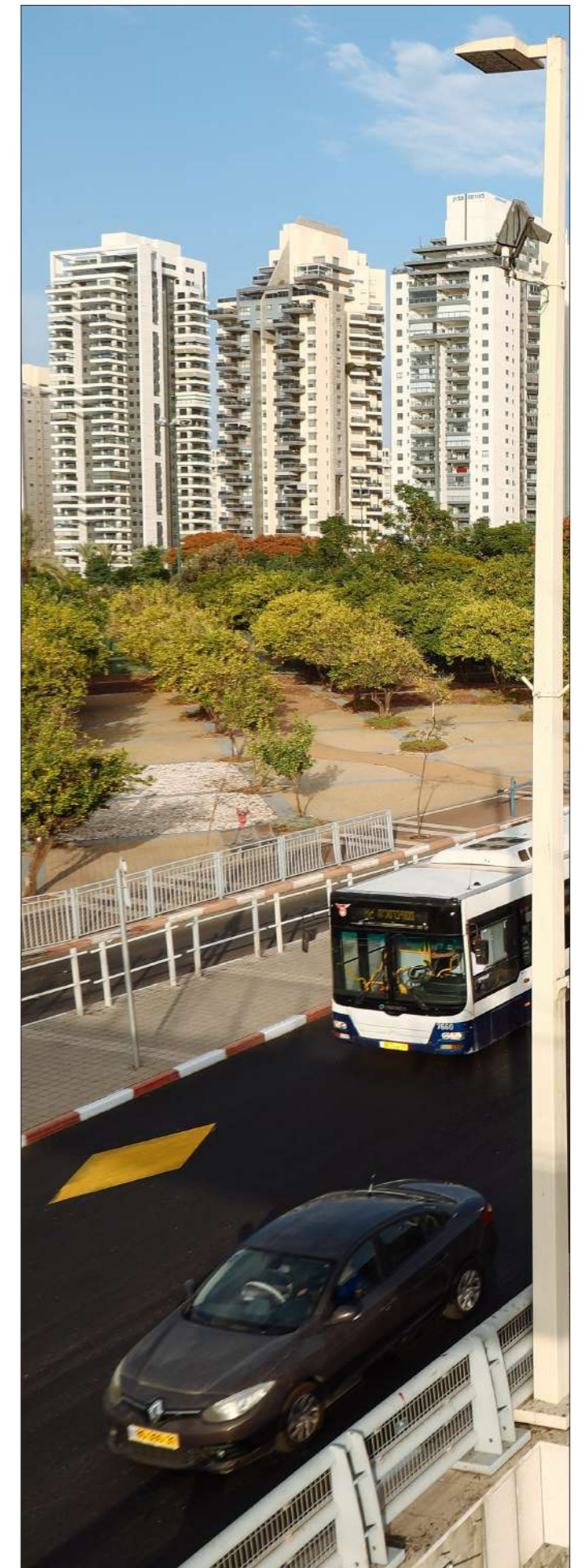
Crowdfunding has been used for financing climate action measures, such as increasing renewable energy capacity through energy communities. In an energy community, individuals can buy shares of a business. This business invests the resources in infrastructure, such as solar panels, inverters and smart meters owned entirely by the community, representing multiple individuals with a common

interest. These individuals can benefit from this ownership structure by either accessing solar power that is a right fit for their needs or simply by receiving payment for the services rendered by the business in the shape of rent, feed-in tariffs, or a flat fee. Crowdfunding is also used to capitalise funds that can be used to provide loans, for example, to help people in buying energy-efficient appliances.

The leading player in crowdfunding schemes for the climate is the project promoter (which can be an organisation, businesses, individuals, or local or public authorities). The secondary player is the group of investors who make a financial contribution. This contribution has different types of benefits for the investor. Depending on the crowdfunding models, the role of an investor can switch from shareholders to customers, founders, or sponsors. At the same time, the investors can be a financier and beneficiaries of the project (i.e., investment, product, or service), especially when this is a mitigation or adaptation project.

### Some of the relevant challenges for all crowdfunding models are:

- Crowdfunding is not legal in all countries. Thus, due diligence on the regulation should also be part of the target group design.
- The complexity of organising proper advertising and advice by platforms.
- Treatment of payments (whether reclaimable contributions are returned).
- Trust that the money collected will be used for stated purposes (the risk of fraud).
- Secure data protection and security procedures.
- Equity-based platform models may entail additional risks, such as legal uncertainty arising from divergent national laws or financial and investment risks.



### 3.3.2. Elements of success

#### Assuring good framing

The dynamics of crowdfunding for sustainable projects such as climate change mitigation or adaptation projects are much more complex than conventional crowdfunding, as it requires a suitable framing of the project target. Framing means highlighting certain aspects over others by selecting the ones that appear more relevant to a particular target group to encourage behaviour change. The goal of framing is to attract potential investors.

For example, climate entrepreneurs can emphasise climate-related threats and problems or hopes and opportunities.

The manner in which climate change is framed triggers societal perceptions and behaviour, and the relevance of different frames and communication depends on what matters to individuals. During the framing of the climate change project, the promoter shows indicators on how to measure the mitigation and adaptation impact of the project. A communication campaign accompanies each frame depending on the content of the project and the platform.

#### Identification of the right platform

Identifying the right platform matching the project's target and the funding goal is also key. The crowdfunding campaign should communicate the minimum amount of funding needed to launch the investment as well as the length of the campaign.

Creating a short-term campaign can be a good way to generate excitement and urgency among potential donors. However, if the campaign is longer, the promoter may need more time to spread the word about the crowdfunding project to many people. If the campaign lasts longer, fundraising efforts risk also experiencing a drop in momentum.

#### Clear message campaigning

The campaign must indicate the target investment, the expected benefits and how they will be distributed among shareholders. Finally, after implementing the investment, with the money raised, the promoters must fulfil commitments declared at the project launching, which can be paying back investors, distributing benefits or attributing credits as acknowledgement.

Basic rules to apply in crowdfunding planning and implementation include:

- **Give visibility to the crowdfunding action.** For example, by setting up a dedicated portal that gives access to a range of crowdfunding platforms and offers a variety of climate-relevant products, such as concessional credits at zero per cent interest, loans to solar businesses or investment bonds.
- **Give credibility to the crowdfunding platforms** through a mechanism of evaluation and accreditation based on transparent, standardised reporting formats.

- **Reduce investment and lender risks** through a 'de-risking' instrument, such as a first loss guarantee facility.
- **Reduce the foreign exchange risk** by supporting foreign exchange risk insurance schemes and covering part of the cost.
- **Establish a dedicated national portal** for crowdfunding.
- **Establish an enabling national legal framework** by adopting legislation to regulate the crowdfunding industry in a balanced and 'light touch' manner to ensure minimal investor protection without discouraging new social investors' access to smaller investments.
- **Expand the circle of crowd funders** beyond the 'social investor' to include people with more substantial financial returns and security expectations – for instance, by offering crowdfunding products whose interest rates are competitive with bank interest rates.
- **Reduce the financial risk** through backing by a guarantee facility or by using a well-established financial organisation.



### 3.3.3. Success stories

#### Som Energia,

is a renewable energies cooperative founded in 2010 in Spain. This cooperative is an example of a crowdfunding success that involves more than 73,000 shareholders that have worked together to implement more than 10 MW of capacity taking advantage of renewable energy sources.

The cooperative has multiple facilities producing more than 18,5 GWh annually, commercialised through over 130,000 contracts [39]. This generation is equivalent to the consumption of 4,000 households, consumed directly by partners and customers of the cooperative. The cooperative has 12

generation facilities, three more in construction, and a more than EUR 78 million turnover. A facility with a capacity of 1 MW avoids the emission of more than 455.000 tCO<sub>2</sub> per year. The cooperative comprises almost 70,000 individuals, 2,100 firms, 700 NGOs and more than 100 public authorities.

#### Crowdfunding through diaspora grants

is also part of the project financing models prepared by Clima-Med for project design to respond to Lebanon's energy and economic crisis.

The model offers to provide local communities with an alternative source of energy, namely Photovoltaic panels, to be integrated with the other energy sources (electrical network and diesel

generators) to reduce energy expenses and GES emissions. The crowdfunding targets capturing the support of the Lebanese Diaspora.

[39] <https://www.somenergia.coop/>



### An Innovative Way to Finance Solar Panels at 19 British Schools,

The Engynious Schools project, which raised £650,000 through the Abundance Platform, is an example of a recent investment under which 19 British schools installed solar panels[40].

The participating schools receive electricity at %30 less than the standard market rate. Besides, they did not pay for the solar panels or their operation. This project earns revenue by selling cheaper electricity to schools, and the Government has introduced a Feed-in Tariff scheme.

This works because investors purchase debentures for individual projects, a type of bond commonly used by big companies to raise capital. Abundance is the first financial platform that allows debentures as an investment vehicle

for small investors willing to invest in renewable energy projects across the UK. The terms and conditions on the Abundance website mention that these debentures are long-term investments for a period, usually varying between -20 25 years. Hence, investors are advised to hold their investments for the entire term. However, in the case of circumstantial deviations from the average projections, the Abundance Platform also allows the buying and selling of debentures amongst member investors via their bulletin board.

### Grow Ahead,

is partnering in a crowdfunding project with the Association for Agricultural, Education and Environment Cooperation (ACAEMPE), an organisation of farmers in Pernambuco, Brazil, to plant 80,000 native species and adapted fruit trees and promote food sovereignty in the Caatinga and Atlantic Forest biomes of Brazil.

Rural workers and their families—through family centres, youth groups, associations, and cooperatives—have collected the funds and will work with teams of educators and technicians to collectively implement the project and build educational programming. This will happen through:

- the installation of a new nursery for seedlings of native species representing native biodiversity,
- the production of 80,000 seedlings of 20 species in the region,
- supporting the recovery of native forests through introducing native forage species and promoting agroecological land management,
- supporting income generation through planting native leguminous seedlings (thrush) in riverside regions (riparian forest recovery),
- creating work plans for the implementation of new technologies

for reforestation and environmental preservation adapted to the Brazilian northeast,

- the creation of Green Schools in adjacent communities,
- developing a training program for teachers and members and adapting the curriculum to the rural environment of schools in agrarian reform areas, and
- involving family centres, youth groups, associations and cooperatives, and schools, all in the implementation of the project. They will partner with the teams of educators, monitors, and the project's technical team to be agents of dissemination, awareness, and guidance of families in their centres.

The project aims to preserve and regenerate the forests and build knowledge and an educational foundation to care for the forest biomes for present and future generations.

[40] <https://www.cairn.info/revue-journal-of-innovation-economics-2-2018-page195-.htm>

# 04.

The SEACAP  
Support Mechanism (SSM)



The SEACAP Support Mechanism (SSM) is a technical support mechanism designed to enhance NDCs' local implementation and support cities' efforts in preparing and implementing projects within adopted SEACAPs. The Clima-Med project recommends the SSM as a strategy to improve all stages of local climate change action, ranging from preparing SEACAPs to exploring project financing and implementing projects. It also consolidates joint operations and serves as a bridge between national and local authorities and financial institutions.

#### 4.1. Modalities and Arrangements

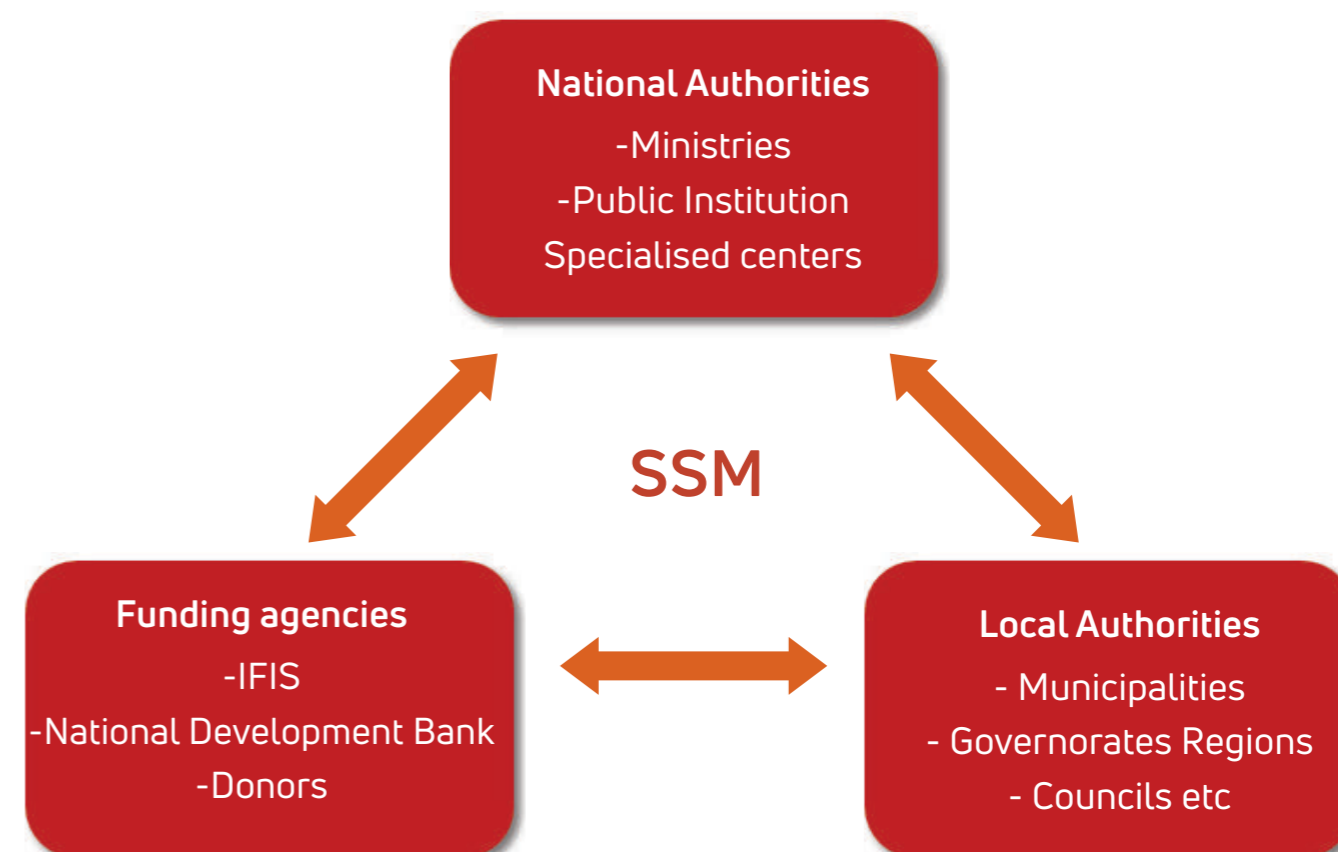
This subsection explores potential modalities and arrangements for the implementation of SSM, points out some elements that need to be in place for the success of SSMs and develops recommendations for each Clima-Med beneficiary country.

The functioning of SSM can vary in different countries in line with the national legal and institutional conditions and local authorities' expectations and capacities. That is why each SSM requires a tailor-made approach built

jointly by representing local and national authorities.

National authorities that would spearhead and facilitate the SSM are institutions with a mandate in climate change governance and/or local finance, such as ministries in charge of direct climate-related actions, territorial planning, land use, and municipal affairs, as well as national development banks. The beneficiaries of the SSM may include - but are not limited to - municipalities, regional councils, regions, governorates/vilayets, and associations of cities or unions of municipalities committed to undertaking local climate change actions.

#### The SSM Stakeholders



Options for leading or hosting SSM, conditions and challenges towards its establishment are summarised in the following table.

COUNTRY	OPTIONS FOR LEADING/ HOSTING INSTITUTION	AVAILABLE CONDITIONS / FORESEEN STEPS	CHALLENGES
Egypt	<ul style="list-style-type: none"> <li>-Ministry of Local Development</li> <li>-Ministry of Planning and Economic Development</li> </ul>	<ul style="list-style-type: none"> <li>-Engagement of 2 pilot regions (Governorates) to support SSM</li> <li>-Government commitment considering Egypt NDC update and the holding of CoP 27</li> </ul>	<ul style="list-style-type: none"> <li>-Complex administrative steps</li> <li>-Financial constraints to setup SSM</li> <li>-Capacity building is a prerequisite</li> <li>-Challenging engagement of national financing authorities.</li> </ul>
Israel	<ul style="list-style-type: none"> <li>-Ministry of Energy</li> <li>-Ministry of Interior</li> </ul>	<ul style="list-style-type: none"> <li>-Existence of support mechanisms or initiatives such as Project Cards and a pool of accelerators/experts to assist municipalities</li> <li>-Active cooperation between the Ministry of Energy and the Union of Local Authorities to support small towns in EE and CO2 reduction</li> </ul>	<ul style="list-style-type: none"> <li>-Ineligibility of cities to most international financial schemes</li> </ul>
Jordan	<ul style="list-style-type: none"> <li>-Ministry of Local Administration</li> <li>-Ministry of Planning and International Cooperation</li> </ul>	<ul style="list-style-type: none"> <li>-Existence of urban, environmental and energy planning units operating in municipalities</li> <li>-Ongoing decentralization steps in line with SSM creation</li> <li>-Support to the setup of an SSM by cities</li> </ul>	<ul style="list-style-type: none"> <li>-Subnational finance</li> <li>-Financial constraints to setup SSM</li> <li>-Capacity building is a prerequisite</li> </ul>

Lebanon	<ul style="list-style-type: none"> <li>-Climate Change Unit at Ministry of Environment supported by UNDP</li> <li>-Union of municipalities</li> </ul>	<ul style="list-style-type: none"> <li>-Revised NDC and rich policy framework support SSM creation</li> <li>-Engagement of municipalities and readiness to take the lead of SSM considering absence of state funding and support</li> </ul>	<ul style="list-style-type: none"> <li>-Political instability</li> <li>-Absence of subnational finance</li> <li>-Financial constraints to setup SSM</li> <li>-Capacity building is a prerequisite</li> </ul>
Morocco	<ul style="list-style-type: none"> <li>-« <i>Ministère de l'Énergie, des Mines et de l'Environnement</i>” (MEME)</li> <li>-Ministry of Interior</li> </ul>	<ul style="list-style-type: none"> <li>-Possible activation of an Urban Energy Unit inside the MEME</li> <li>-Ongoing decentralisation steps in favour of SSM setup</li> <li>-Well-developed subnational finance infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>-Complex administrative steps</li> <li>-Financial constraints to setup SSM</li> <li>-Capacity building is a prerequisite</li> </ul>
Palestine	<ul style="list-style-type: none"> <li>-Ministry of Local Government</li> <li>-Technical department of the Municipal Development and Lending Fund (MDLF)</li> </ul>	<ul style="list-style-type: none"> <li>-MDLF can have an active role as an intermediary funding agency</li> <li>-The Environment Quality Authority ensures integration of local energy and climate actions into local action plans and SEACAPs</li> <li>-The Electricity Sector Council is engaged to support cities</li> <li>-Linking the SSM to donors' funding can be envisaged</li> </ul>	<ul style="list-style-type: none"> <li>-Political instability constraints</li> <li>-Financial constraints to setup SSM</li> <li>-Capacity building is a prerequisite</li> </ul>
Tunisia	<ul style="list-style-type: none"> <li>-Environmental Monitoring Unit (EMU) of the General Directorate for Environment and life quality (DGEQV) at the Ministry of Environment</li> </ul>	<ul style="list-style-type: none"> <li>-Supportive role of EMU to SSM (EMU is in charge of gathering, diffusion, monitoring and supporting the implementation of national strategies and action plans for climate, biodiversity, sustainable development, at the national, regional and local level)</li> <li>-DGEQV's is tasked for monitoring the implementation of climate activities, projects, and programs at the regional and local level</li> </ul>	<ul style="list-style-type: none"> <li>-Financial constraints</li> <li>-Complex administrative steps</li> <li>-Capacity building is a prerequisite</li> </ul>

## 4.2. Elements of Success

**The SSM is expected to be instrumental in facilitating the preparation of SEACAPs and the exploration of optimal approaches to financing and implementing projects.**

While the SSM can take multiple shapes depending on the availability of resources, institutional capacities, and national regulatory framework, the elements discussed below can be considered essential for each SSM:

**-Governance:** As the SSM will operate as a state-supported initiative or institution, it requires an Operation Management Unit (OMU) based in the country's capital city and hosted by a relevant national institution to be assigned depending on the country's national climate governance. These could be the Ministries of Environment and Urban Planning, the Ministry of Finance, those in charge of local authorities, and others selected from the ministries that are members of Clima-Med NCGs. The SSM Operation Management Unit would need a team supervised by a manager and a pool of internal or external technical experts capable of providing

technical assistance to local authorities. If feasible, the SSM can hire preselected experts to collect short-term services.

The governance should be strengthened by a steering committee comprising members appointed by the affiliated ministries, representatives of mayors or members of city councils and technical experts from cities. The participation of key financing actors (national and international) should be assured.

**-Link to Public Funding Mechanisms:** A strong link between the SSMs and public funding operations is necessary during the establishment and the first stages of the SSMs. Depending on the country, at a more advanced stage, the OMU may need to start generating its own operational funds from less "traditional" sources, e.g., fees rendered on services delivered (such as a local authorities' membership or success fee from generated funding).

**-The SSM will seek inspiration from the experience of cities with Clima-Med** about empowering local authorities in their role as local leaders and strategic partners of the national authorities for the implementation of the NDCs. It will also build upon successful approaches in funding SEACAP projects.

**-Providing technical assistance:** Overall, the SSMs will offer technical assistance in SEACAP planning and preparation, (ii) exploring financing, feasibility, and bankability for SEACAP projects, and (iii) awareness raising for local climate action. It can also facilitate and accompany the SEACAP projects' promoters in implementing them. A wide range of sub-activities can be related to action finance, including:

- integrating the SSM operations into national and sectorial strategies, plans and funding modalities (e.g., water, energy, transport.),
- developing and promoting feasibility and business models to guide the financing of SEACAP projects,
- establishing a system of data management for action planning and project financing, and
- building a network of structured relations with national and international financiers (including public banks, financial authorities, and representatives of private investors) and advocating for developing financing programs for local climate actions.



# 05.

Boosting the Role of  
International Financing Institutions



International Financial Institutions (IFIs), also known as Multilateral Development Banks (MDBs), are those entities such as the WB, EIB, KfW, and AFD and other regionally focused multilateral development banks, e.g., EBRD and ADB, who utilise pooled contributions from national governments and additional resources (such as interest collected from loans) to provide grants or loans to borrowing member (developing) countries to execute development projects. The IFIs seldom execute the projects or programs themselves but rather lend or grant funds to executing agencies (most of the time a department or a public entity) in the borrowing member countries to carry out the project or program - albeit in accordance with procurement guidelines and regulations determined by the IFI [41].

**In 2015, signatories of the Paris Agreement committed in Article 2.1 to make “finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”[42]. This commitment provides the mandate for IFIs to align their investments with Paris, which entails the alignment of financial flows to both public and private sectors with the objectives of the Paris Agreement on climate change[43]. For IFIs, this process involves developing a methodology or a framework that can be used to verify if their investments are consistent with development trajectories compatible with the Paris Agreement’s temperature and climate resilience targets.**

## 5.1. Main Climate Finance instruments suitable for climate finance

**In the wide variety of climate finance instruments available on the market, a small set of financing instruments remains suitable for local authorities in the Clima-Med beneficiary countries.**

We hereby provide insight into some of them to guide local and national actors aiming to support the financing of climate action in cities in their relations with financing institutions, noting that besides the climate instruments applicable to climate finance, financing institutions are also providing advisory services for national and local governments as

well as private sector actors on how to improve their climate investment climate.

A selection of successful examples of finance mechanisms is further presented in this section as models to consider, adapt, and eventually apply to implement climate actions of local authorities in the region.



[41] <https://www.tradecommissioner.gc.ca/development-developpement/dev-markets-marches-dev.aspx?lang=eng>

[42] [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

[43] <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/12/2020/Aligning-finance-with-the-Paris-Agreement3-.pdf>

Instrument applied by IFIs	Highlights about the system and expectations [44]
Grants	Transfers made in cash, goods, or services for which no repayment is required.
Investment loans	<p>Transfers for which repayment is required. Investment loans can be used for any development activity that has the overall objective of promoting sustainable social and/or economic development in line with the MDBs' mandates. Proceeds used for activities included in the joint MDB methodology for tracking climate finance count as climate finance.</p> <p>Usually, these are implemented through a Financial Intermediary such as a National Development Bank or a Fund of Funds.</p>
Guarantees	<p>Transfers to cover commercial and non-commercial risk of private sector investments, commercial borrowing by sovereign or state-owned enterprises, and/or commercial borrowing by the sovereign for budget financing.</p> <p>Guarantees are extended for eligible projects that enable financing partners to transfer certain risks that they cannot easily absorb or manage on their own. Guarantees cover equity and a wide variety of debt instruments and support financial sector projects (including those of capital market investments and trade financiers and nonfinancial- sector business activities corresponding to activities across sectors).</p> <p>Usually, these are implemented through a Financial Intermediary such as a National Development Bank or a Fund of Funds.</p>
Refinancing	Refinancing is the replacement of an existing debt obligation with another debt obligation under different terms. Refinancing can be classified as climate finance subject to specific terms, such as climate finance projects that have already been constructed or are already operational but have not passed the breakeven point (for example, recently built solar projects). The break-even conditions are confirmed by the investment team.
Policy-based financing	Financing for a public borrower that helps the borrower to address actual or anticipated requirements for development finance of domestic or external origins. Policy-based financing supports a program of policy and institutional actions for a particular theme or sector of national policy. While it does not use the cost estimation approach for each policy action, disbursements of PBF are conditional on the borrower fulfilling their policy commitments in the lending agreement. The proportion of this public financing that is reported as climate finance is the same as the proportion of the climate-related "prior actions" agreed to allow the policy-based financing to proceed. For example, if one in three prior actions are climate- related, one-third of the resulting policy-based financing would be counted as climate finance.

[44] Mobilizing Private Climate Financing in Emerging Market and Developing Economies, IMF Staff Climate, Ananthkrishnan Prasad, Elena Loukoianova, Alan Xiaochen Feng, and William Oman.

Instrument applied by IFIs	Highlights about the system and expectations
Results-based financing	Directly links the disbursement of funds to measurable results in a government-owned program. RBF aims to increase accountability and incentives for delivering and sustaining results, improve the effectiveness and efficiency of government-owned sector programs, promote institutional development, and enhance the effectiveness of development. Proceeds used for activities included in the joint MDB methodology for tracking climate finance count as climate finance.
Green/climate bond	A type of bond, the issuance of which is done by a client and supported by an MDB, where the proceeds are applied exclusively to financing or refinancing, in part or in full, new and/or existing climate projects. Only the percentage of proceeds that are used for activities included in the joint MDB methodology for tracking climate finance count as climate finance.
Blended finance	A financial engineering tool that allows combining concessional public funds with non-concessional private finance and expertise, while sharing risks and returns under clear and well-established rules. Specifically, public resources mainly used to attract private investment to the creation of commercially viable investment opportunities by reducing projects' transaction costs and charging the risk/return profiles while aligning private incentives with public policy objectives so PPP structured deals. Blended finance is used to finance climate change projects by catalysing or crowding public funds in private investment, which helps to mitigate project risks, reducing their costs and increasing their success factors.
*Green sukuk	Green and social impact sukuk are Islamic financing instruments that can be used to scale up financing of socially responsible and environment focused investment. They are green bonds where the risks and returns are shared based on certain rules in accordance with investors' financial contributions. The first green sukuk issuance was undertaken in Malaysia in 2017 to finance a renewable energy project whose investment reached 58.5\$ million. This was followed by the first green sovereign sukuk in Indonesia in 2018 amounting to 1.25\$ billion to finance renewable energy, sustainable land use, waste management and green tourism.

[45] The EBRD Evaluation Department (EvD) identified 63 lessons that were sufficiently relevant and specific to climate finance. EvD clustered the lessons into three stylised categories that reflect the various roles played by the IFIs in the climate finance domain. See November 2021, EBRD Evaluation Department; What does a decade of evaluation reports say about the future of International Finance Institutions' interventions in climate finance?

When IFIs act on climate change, they use the above-described finance instruments in a large variety of methods, which are gathered under three main domains, which are financing, mobilising, and transforming the market where climate action promoter can find their needs[45]:

The financing consists of investing in projects with the IFIs' funds and consists of five main steps:

- Identifying bankable projects.
- Mainstreaming of climate change in existing operations.
- Appraising investment risks, including climate-related ones.
- Designing/Accompanying the design of the projects and providing adequate financial instruments.
- Measuring, monitoring, and evaluating results - progress and results framework.

**Mobilising** consists of different instruments that aim at catalysing third-party public or private finance flows to climate projects):

- Issuing green bonds.
- Supporting the carbon markets (when relevant and existent).
- De-risking through A/B structures, guarantees, junior debt positions, structure funds, and concessional finance.

- Building capacity of local financial institutions through TA and credit lines.
- Piloting, introducing new ideas or methods.

**Transforming** markets includes all activities that aim at enabling environments to facilitate climate action, such as:

- Sharing knowledge and good practices.
- Convening and engaging in policy advocacy.
- Providing technical support to promote policy reform and strengthen institutional capabilities.
- Coordinating donors, governments and between IFIs.

## 5.2. Elements of Success and Recommendations

Some constraints regarding accessing climate finance for or by local authorities mentioned in the first section of this Guidebook may result from the IFIs paradigms, which do not effectively integrate the sui generis aspect of the climate action commanded by local authorities' particularities. Therefore, the financial instruments offered by the IFIs can risk not being used.

In the above-discussed context, new paradigms or approaches should be applied by both IFIs, in concord with national and sub-national actors, to allow funding of small-scale projects that are advanced by cities in the framework of approved climate action plans (e.g., SEACAPs) that have specific targets to reduce GHG and ensured political support by local authorities' councils and central authorities.



## Recommendations linked to IFIs

- To link climate finance with development goals, financial institutions should mainstream climate change considerations into development cooperation. IFIs should also engage in a dialogue with relevant offices and institutions of the beneficiary countries.
- IFIs should enhance the incorporation of climate considerations into conventional lending. Currently, banks need to sufficiently tend to consider climate change as a critical factor in lending decisions. A move to correct this would impact the entirety of the sector broadly.
- IFIs should continue strengthening the capacity-building dimension of their work, starting in the well-disposed Clima-Med countries, including their 'push for building better institutions' [46]. This should be done in cooperation with host states.
- IFIs should build on the projects developed within the Sustainable Energy Access and Climate Action Plans (SEACAPs) in the Clima-Med countries. The projects selected in these SEACAPs have been through a process of prioritisation and have the support and buy-in of local stakeholders. They are an excellent pool of projects to start with. Different grant instruments could be used to increase these projects' maturity further.
- If IFIs cannot directly finance small municipalities, there is a need to strengthen cooperation with national financial institutions (e.g., National Development Banks), who can act as financial intermediaries.
- There is a need to streamline the decision-making process. In both terms of submission of proposals and funds allocation and mobilisation, the process should involve as few decision-making involving as few actors as possible. This can be achieved while maintaining a high standard of technical quality and financial robustness by setting technical standards (level of definition, reference to applicable national regulations or international standards) and by setting financial performance standards for project eligibility.
- IFIs should rely on the concept of climate cost efficiency. The ratio between investments and climate results will be determined, quantified, and specified at the stage of project submission with time horizons of 2030 and 2050.
- There is a strong case for adaptation finance in developing countries provided by IFIs. Adaptation finance would be strengthened by long-term adaptation planning, national adaptation investment plans; pipeline screening; project preparation support; and downstream transaction simulation (IFC 2021).
- As the National Development Banks are an essential player in climate finance in Clima-Med countries, IFIs should enhance their efforts to build capacity and facilitate access to funds.

## Recommendations linked to national and local authorities

- Mainstreaming climate change into national development planning and preparing national strategies for mobilising international funding are among the pre-conditions of productive cooperation with IFIs.
- National governments should consider global climate finance strategies when preparing their investment plans.
- National authorities should keep improving the regulatory framework for climate investments in an iterative process coordinated with local authorities and IFIs.
- National authorities should develop climate finance taxonomies following the example of the EU.
- Local authorities should aim to anchor their climate change adaptation and mitigation process in strategic planning documents (such as the SEACAPs) and increase individual projects' maturity.
- National authorities should strengthen climate information architecture by assessing climate risks, allowing accurate market pricing, and enabling informed investment decisions to require a robust information architecture around climate risks [47].
- The capacity of national and local authorities to prioritise, design and manage climate projects should be constantly increased.
- Local authorities should be able to specify and quantify the climate results the project is expected to achieve with time horizons 2030 and 2040 and at the end of the project's life cycle. The presentation of the project budget will need to make a clear distinction between funds that can be justified as climate action and any other funding. The primary reference for this purpose should be the EU taxonomy.
- The creditworthiness of local authorities should be constantly improved by strengthening their financial and budgetary governance, project management and other relevant skills.
- National authorities and international partners should organise programmes and platforms for improving the match between priority projects and financiers; improving project maturity; removing legislative obstacles, etc.
- National authorities should develop mechanisms for monitoring investment projects to strengthen the overall investment framework.
- Enable adaptation financing by removing obstacles such as uncertainty around climate risks, insufficient pricing of risks, insufficient access to existing climate data models, lack of bankable projects and the underapplication of taxonomies of climate resilience investments.

[47] idem



### 5.3. Success stories

#### Dedicated Finance Instruments

##### The EIB /GEF regional project in Latin America, The GEF LATAM Climate Solution Fund

Launched in 2021 with a target of 200 million USD and the objective to support local projects. The aim is to overcome the tendency to concentrate the available financing on large projects in this way, excluding medium-sized activities.

The fund aims to provide equity and quasi-equity support with a new private equity fund focusing on supporting companies that promote climate action and environmental sustainability. Beneficiaries of the equity fund are small and medium private companies that promote climate action and environmental sustainability in clean energy and energy efficiency, sustainable food and agriculture, and sustainable urban solutions.

A commitment to the Fund will contribute to EU policy and priorities about climate action and environmental sustainability

outside of Europe. It will support the achievement of the UN sustainable development goals (SDGs) and also contribute to a green recovery from the COVID19- pandemic. It will also represent a private initiative supporting the national climate action plans (and the SEACAPs). The Fund will contribute to the Bank's Climate Action and Environmental Sustainability targets outside the EU. Therefore, the operation is proposed under the Climate Action and Environment Facility (CAEF). The replication of this experience can be considered for the implementation of SEACAPs in Southern Mediterranean countries.

##### Financing of EDF's off-grid solar projects and ventures in Africa,

With *Electricité de France* as the intermediary, this 50 million EUR project started in 2020 to finance EDF International's off-grid electrification activities in Africa undertaken through subsidiaries and portfolio companies.

This includes developing, constructing, distributing, installing and operating solar home systems, solar irrigation solutions, and small mini-grids. Expanding this system, potentially with the support of the SEACAP Support Mechanisms,

could be considered to implement the SEACAPs, wherever possible, reserving a financial envelope specifically for the medium size local level projects. Covered sectors include energy, gas, steam, and air conditioning supply.



## The Global Subnational Climate Fund (SCF)

is a global blended finance initiative that aims to invest in and scale mid-sized (5 – 75 million USD) subnational infrastructure projects in sustainable energy, waste and sanitation, regenerative agriculture, and nature-based solutions in developing countries.

The SCF partners primarily with subnational authorities to identify and implement related projects financed with a blend of concessional and conventional capital and technical assistance grants that help mitigate risk and ensure financial and environmental goals are achieved. Pegasus Capital Advisors manage the SCF Fund.

As an anchor investor and partner, the Green Climate Fund (GCF) has already committed a first-loss tranche of up to 150 million USD, intended to mitigate risk at the fund level, thereby bridging the gap between public and private investors. Around %40 of the funding is dedicated to investments in buildings, cities, industry, and appliances, which are fundamental to implementing SEACAPs.

The fund structure involves %20 capital from the public sector and %80 from the private sector. The GCF provides an innovative structure, combining the strengths of private equity fund management practices by investing in multiple projects over relatively long periods and the forces of public-backed finance, such as technical assistance and concessionary capital. Financial management is provided by private equity firm Pegasus Capital Advisors, while the International Union provides technical assistance for the Conservation of Nature (IUCN). Project selection involves dual criteria – both an assessment of the impact through a technical lens and an

evaluation of the impact of the equity invested in the project.

This Fund is considered a best practice, as it includes an investment vehicle, working with public authorities (i.e., ministries of environment and energy) and having a technical body represented by an internationally recognised organisation. The Fund aims at mobilising 750 million USD in 10 to 15 countries and has a capacity-building component worth 28 million USD. This is projected to result in an expected avoidance of 76 Mt CO<sub>2</sub>eq, together with a sizable contribution to Sustainable Development Goals[48].

[48] Pegasus Capital Advisors. (2020). FP152: Global Sub-national Climate Fund (SnCF Global) – Equity. Green Climate Fund Funding Proposal. Decision B.27/01



### The InterAmerican Development Bank (IDB)'s Green Bonds

supported National Development Banks in raising commercial funds at adequate maturities in local and international capital markets by issuing green bonds.

Green bonds can provide dedicated funding to climate change mitigation, adaptation, and other environmentally friendly projects, small and large scale, with appropriate terms and conditions. They can attract national and foreign institutions and impact investors. Globally, annual green bond issues soared from 11 billion USD in 2013 to more than 150 billion USD in 2017.

The IDB supported five NDBs in each phase of issuing green bonds tailored

to their clients. The total aggregate issuance volume was roughly 192 million USD. The steps included identifying the eligible sustainable portfolio, developing evaluation, and monitoring methodologies, structuring the bond, preparing the framework, getting an independent second-party opinion and certification when relevant, and promoting the issuance, including through roadshows.

### European Fund for Sustainable Development (EFSD),

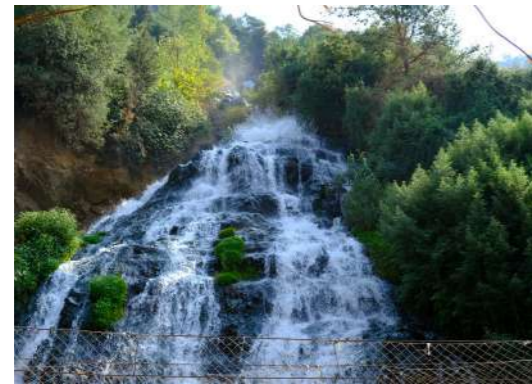
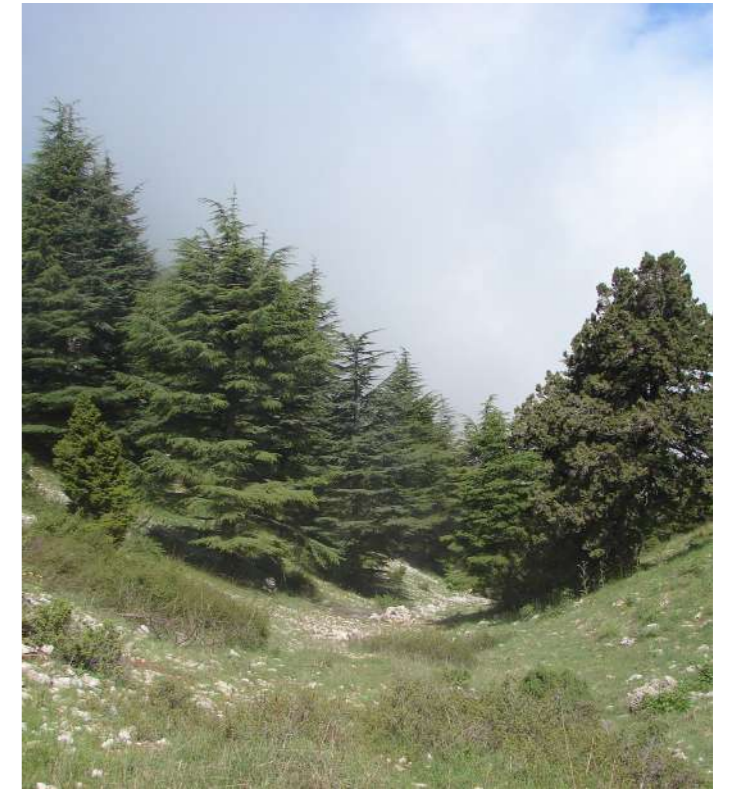
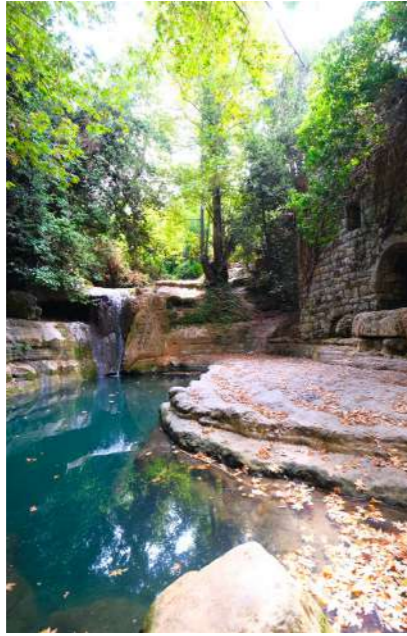
as the financial arm of the EU External Investment Plan, is using guarantees as a new way of financing development projects.

EFSD shares the investment risks, so development banks and private investors will be more inclined to lend to local entrepreneurs or finance development projects. The overall EFSD Guarantee is divided into individual guarantees focusing on five sectors: small business financing sustainable energy and connectivity local currency financing digitalisation sustainable cities.

Blending EFSD is also funding blending projects. These combine – or ‘blend’ – a grant from the EU with loans and other financing from public and private investors. The grant covers part of the project's costs and helps get it off the ground. EFSD blending projects are financed through two regional investment platforms: the Africa Investment Platform and the Neighbourhood Investment Platform.

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# Resources

- ADB, Paul Smoke, (2019) Improving subnational government development finance in emerging and developing economies: Toward a strategic approach, No. 921
- ADB, Priyanka Sood, Marshall M. Mays, and Michael R. Lindfield, (2012), Subnational Finance for Infrastructure: Potential Roles and Opportunities for ADB, Sustainable Development Working Paper Series, No.20.
- Asian Development Bank. (2012). Subnational Finance for Infrastructure: Potential Roles and Opportunities for ADB. Priyanka Sood, Marshall M. Mays, and Michael R. Lindeld. No. 20.
- Beyer, J. & Bayoumi, M. (2022). Financing a Green Transition in the Middle East. Mohammed Bin Rashid School of Government, Dubai, United Arab Emirates, March 2022
- Cities Climate Finance Leadership Alliance, (2020), Enhancing the Role of National Development Banks in Supporting Climate-Smart Urban Infrastructure, A Policy Brief for the Cities Climate Finance Leadership Alliance
- Climate Finance Regional Briefing, Middle East, and North Africa Charlene Watson, ODI and Liane Schalatek, HBS
- Crowdfunding for climate change: Exploring the use of climate frames by environmental entrepreneurs, (2021), Natalia Maehle, Pia Piroshka Otte, Boukje Huijben, Jorick de Vries, Journal of Cleaner Production 314
- DG NEAR. (2020). Municipal Finance Study on Energy, Climate and Environment Sectors in Eastern Partnership Countries.
- Directorate-General for Regional and Urban Policy, European Commission, (2019), Smaller Cities Access to External Finance, Practical Challenges and Solutions for Clean Energy Projects, by Sissy Windisch.
- ECONOLER Series, (2017), Super ESCO. An Innovative Approach to Unlock Energy Efficiency Potential, ECONOLER Series, 2017. [https://econoler.com/wp-content/uploads/2017/10/Econoler-Super-Esco-ANGLAIS\\_.pdf](https://econoler.com/wp-content/uploads/2017/10/Econoler-Super-Esco-ANGLAIS_.pdf)
- Global Center on Adaptation, (2022) Climate-Resilient Infrastructure Officer Handbook,
- Green crowding-Smaller Cities' Access to External Finance 2019- Sissy Windisch
- HSBC. (2019), Creating Green Financial Centers: A Toolkit. A report from the HSBC Centre of Sustainable Finance.
- IDB, (2021). Maria E. Netto de A. C. Schneider, Rodrigo Pereira Porto, Maria Chiara Trabacchi, Signi Schneider, Sara Harb, Diana Smallridge, A guidebook for national development banks on climate risk,
- Innovative Financing Schemes, Lessons learnt from the Covenant of Mayors Community, Covenant of Mayors for Climate and Energy Europe, [https://www.eumayors.eu/index.php?option=com\\_attachments&task=download&id=627:Innovative-Financing-Schemes---EUCoM](https://www.eumayors.eu/index.php?option=com_attachments&task=download&id=627:Innovative-Financing-Schemes---EUCoM)
- InterAmerican Development Bank, (2012), The Role of National Development Banks in Intermediating International Climate Finance to Scale Up Private Sector Investments
- Lebanese Center for Policy Studies, (2020) Restructuring Subnational Governance in Lebanon: Towards Efficient Public Spending and Reduced Regional Inequalities, Democracy Reporting International
- ODI, (2020) Securing climate finance through national development banks
- Pegasus Capital Advisors. (2020). FP152: Global Sub-national Climate Fund (SnCF Global) – Equity. Green Climate Fund Funding Proposal. Decision B.27/01
- Union for the Mediterranean (2018). Report on National-Subnational Climate Finance.
- Urban Nexus, Synthesis Report: Annex of Case Studies Urban Climate Resilience (<https://climate-adapt.eea.europa.eu/metadata/publications/synthesis-report-annex-of-case-studies-urban-climate-resilience-1/11240570>)
- World Bank (2021) The State of Cities Climate Finance, PART 2: The Enabling Conditions for Mobilizing Urban Climate Finance

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