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Summary of Good Practice of Successful Project Preparation Facilities

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¹ <http://www.citiesclimatefinance.org/2017/12/press-release-the-first-project-preparation-practitioners-forum/>

² <http://www.citiesclimatefinance.org/2016/12/ccfla-mandated-by-local-and-regional-leaders-at-marrakech-to-localize-climate-finance/>

Executive Summary

Significant infrastructure investments are needed for the world to achieve the Sustainable Development Goals (SDGs) and the Paris Agreement 2015 on climate. Yet, there is a tremendous gap between investment requirements and actual current global investment. To close it, both public and private finance sources are required. Moreover, more climate finance should be channeled from the national and international level to the local and regional level where project implementation takes place. In reality, however, many infrastructure projects cannot be linked to finance due to a number of reasons such as a lack of bankability, insufficient project development, and high risk at the early stage of project development. This is why project preparation is key to making projects “investment ready”.

This report analyses project preparation tools, approaches, main bottlenecks, and solutions, by presenting three case studies as well as highlights from experts’ interviews. Each case study focuses on a project preparation facility (PPF) that is active at the subnational level in either Latin America or Asia. The PPFs of interest are the Cities Development Initiative Asia (CDIA), the US India Clean Energy Finance Facility (USICEF) and the Emerging and Sustainable Cities Initiative (ESCI). Aligning with the Terms of Reference (ToRs) of this Research project, these three PPFs were selected by consensus by CCFLA Project Preparation Working Group members. Although very different in their scope and scale, they provide quite a wide insight of the possible services and activities that are being developed to support subnational project preparation in Latin America and Asia. As such, they appear to perfectly fit into the realization of task 1 of the Research study aiming at Reviewing of existing subnational PPFs in Latin America and Asia.

The results show that they all have developed sophisticated approaches addressing all relevant phases of the project preparation process. Emphasis on project prioritization ensures efficient and effective employment of the PPFs’ financial and human resources. “Sustainability” appear to be mainstreamed and placed as an integral part of their tools as a strategy to mitigate the risks perceived by investors in emerging or developing markets. However, the use of risk mitigation instruments such as guarantees remains limited. Concerning the type of financial support provided by PPFs, it is apparent that project preparation support still remains mostly dependent on grants mostly provided by public institutions and that the subnational climate projects themselves are still also financed by development institutions or other public donors and only rarely by the private sector. Like in other areas of the world, there are further remaining challenges concerning a lack of institutional capacity of local and regional governments as well as current legal frameworks often creating a non-enabling environment. Furthermore, the nature of many infrastructure projects (e.g. social infrastructure) implies that their returns may be insufficient and thus not able to attract private sector investment.

This report explores solutions and develops recommendations through expert discussions showing how risk mitigation instruments, project structuring and fair PPP models may be combined and tailor-made to specific project characteristics. In addition, suggestions for new PPF approaches are made. A summary of these main findings is presented below.

Information sharing among PPFs and also including project developers and finance institutions is identified as key to spreading success stories and sharing successful approaches which will lead to an acceleration and improvement of project preparation support. This statement confirms the importance of the CCFLA Project Preparation working group's main purpose and core activities which include the organization of a PPF Forum every year.

Main bottlenecks, solutions and recommendations in project preparation

Bottleneck	Relevant level	Solution	Relevant scope	Recommendation
Funding constraints for project preparation	Local, national and regional level	Scaling up funding sources	Enabling national policies	<ul style="list-style-type: none"> National governments should contribute to PP funding Financial incentives could encourage private sector investments in PP
	Project level	Scaling up PPF capacity	PPF: approaches and business models	<ul style="list-style-type: none"> Project preparation costs can be made part of project loans; PPFs may develop more commercial business models when appropriate (RE/EE sectors)
Political buy-in	Local and regional level	Making need of climate-resilient infrastructure transparent	City: commitment to climate finance PPF: access to local authorities	<ul style="list-style-type: none"> Climate risks should become integrated part of cities' development plans and decision processes. Local experts may facilitate collaboration with cities Strong domestic financial institutions may ensure the linkage between all levels
	Project level	Inclusion of local authorities and stakeholders (including local financial institutions and civil society) in project development	PPF: inclusive approaches	PPFs should include cities and stakeholders ((including local financial institutions and civil society organizations) from the beginning of project preparation.
Lack of private sector participation	Project level	Development of PPP models	PPF: project structuring	<ul style="list-style-type: none"> Solid local financial intermediaries should be supported; Cities' and PPFs' capacity for private sector collaboration should be strengthened since the early stage of PP; PPFs should demonstrate to governments that quality technical assistance in project preparation reduces inherent risks and improves chances to attract the private sector and achieve financial closure

Financial risks, low creditworthiness of municipalities	Local level, project level	Application of risk-mitigation instruments, reduction of early-stage risks by project preparation	PPF: risk mitigation through project	<ul style="list-style-type: none"> • PPFs should make use of risk mitigation instruments in collaboration with development finance and private sector finance; • PPFs should share success stories and lessons learnt with risk mitigation instruments. • PPFs may create and share track record of successful projects to raise creditworthiness of cities
Insufficient project organization	Project level	Improving capacity of project developers	PPF: project management	<ul style="list-style-type: none"> • PPFs should be engaged throughout the whole project preparation stage; • PPFs should carefully select sectors, regions and scope of activities to develop sufficient expertise; • Local experts should be hired.
	National and international level	Improving capacity of project developers	PPF: project management	<ul style="list-style-type: none"> • National hubs of expertise could provide the right technical advises and ensure the linkage with the adequate source of funding; • Identify similar project initiatives at higher levels to avoid duplication of work and fragmented planning
Legal obstacles	National level	Legislative reforms	Legal framework	National legal frameworks should be improved to raise allocation of climate finance at the city level.
Lack of institutional capacity at local and regional level	Local and regional level	Improving capacity of local and regional governments	PPF: capacity development	<ul style="list-style-type: none"> • PPFs may combine preparation with capacity building for local and regional governments. • Coordination between different levels of government
Economic and political risks	National and international level	Providing finance through development institutions	General environment	PPFs and development finance should lower the higher overall risk by project preparation and finance and crowd in additional finance.
	Local and regional level	Coordination between different levels of government across time	PPF: access to local authorities; General environment	PPFs should promote continuity and coherence of projects amidst continuous political and institutional transitions
Sustainability	Project level	Making ESG assessments part of PPF approaches	PPF: ESG due diligence within procurement rules	PPFs should make support conditional upon sustainability requirements

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1 Introduction

Infrastructure is the backbone of any economy. To improve people's well-being and achieve the UN Sustainable Development Goals (SDGs) and the goals of the Paris Agreement, tremendous amounts of investment are necessary. A significant part of these investments is required for infrastructure in urban areas. However, between investment needs and actual investment, there is an immense global financial gap. Closing this gap requires the development of a pipeline of well-prepared infrastructure projects contributing to sustainable development in general, but especially also considering climate change mitigation and adaptation needs in particular. In this context, local governments and cities play a crucial role. All over the world, in urban areas the pressure for inclusive, fair and efficient transport solutions, renewable energy and basic social services like housing is increasing and this is where climate resilience has to be realized and where investment considerations should target a low emission development. Most of these investments will be made in cities by cities.

Additionally, climate finance and the implementation of climate policies are often not well aligned, thus forming a second gap with regards to urban infrastructure finance. International agendas like the SDGs and the New Urban Agenda (see Habitat III, 2017) underline the importance of both levels, national and subnational for their achievement. Yet, financing for the implementation of such agendas, and in particular climate finance, is still largely operating at the international level while local and regional governments are often excluded. To close this second gap, efforts to channel finance towards cities and urban areas are required. This need has been largely expressed by Local Governments themselves, which often struggle to access climate finance. As a response, in 2016, at the occasion of COP 22 in Marrakech, Local Leaders adopted the Roadmap for Action of Marrakech² during the Climate Summit of Local and Regional Leaders Summit. This strategic document, which mandates the Cities Climate Finance Leadership Alliance (CCFLA) for its implementation, addresses in detail the complex overall financial issues – including project preparation – to support climate action at the local level.

In fact, project preparation has been defined in 2015 by CCFLA, as one of its top five priorities to localize climate finance, and, consequently, as the thematic focus of the 2017-2018 CCFLA workplan. As the alliance (CCFLA, 2017, p. 6) observes, “the recognition of the need for ‘localizing’ global agendas has been growing, and promises a significant acceleration in efforts to make the financing of local climate action a priority“. This requires “investment-ready” infrastructure projects, thus pointing to the importance of supporting developers of infrastructure projects in the preparation process. The role of subnational project preparation facilities (PPF) is key in this regard. In addition, CCFLA states that, through the aggregation of cooperation efforts and commitments coming from a wide range of stakeholders, “project preparation also serves as a key enabler of the delivery process for setting new effective financing architectures, models and channels for local and regional governments’ low carbon projects and development plans” (ibid p 6). In this context, renewing project preparation un-

² <http://www.citiesclimatefinance.org/2016/12/ccfla-mandated-by-local-and-regional-leaders-at-marrakech-to-localize-climate-finance/>

derstanding and support for action at the subnational level is key for the delivery of the Paris Agreement.

Even though there are countless ideas and plans for infrastructure projects by both the public and the private sector, a solid pipeline of bankable projects that can effectively address the climate challenge is still lacking in most countries. Especially, local and regional governments in developing and emerging countries do not have sufficient financial resources to keep up with actual investment requirements. The term “bankability” is critical and there are factors that influence a project’s bankability, which go beyond the reach of PPFs. However, comprehensive approaches to project preparation have a considerable potential to increase the number of projects ready for implementation. Moreover, the defined objective of PPFs is to link projects to finance by the public or private sector, national and international development banks, climate funds, and potential other donors. Thus, subnational PPFs are fundamentally important in setting up project pipelines with high quality bankable infrastructure projects and in directing finance at the international or national level to the local and regional level. Additionally, PPFs may be helpful in building lasting capacities and making the general environment for project investment and realization more enabling by sharing its expertise and experience as well as by fostering collaborations and policy dialogues across levels of government.

A large amount of scientific literature has addressed the need for better understanding the structuring, processes, results and impacts of PPFs working on “traditional” infrastructure deals (large scale, several hundred millions budget, based on national priorities and with national interlocutors). However, almost no precise analysis has been put forward in relation to the project preparation supply and demand dynamics when it comes to the specifics of local and regional levels of action. A knowledge gap on needs and barriers, existing experiences and financial track records, on both sides of the “local” equation (local clients, PPFs for subnational infrastructure investment) remains and needs to be answered; including with a view on the climate lens integration on the design of infrastructure investment deals.

With this thematic focus CCFLA aims to tackle the numerous challenges that Project Preparation Facilities (PPFs) face at the local and regional level while at the same time providing a platform for the sharing of experiences of project preparation practitioners and raising awareness on financing requirements for urban infrastructure projects.

This report was prepared as a result of the first Project Preparation Practitioner Forum organized by CCFLA during COP23. The objective of this report is to identify factors for successful project preparation and helpful tools and methodologies as well as to provide recommendations for further research and debates to be facilitated by the CCFLA Project Preparation Working Group.

The resulting conclusions and recommendations will hopefully stimulate new activities and inform approaches of existing and newly emerging project preparation facilities (PPFs).

This report compiles the profiling of three subnational PPFs and conversations with experts from different institutions, former or current PPF staff members as well as independent consultants. Out of

this, several conclusions can be made concerning commonalities, differences, successful approaches and remaining bottlenecks.

The report is structured as follows: Chapter 2 describes details of the infrastructure investment gap as the baseline problem. Chapter 3 provides an overview on terms and definitions relevant for PPFs and contains a literature review on subnational project preparation challenges. In Chapter 4, the three PPFs are presented in case studies. Chapter 5 makes preliminary conclusions that lead to the expert discussion, which is also summarized in this chapter. The final recommendations are formulated in Chapter 6.

2 Background – The Need for Infrastructure Investment

Global demand for infrastructure is rising. The main reasons for this trend are: population growth, economic growth, increasing industrialization, and notably, urbanization. These factors are particularly acute in developing countries and emerging economies. Globally, up to 1.4 million people are moving into urban areas every week (Ijjasz-Vasquez, 2017). Such rapid migration is leaving many regions with an extremely high proportion of total population in urban areas, for example, 80 percent of Latin American and Caribbean populations and 58 percent of East Asian and Pacific) population currently live in urban areas (World Bank, 2016). This demonstrates the increasing need for infrastructure and also explains why cities have an overwhelmingly important role in the debates about infrastructure needs and project implementation. Demand for infrastructure not only implies a certain quantity of infrastructure projects is required, but also means that the quality of infrastructure projects is essential to improvements in people's well-being, including climate resilience and social prosperity.

Another closely related aspect further highlighting the importance of infrastructure development is its role in the achievement of the Sustainable Development Goals (SDGs) and goals set in the Paris Agreement. Climate change mitigation and adaptation are closely tied to the way infrastructure is designed and implemented (see e.g. OECD, 2017, pp. 89–120). Individual projects as well as larger infrastructure systems such as transport networks will play a key role in the transition towards a low-carbon economy. The usually energy-intensive and asset-heavy nature of infrastructure, however, also implies that a large amount of finance is needed to create change. According to Bhattacharya et al. (2015, p. 1), “a major expansion of investment in modern, clean, and efficient infrastructure will be essential to attaining the growth and sustainable development objectives that the world is setting for itself”. Connecting these objectives again to cities, a report by C40 Cities and Arup (2016, pp. 52–72) clearly shows the significant potential for reduction in carbon emissions in cities and the direct and indirect key role of infrastructure to achieve the low-emission path. Indeed, the report argues that cities may reduce their emissions by almost 50 percent until 2050 compared to the business-as-usual scenario by exploiting local opportunities and building partnerships at the city level (ibid., pp. 79–80).

Estimates of the required infrastructure investment volume differ depending on the methods applied but all sources converge on the immensity of the amount needed: The World Economic Forum (WEF, 2013, p. 4), suggests a global annual investment need of USD 5 trillion until 2020. According to the Global Commission on the Economy and Climate (2014, p. 19), total investment needs from 2015 until 2030 is USD 93 trillion. A more recent study by McKinsey (2016, pp. 2–3) estimates investment requirements to be USD 6 trillion per year over the next 15 years. The UN Conference on Trade and Development (UNCTAD, 2014, p. 140) states an estimate for developing countries calculating an annual need for investment expenditures of USD 3.3 to 4.5 trillion between 2015 and 2030. In the specific context of cities, the City Climate Finance Leadership Alliance (CCFLA) (2015, p. 14) estimates of USD 4.1 to 4.3 trillion annual urban infrastructure investments would be required, where the quality of infrastructure complies with a business as usual scenario. If urban infrastructure is to be climate resilient and emission-reducing, the estimate of required investment would be increased by 9 to 27 percent (*ibid.*).

The current volume of investments fall well short of those required. According to the WEF (2013, p. 4) and McKinsey (2016, pp. 2–3), current investment volume ranges between USD 2.5 and 3 trillion per year, and for developing countries, UNCTAD (2014, p. 140) provides an estimate of USD 1.4 trillion per year: well short of any of the estimates of required investment stated above. In addition, a report of the International Institute for Environment and Development (IIED) estimates that only 10 percent of climate finance actually effectively reaches the local level (Soanes et al., 2017, p. 14) although global climate finance has been slightly rising in the average over the past five years (see Climate Policy Initiative, 2017). Consequently, there is a large infrastructure investment gap of between USD 1 trillion (WEF, 2013, p. 4) and 3 trillion (McKinsey, 2016, pp. 2–3) annually. For developing countries, the investment gap is between USD 1.9 and 3.1 trillion (UNCTAD, 2014, p. 140; Morgado & Casado-Asensio, 2015).

For the two regions this study focuses on, Latin America and Asia, the numbers are also startling: infrastructure financing needs in developing Asia including climate change mitigation and adaptation costs amount to USD 1.7 trillion annually from 2016 to 2030, leaving a gap of almost USD 500 billion per year (ADB, 2017, pp. 12, 15). In Latin America and the Caribbean, annual infrastructure investment of USD 120 to 150 billion is required and an additional investment of USD 30 billion per year is needed to mitigate and adapt to anticipated climate change (Serebrisky et al., 2015, p. 8).

While these numbers make the dimension of the challenge obvious, they also highlight the potential for investors. The International Finance Corporation (IFC, 2016, p. 2) notes that the commitments made in the Paris Agreement imply accelerated efforts towards climate solutions, including renewable energy, energy efficiency, sustainable cities, forest management and climate-smart agriculture. An assessment of 21 developing and emerging countries reveals that there is a so-called “climate-smart” investment potential of USD 22.6 trillion in various sectors from 2016 to 2030.

Currently, liquidity in global financial markets is available in abundance and this has become even more so in the course of the fall in the interest rate level after the global financial crisis and the sub-

sequent unconventional and ultra-expansive monetary policies in industrial countries. Thus, It would be wrong to say that what is needed is more money, but rather viable investment opportunities. The global level of interest rates being so low, investors are looking for profitable investment alternatives. The New Climate Economy (NCE, 2017) estimates the amount of assets under management by a range of private and institutional investors to reach almost USD 120 trillion. Infrastructure could potentially provide a solution to many investors. However, there are several obstacles preventing investment from flowing to infrastructure, such as limits due to regulation and investors' portfolio diversification strategies (see e.g. Nassiry & Nakhoda, pp. 18-19). Another one is risks that are specific to certain infrastructure sectors. Besides these factors, one of the main barriers is the lack of well-prepared urban projects. Thus, successful project preparation is also of critical importance to create a pipeline of projects suitable for such investment. This is the focus of this report.

3 Current Challenges and Suggested Solutions in Project Preparation

3.1 What is a Project?

Defining what is meant by the term 'infrastructure project' is a non-trivial matter. Depending on sector, individual infrastructure projects differ significantly in size, purpose, environmental setting, ownership, and financing modalities. In reality there is a grey zone of what can and cannot be defined as an infrastructure project. For the purposes of this report, an 'infrastructure project' can be considered as the physical and digital components of systems that provide services required to enable, sustain, or enhance societal living conditions. Examples of infrastructure projects include:

- **Water** (including harvesting, storage, management, distribution, treatment and recycling);
- **Energy** (including generation, storage and distribution; energy efficiency)
- **Solid waste management** (including collection, distribution, processing, recycling and storage)
- **Transport networks, nodes and fleet** (including pedestrian, bicycle, vehicular, rail, waterborne and air transportation)
- **Communication networks** (including telephone, cellular and data)
- **Social infrastructure** (including education, healthcare, sports and recreation, law enforcement, fire and emergency services)
- **Food systems** (including agriculture, storage, processing and distribution)
- **Mining and extractive industries** (including mines and processing facilities)

While communication networks serve commercial purposes, a hospital as an example of social infrastructure provides basic services. As a consequence, ownership of such different projects often differs as well (private vs. public ownership). In the energy sector, gas production infrastructure is much more capital intensive than decentralized solar power plants, which can be owned, operated and potentially also financed by private households. Depending on the characteristics of a project, PPFs

have to emphasize different aspects while project developers need different capacities to be strengthened. Importantly, different financing models are appropriate according to different circumstances. As all PPFs profiled in this study agree, it is not possible to apply highly standardized approaches because all infrastructure sectors are different and face their own unique challenges. As a consequence and for the purpose of this study and future work of CCFLA, a clarification of the project spectrum may be needed to avoid any confusion and enable both standardization and differentiation.

3.2 Achieving Bankability

In many regions of the world, successful project preparation is fraught with difficulties. There are a large number of project plans requiring financing, and a large volume of capital available for investment, but the investment gap is not being closed. There are several important reasons for this. For infrastructure projects to be financed either by public sector capital or private sector capital, several conditions need to be fulfilled. They can be summarized by the term “bankability”. This means that projects have to be prepared up to a stage where an investor is willing to engage. Factors required to demonstrate bankability include proof of project feasibility, project development, financial viability, demand planning, funding of operation, acceptance in the community, regulatory approvals, and legal compliance). Countless projects fail to achieve bankability, for numerous reasons which include:

- **Insufficient project development:** in many projects, business plans are unrealistic, legal, financial, procurement and other baseline work is insufficiently prepared.
- **Missing link to the financial sector:** projects need access to the network of finance institutions.
- **Insufficient returns:** for a private investor to step in, a project has to generate a revenue stream exceeding a certain minimum level. Bankability may basically be achieved with low returns, but then the finance provider is most probably a development institution or another donor. A major reason for weak revenues may be that users, especially in developing countries, cannot afford to pay for the services.
- **High risk in the development phase:** infrastructure projects are planned for the long term. This involves high risk particularly in the preparation phase when many influence factors are still uncertain. Many investors are therefore not willing to spend resources on project preparation.
- **Long-term nature of infrastructure investment vs. short-term preferences of investors:** the long-term horizon of infrastructure projects requires large fixed capital investment at the beginning while returns accumulate much slower over time. This may be in contrast to an investor’s short-term preferences.
- **Resistance from the local community:** projects may experience resistance from stakeholders, vulnerable groups or NGOs in the local community possibly reducing returns and jeopardizing project developers’ and investors’ reputation.

The reasons for project bankability failure show that proper project preparation in technical, financial, legal, sustainability, and governance regards is key to achieve a higher success rate of projects. Thus, the interest in this report is in approaches and methodologies of PPFs to address the above challenges in the best way.

The process of project preparation from initial planning to the beginning of implementation requires considerable financial resources. Depending on respective estimates, the share of project preparation costs in total project costs varies between 1 and 10 percent (see Nassiry & Nakhooda, 2016, pp. 37–38). If the total global infrastructure demand of USD 93 trillion between 2015 and 2030 (Global Commission on the Economy and Climate, 2014, p. 19) is taken as a baseline, estimated project preparation costs range from USD 930 billion to 9.3 trillion in total and from USD 62 to 620 billion per year (Nassiry & Nakhooda, p. 39). For low- and middle-income countries, estimated project preparation costs per year are between USD 40 and 400 billion (*ibid.*, p. 39).

3.3 The Scope of Project Preparation Facilities

Thus, good project preparation is essential in making infrastructure projects bankable. The role of Project Preparation Facilities should thus be analyzed, since they play a crucial part in closing the investment gap. Project preparation itself is a wide field and different PPFs differ significantly in their scope and areas of activities. All PPFs profiled in this report describe their main task to be the preparation of projects to a bankable stage and to link them with financing institutions.

GIZ (2017) starts with the general term of “project facility”. Project facilities can be divided into Project Finance Facilities (PFF) and Project Preparation Facilities (PPF). CCFLA (2017a, p. 29) takes an alternative approach and distinguishes between PPFs and Project Preparation Initiatives (PPI), where the former usually supports project preparation through all its phases while the latter provides broad support not specifically tied to project preparation phases. According to the GIZ definition, PFFs may provide project preparation support through technical assistance but their main characteristic also is to include an own fund to finance projects. In most cases, this applies to banks being part of or hosting a PFF. PPFs, in contrast, are focused on technical assistance and providing funding for the project preparation process. However, they do not include a financing entity. Rather, PPFs consider themselves as being a facilitator to link a project to a certain external source of finance. PPF activities may go beyond technical assistance in its narrowest sense and often also include capacity building for project developers, establishing effective implementation frameworks and advocating for an enabling environment. GIZ further distinguishes between PPFs with the following properties:

- **City focus:** some PPFs have an exclusive focus on cities. In most cases, those who do not share this characteristic do not explicitly exclude activities in cities but do not emphasize them necessarily more than rural areas. So, PPFs may be characterized as either “exclusively urban” or “inclusively urban”.
- **Geographic focus:** some PPFs are globally active while many of the big facilities are focused on a specific world region, such as several countries, continents or parts of continents.

- **Thematic focus:** basically, a PPF may just work on the objective of implementing projects successfully such that operation can start. However, many PPFs have specific objectives like climate resilience or climate change mitigation and adaptation, provision of basic services, energy efficiency or poverty reduction. Most of the large PPFs have a considerable number of objectives included in their methodologies.
- **Output focus:** as part of preparation for direct project implementation and also going beyond the focal point of a single project, PPFs can extend their activities to a considerable number of different outputs. They may be engaged in developing frameworks like, among others, national legislation and institutions, urban development plans or sectoral strategies. As already mentioned, capacity building for municipalities can be another emphasis. With regard to finance linkage, PPFs may either target development financing from development institutions like multilateral, bilateral or national development banks, or from private sources like commercial banks or capital market investors. Additional donors may be included, especially when projects have a clear focus on sustainability.
- **Partnership structure:** PPFs can also differ in their partnership structure. They can be created and hosted by a single entity but as well be the product of a multi-partner collaboration.

For the three PPFs profiled in this report, all of them have a clear regional focus, two are exclusively urban while one is inclusively urban. Thematically, two PPFs have a quite broad sustainability focus including environmental, social as well as governance issues while one of them has an exclusive focus on renewable energy. With respect to the output of project preparation support, all perform manifold activities in the narrow project preparation process that is directly focused on a project. Two of them also provide capacity development services. As is given by the very basic definition of a PPF, all three of them consider the linkage of project developers and investors as their very central goal. Concerning the partnership structure, one PPF was established and is hosted by a single entity while the other two are a multi-partner facility. One Facility considers itself as a PPF. However, as explained above, PPFs may well include comprehensive project preparation services just as PPFs.

Within the project preparation process, there is no definite and unique way of proceeding. However, several stages can be distinguished as a common denominator (CCFLA, 2017a; GIB, 2014):

Pre-feasibility planning: this stage includes the first steps involving project selection and the decision to further develop a project. Pre-feasibility studies, cost estimates, funding analyses and testing of alternative approaches can be part of pre-feasibility planning. First consideration of environmental and social factors takes also place in this phase.

Feasibility planning: this phase proceeds to a more technical level and involves more concrete project aspects like feasibility studies, demand planning, engineering, sustainability and resilience aspects, technical planning, institutional and procurement arrangements, business plan, environmental and social impact assessment.

Operation phase planning: long-term planning implies taking the operation phase of a project into account. Therefore, this stage emphasizes the development of public and private delivery options, formal quantitative analyses, market testing and selection of procurement approach.

Processing and approval: in this phase, financial, administrative, legal, procurement and risk management arrangements are made. Moreover, support in project approval is provided.

Even though there is considerable heterogeneity among PPFs profiled in this report, they describe their main task to be the preparation of projects to a bankable stage and to link them with financing institutions.

3.4 Overview of existing PPFs

In the mapping of its member organizations and initiatives, CCFLA (2017a, pp. 29–30) identifies 27 PPFs, of which 11 operate in Asia and/ or Latin America and 15 have an exclusively urban focus and 25 operate at the subnational or project level. Most of them are engaged in early stage development activities like improving the environment or strategic planning. Only a few are active in post-preparation phases such as implementation or post implementation. The more PPFs accumulate experience in successful preparation, the more they are expected to also engage in post-preparation activities.

This section gives an overview of existing PPFs in Asia and in Latin America. Their main properties and fields of activity are described. Note that some of them are PPFs according to the above definition by GIZ (2017). However, as explained, PPFs and PPFs share many common features. Many of them are tied to development banks, which also serve as a finance source in most cases. While some have a pure development focus, others have incorporated a specific emphasis on climate. It is also remarkable that a large number of them is exclusively focused on cities. Even though most of them are funded by national or international institutions, they are subnationally oriented in their collaboration with cities and private sector partners. PIDG is also active in Africa but is in Table 1 because a large proportion of its resources are engaged there. CFF does not have a regional focus but has been active exclusively in Latin America since its creation so that it is exhibited in the Table 2. FELICITY will also be engaged in China but is exhibited in Table 2 due to its focus on Mexico and Brazil. Data on number

of projects and average financial support per project are provided for those facilities where information is available.

Table 1 Summary of subnational PPFs in Asia

Description	Specific information
CDIA – Cities Development initiative for Asia	
Lead organizations: Asian Development Bank (ADB) & GIZ Since: 2007 Facility type: PPF City focus: exclusively urban Thematic focus: no sectoral focus Partnership structure: multi-stakeholder Number of projects supported: more than 70 Average support per project: USD 250,000	<ul style="list-style-type: none"> - Project preparation support in medium-sized cities - Prioritization of urban infrastructure investments - Pre-feasibility studies - Linking to finance
ACCCRN – Asian Cities Climate Change Resilience Network	
On behalf of: Rockefeller Foundation Since: 2008 Facility type: PPF City focus: exclusively urban Thematic focus: climate focus Partnership structure: multi-stakeholder Number of projects supported: 35 Average support per project: USD 350,000	<ul style="list-style-type: none"> - Membership-based platform - Support of individual practitioners - Generating and sharing knowledge about urban climate change resilience
UEIF – Urban Environment Infrastructure Fund	
Lead organization: ADB Since: 2009 Facility type: PPF City focus: exclusively urban Thematic focus: no sectoral focus Partnership structure: single actor Number of projects supported: about 40 Average support per project: USD 200,000	Grants for technical assistance and investments
UFPF – Urban Project Finance Initiative	
Lead organization: ADB Since: 2011 Facility type: PPF City focus: exclusively urban Thematic focus: climate focus Partnership structure: single actor	<ul style="list-style-type: none"> - Pooled grants from UEIF - Pooled grants from other urban trust funds - Framework agreements with financing partners - Knowledge provision and exchange
AAPP – Adapt-Asia Pacific Project	
Lead organization: USAID Since: 2009 Facility type: PPF City focus: inclusively urban Thematic focus: climate focus Partnership structure: single actor (extensive partner network)	<ul style="list-style-type: none"> - Facilitating access to climate change adaptation finance - Building national capacity for adaptation - Technical assistance - Organizing focused training and peer-to-peer learning - Promoting regional networking and training

Table 1 *continued*

AP3F – Asia Pacific Project Preparation Facility

Lead organization: ADB

Since: 2014

Facility type: PPF

City focus: inclusively urban

Thematic focus: no sectoral focus

Partnership structure: multi-stakeholder

- Financial assistance for public sector agencies of member countries to support financial, legal and technical advisory services
 - Support for enabling reforms and capacity building:
 - upstream sector reform
 - due diligence of project structuring
 - preparation of information memoranda and marketing
 - preparing project documentation and financial models
-

USICEF – US India Clean Energy Finance Facility

Lead organizations: Climate Policy Initiative & Indian Renewable Energy Development Agency

Since: 2017

Facility type: PPF

City focus: inclusively urban

Thematic focus: renewable energy

Partnership structure: multi-stakeholder

Number of projects supported: 5

Average support per project: USD 250,000

- Providing technical assistance
 - Linking projects to finance
-

PIDG – Private Infrastructure Development Group

Lead organization: autonomous governance, membership of five European and Australian ministries as well as development finance institutions

Since: 2002

Facility type: PPF

City focus: inclusively urban

Thematic focus: no sectoral focus

Partnership structure: multi-stakeholder

Number of projects supported (by InfraCo Asia): 12

Average support per project: USD 500,000 (2–10 million in case of co-development and joint venture partner)

- Mobilization of private sector investment
- Group of subsidiary companies focused on
 - Technical assistance
 - Provision of guarantees
 - Facilitation of private sector participation
 - Provision of debt

Source: GIZ (2017), PIDG (2017), CCFLA (2017)

Table 2 Summary of subnational PPFs in Latin America

Description	Specific information
CSC – Platform of Sustainable and Competitive Cities	
Lead organizations: IDB, Findeter	- Planning sustainable strategies for cities
Since: 2012	- Technical assistance
Facility type: PPF	- Providing resources for project preparation
City focus: exclusively urban	- Partnerships with public and private institutions
Thematic focus: no sectoral focus	
Ownership structure: multi-stakeholder	
ESCI – Emerging and Sustainable Cities Initiative	
Lead organization: IDB	- Support to national and subnational governments in development of city action plans
Since: 2011	- Project prioritization
Facility type: PPF	- Technical assistance
City focus: exclusively urban	- Pre-feasibility planning
Thematic focus: no sectoral focus	
Ownership structure: single actor	
Number of supported projects: more than 50	
Average support per project: funding is raised by cities	
Infrafund	
Lead organization: IDB	- Identification, development and preparation of sustainable infrastructure projects
Facility type: PPF	- Linking projects to finance
City focus: inclusively urban	- Providing resources to hire specialized consulting services
Thematic focus: transport sector	
Ownership structure: single actor	
CFF – C40 Cities Finance Facility	
Lead organizations: GIZ & C40	- providing support for climate change mitigation and adaptation projects
Facility type: PPF	- Technical assistance
City focus: exclusively urban	- Project structuring
Thematic focus: no sectoral focus	- Capacity development
Ownership structure: multi-stakeholder	
Number of supported projects: 2	
FELICITY – Financing Energy for low-carbon Investment – Cities Advisory Facility	
Lead organizations: EIB & GIZ	- guidance on technical, financial and economic feasibility of investments in cities
Facility type: PPF	- capacity development
City focus: exclusively urban	- facilitation of knowledge exchange
Thematic focus: no sectoral focus	
Ownership structure: multi-stakeholder	

Source: GIZ (2017), CFF (2017), EIB (2017), CCFLA (2017)

There are further PPFs and PFFs active in Asia and Latin America. They are not depicted separately here because they do not have an exclusive focus on Latin America and/or Asia but are engaged in many world regions including at least one of the two regions of interest. Additionally, their output is often somewhat different whereas Tables 1 and 2 depict PPFs in a more narrow sense. Some of them may be considered as PPIs according to the CCFLA definition. The following list gives an overview of some of them:

- R20 Regions of Climate Action: identification, structuring, financing and evaluation of climate projects (R20, 2017)

- Global Platform for Sustainable Cities: platform for knowledge sharing and development of city action plans, not active at the level of an individual project (World Bank, 2017)
- Low Carbon City Lab: carbon emission impact assessment, investment facilitation, capacity building (LoCaL, 2017)
- IFC InfraVentures: funding of services like feasibility studies, ESG assessments, financial structuring, stakeholder engagement (IFC, 2017)
- Transformative Actions Program: enabling better access to climate finance for cities, linking subnational authorities and financing bodies, designing transformative and bankable climate actions (TAP, 2017)
- Global Innovation Lab for Climate Finance: identification, design and piloting of climate finance instruments; labs in India and Brazil (Climate Finance Lab, 2017)
- Local Climate Adaptive Living Facility (LoCAL): technical support, capacity building support to local authorities (Global Climate Change Alliance+, 2017)

3.5 Literature Review – Challenges and Suggested Solutions in Project Preparation

Research literature shows that successful project preparation is a demanding task. This section gives a short overview by focusing on the commonly encountered challenges that successful project preparation needs to overcome.

A report published by Africa investor (Danso & Samuels, 2017, pp. 4–6) concludes, based on a survey among project developers in Africa, that the major impediments for efficient project development are 1) higher required rates of return for projects in developing countries than for those in advanced economies. This is due to the high-risk perception of potential investors. According to that statistic, Africa features highest required rates of return. However, project owners in Asia and Latin America also have to pay significantly higher interest rates than those in advanced economies. First, projects in developing and emerging countries rely more on public support than projects in industrial countries. Second, risk mitigation and funding for non-economic infrastructure are more important and poorer countries. Third, likewise, it is more difficult to secure qualified professional staff in developing and emerging countries than in advanced economies. Fourth, the role of private sector project developers is more demanding in developing regions due to concerns about, among other aspects, negotiating with governments, securing risk mitigation, project design, and structuring of finance. The project success rates in Asia and Latin America are estimated at 27 percent and 25 percent, respectively, compared to 46 percent for industrial countries.³ The report comes up with a set of recommendations containing the following ones (ibid., p. 9):

³ These numbers depend on what is defined as project failure, which may differ according to individual consideration. However, it is rather the relative differences in regional performance that is relevant here.

- New partnerships in infrastructure project development between the public and private sector should be created to achieve “infrastructure-enabling environments”;
- Government programs should be established to support project development;
- Increasing use of risk mitigation instruments, guarantees, and finance facilities should be employed to ensure access to needed long-term finance.

Another study on behalf of the G20 Development Working Group (2014, pp. 39–41) identifies several key recommendations to achieve better project preparation results. They are exhibited in Table 3. In summary, they address the need for a more enabling environment for infrastructure development, for scaling up project preparation capacities and funding, and for better inclusion of the private sector, particularly with regard to financing modality.

Table 3 G20 recommendations to achieve better project preparation outcomes

-
- Priority should be given to strengthening developing country governments’ capacity for upstream activities that provide an enabling environment and lead to the identification of prioritized investment programs.
 - The scale of project preparation needs to be ramped up to support enhanced infrastructure development.
 - Funding for project preparation should be rationalized and increased.
 - There should be a clear path for countries to transition from receiving grant support for project preparation to eventually being willing and having the capability to finance it themselves.
 - The common practice of selecting the financing modality for a project prior to feasibility study should ideally be reversed, but otherwise necessitates better upstream project investigation and flexibility during project preparation.
 - Improved efforts are needed to make better use of the private sector for infrastructure design, funding, delivery and long-term operation and to leverage the overall benefits of private sector participation.
-

Source: G20 Development Working Group (2014)

A publication of the ADB (ADB, 2017) develops an approach for private investment mobilization. In a so-called Green Finance Catalyzing Facility (GFCF), sovereign and development finance grants loans to projects under the condition that they comply with specific sustainability criteria. This mitigates risks and enhances bankability of projects. Risk reduction allows private sector finance to crowd in and to complete project finance needs. Blended finance leverages given financial resources, which may be dedicated to achieving project bankability. As Figure 1 shows, in contrast to the common approach to green finance where green features are added after the project is provided with finance, the new approach requires projects to be green from the outset as a condition for securing finance.

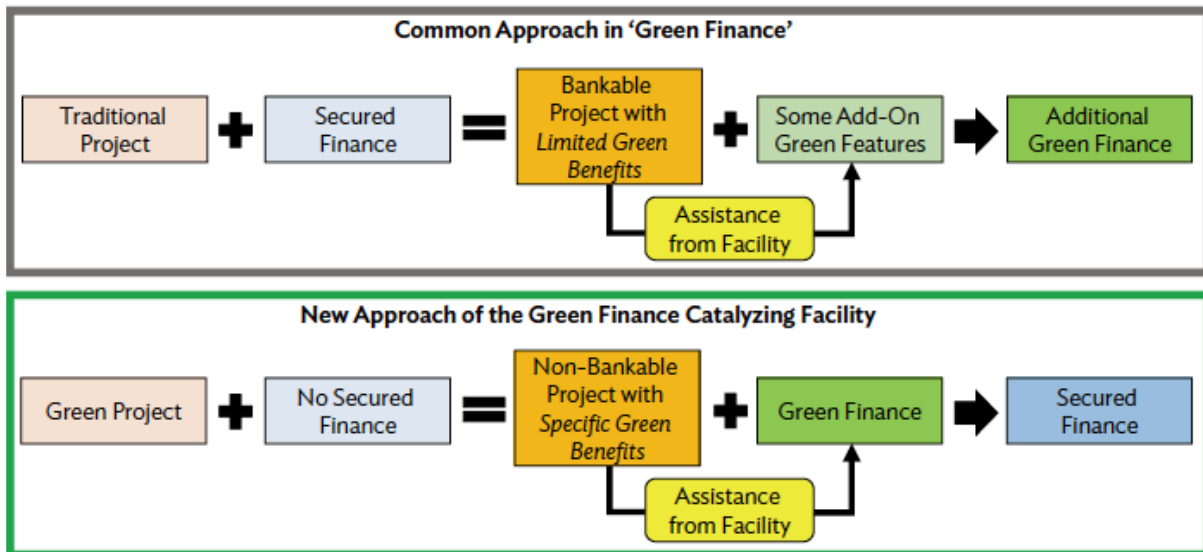


Figure 1 Approach of the Green Finance Catalyzing Facility

Source: ADB (2017, p. 56)

USAID’s Development Credit Authority (DCA) comes up with a set of financial guarantee models that have triggered a credit amount of more than USD 5 billion since 1999 (DCA, 2017b). Similarly, GuarantCo, a company of the Private Infrastructure Development Group (PIDG), has enabled about USD 4.6 billion so far (GuarantCo, 2017). Whether a municipality is given a loan or issues bonds, the institutions provide guarantees covering up to 50 percent of the borrowed amounts in case the city defaults on repayment. This means that a guarantee covers half of the losses in the default case. Guarantees help mitigate financial risk particularly at the city level where creditworthiness is usually considered as low.

A further example of a risk mitigation approach is Climate Investor One (2015, p. 1–2), which is a composition of three facilities. A development fund provides funding for project preparation and development. The second facility is a construction finance fund consisting of three tiers of which the first covers potential losses. The second tier is taken up by development finance institutions and potentially commercial investors. Commercial investors whose risk is reduced due to the first and second tiers contribute the third tier. In case a project is successfully implemented, project development costs funded by the development funds become part of the project’s equity to be bought out by the construction finance fund. Third, a re-financing fund has right of first refusal for up to 50 percent of project debt after the project has entered operation. Thanks to long-term risk reduction of infrastructure debt, new commercial investors may be attracted. Figure 2 shows more details of Climate Investor One’s structure.

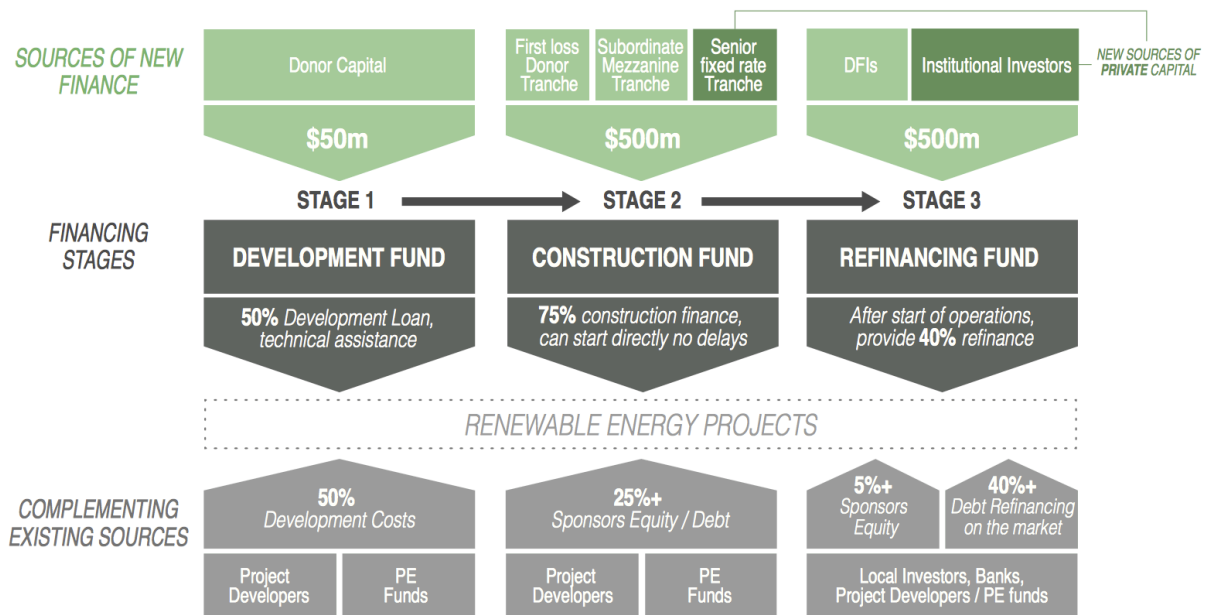


Figure 2 Design of the Climate Investor One Facility

Source: Climate Investor One (2015, p. 2)

In addition to the above technical and institutional approaches, the establishment of a broader domestic framework as well as a high level political buy-in can support investments in climate infrastructure.

In the framework of the possible establishment of a PPF in West African Region, some guidelines were drawn by FMDV and ICLEI with the support of Climate KIC as an attempt to overcome the main bottleneck for successful project preparation (ICLEI, FMDV & Climate-KIC, 2016). Although specific to the West African regional context, these recommendations can be taken in a broader context. They include:

- Up-stream due-diligence to avoid that the “usual suspects” receive the PPF support.
- Sufficient institutional capacity and buy-in: In the case of the Development Bank of Southern Africa (DBSA) project preparation unit, one of the requirements is sufficient institutional capacity of the project sponsor, which forms part of the application assessment. Furthermore, there should be evidence of buy-in at highest level, and it is a requirement that a dedicated project office within the sponsoring entity be created to oversee project implementation.
- Cost recovery: Requiring some level of cost-recovery is a way of making the PPF more sustainable by making it rotating and self-replenishing.

Based on Global Clearinghouse for Development Finance (GlobalDF, 2017) and the CCFLA Mapping (2017b) extensive evidence-based analysis of infrastructure project financing deals, key propositions illustrate some of the levers to pull for climate action at domestic level, integrating the subnational component, and in a constrained agenda. The most important propositions are:

- Develop localized marketplaces: that will enable to successfully identify, develop, and finance projects.
- Establish knowledge & finance hubs of skilled professionals (international, regional, national, local) to provide expert support for the development of national and subnational sustainable development plans, and the development and finance of priority projects.
- Pilots of demonstration projects mobilizing local finance with innovative finance techniques:
- Performance tracking and reporting at country level as a technical online tool to capture successes, lessons learned, secure support and build market confidence, momentum and learning.

The challenges and recommendations presented here can be classified as internal to the PPF, when they focus on project preparation approaches and tools, and external to the PPF, when policy level issues and the general environment are concerned. In the remainder, the case studies and the subsequent discussions are elaborated considering on both internal and external factors.

4 Case Studies – Identifying Successful Project Preparation Approaches

In the following, the results of the PPF profiling are presented. For this, they were sent a questionnaire containing questions on the facilities’ background information, their scope of activities, support services, and regional focus. In the main part, they are requested to provide information on their approaches and tools, their relationships to municipalities, private sector involvement as well as main challenges and bottlenecks. In the next section, questions about financial issues are asked. These questions concern the funding structure of the PPFs, as well as the ways the infrastructure projects themselves are financed and the risk mitigation instruments that are used.

In the final part of the questionnaire, PPFs are asked about their specific ways to successful project preparation. For this, five success factors are defined, which are based on a report of The Infrastructure Consortium for Africa (ICA, 2012, pp. 64–72) but partially modified for our purpose to include the context of cities and ESG aspects. The five success factors are:

Success factor 1: relevancy and effectiveness

Do the managed projects match the infrastructure challenges in the respective environment?

Success factor 2: efficiency

How does the PPF ensure that financial and human resources are employed in the most effective way?

Success factor 3: co-benefits

How can co-benefits for local communities and the project preparation process be created?

Success factor 4: financial viability of projects

How is financial viability and bankability of projects achieved?

Success factor 5: sustainability

How are environmental and social aspects taken into account?

4.1 CDIA – Cities Development Initiative Asia

4.1.1 General Information

The Cities Development Initiative for Asia (CDIA) is an international partnership established by the Asian Development Bank (ADB) and the Government of Germany, with additional core funding support from the governments of Austria, Sweden, Switzerland and the Shanghai Municipal Government. ADB, GIZ and KfW partner for its implementation. CDIA pursues the overall objective of developing strategies and approaches to enhance sustainable development and reduce poverty. The initiative provides assistance to medium-sized Asian cities to bridge the gap between their development plans and the implementation of their infrastructure projects.

The operational objectives of CDIA are to improve urban infrastructure services and management through:

- Providing technical assistance in structuring priority infrastructure projects to a stage where they can be financed;
- Helping cities structure their projects to attract market-based international private investment;
- Strengthening local institutional prerequisites for development of capital investment infrastructure projects and urban services; and
- Promoting regional dialogue and cooperation on urban management in Asia to enhance cross-learning from good local practices.

CDIA was created in October 2007 and currently has a team of 18 staff members from ADB and GIZ. The active infrastructure sectors are water, energy, solid waste management, transport, and social infrastructure. With the general regional focus being on Asia and the Pacific, current projects are ongoing in Georgia, Tajikistan, Pakistan, China, Cambodia, Indonesia, Vanuatu, and Mongolia. CDIA's targeted beneficiaries are the city administrations of medium-sized cities with a population of 250,000 to 5 million. So far, the facility has been working with 138 cities. Partnerships are established with local or regional governments as well as national partner organizations such as national ministries and agencies with a similar mandate to CDIA. The activities themselves can be summarized by technical assistance through project prioritization, capacity development, and project preparation. Financial assistance for project implementation is not provided as CDIA engages only in project preparation and aims at linking projects to financial institutions. Project preparation support consists of comprehensive pre-feasibility and / or feasibility planning. However most projects are being linked to follow-up finance straight after the pre-feasibility study. In some cases, CDIA provides additional support to ensure successful project financing. On average, it takes about five months to provide a

project with the support needed and ranges from about USD 50,000 to 600,000. In most cases cities also contribute own resources but mostly as in-kind contributions.

While the ADB side of CDIA focuses on project preparation and direct liaison with project developers, GIZ complements these activities through capacity development. 77 CDIA-supported projects have been linked to financing to date, with an unexpected infrastructure investment volume of USD 6.8 billion.

4.1.2 Methodology

For the purpose of project prioritization, CDIA developed its own comprehensive approach called the City Infrastructure Investment Programming and Prioritization (CIIPP) Toolkit (CDIA, 2015). It consists of investment budget analysis, project prioritization, and investment programming and has been used in 52 cases so far.

In order to avail of project preparation support, a local government has to send a letter of preliminary enquiry for CDIA support. While it is rare that cities directly apply for support, they usually approach CDIA through partner organizations. Joint discussions on project priorities, development plans and city visions follow. Three selection criteria must be fulfilled:

- The city must be a medium-sized city (population of 250,000 to 5 million);
- The city must have an urban development plan in place;
- There has to be an endorsement letter from the central / state level indicating in-principle support for the development of an urban infrastructure projects portfolio and its financing and the assistance request application to CDIA.

After preliminary enquiry, CDIA conducts a fact-finding mission to assess if the city is able to comply with the selection criteria. Furthermore, specific infrastructure investments and potential impacts of the projects, required commitments and the roles of key stakeholders in the process are identified. Given that the initial assessment is positive, the city prepares a formal support request application. The pre-screening process assures the cities reach the level required for the project preparation process.

Project preparation support mostly consists of pre-feasibility studies. At this level, a steering committee is created which is usually chaired by the city mayor and composed of the heads of representative city departments as well as CDIA staff. The steering committee has the responsibility to oversee the project and participates with executive decision-making authority on how to steer the project to accomplish agreed and established goals. This decision-making competence is a remarkable feature where CDIA differs from other PPFs. The city's input is furthermore sought and documented during the entire project preparation phase through the steering committee. After completion of a pre-feasibility study, CDIA maintains support and communication with the city through liaison with national ministries and agencies as well as funding institutions. This helps link the project to financing.

Private sector participation also forms part of the project preparation phase since important project milestones are presented to key stakeholders. Moreover, CDIA collaborates with the PPP Center in the Philippines and PTSMi in Indonesia in order to foster private sector participation in those countries.

4.1.3 Bottlenecks and Recommendations

Confronted with the question of what the main bottlenecks in project preparation and the most important challenges are, CDIA mentions several aspects. As part of the project preparation process, the following shortcomings are ranked as most frequent and important:

- Neglecting consideration of institutional arrangements;
- Neglecting required operation and maintenance capacities;
- Lack of coordination between different levels of government;
- Non-identification of similar infrastructure project initiatives at higher levels, which leads to duplication of work and fragmented planning;
- Insufficient engagement of stakeholders;
- Poor phasing of investments.

In addition, there are constraints in the political, economic and social environment surrounding the project preparation process. As such, three main bottlenecks arise:

- Legal obstacles;
- Insufficient project organization;
- Funding constraints.

Furthermore, in contrast to project preparation at national level, subnational project preparation often features different priorities. CDIA quotes the example of flood and drainage projects to improve natural disaster resilience: while a national project tends to address the basin or catchment areas, a city or municipality will focus on local drainage problems.

In response to the existing challenges and bottlenecks, CDIA formulates five recommendations to be taken into account in the project preparation process:

- Ensure financial and technical viability of a project;
- Address ESG aspects;
- Address the needs of local government, vulnerable groups and project stakeholders;
- Projects need to be in line with national/regional programs;

In recent years, the consideration of urban resilience in general has become part of all new project preparation services by CDIA. It is a question addressed in each project preparation study. This facilitates the identification, segregation and isolation of resilience components of projects. As another important aspect, project preparation support is generally adapted according to the character and

state of a project in order to achieve a flexible process and to develop a project suitable to the requirements of the downstream project financier.

4.1.4 Success Factors

An evaluation report for the three years from 2013 until 2015 overall confirmed CDIA as a remarkable success story (GIZ, 2016, p. 3): two of three objectives indicators (concerning the creation of a partner network and the number of cities where CDIA is present) were fulfilled or, respectively, even outperformed. The area where the objectives were not met concerned the use of innovative tools and processes by cities. With regard to the success factors that this report defines as kind of qualitative success assessment, CDIA accounts for them in different ways.

Success factor 1: relevancy and effectiveness

All project preparation teams are composed of both international and local specialists. The local specialists provide a good understanding of the local challenges and context. Together with stakeholder inclusion throughout the whole process, this ensures prioritization of relevant projects. Secondly, all specialists hired for the conduct of PPS are required to spend the majority of their inputs on-site, to encourage better understanding of the local context and facilitate constant and direct exchange with stakeholders. In this way, inquiries can be addressed and meetings with stakeholders can take place. Important to note, thanks to a wide regional outreach, it is possible to cluster cities with same sector priorities and challenges. Synergies can therefore be exploited and project preparation activities can be scaled up.

Success factor 2: efficiency

Sound and systematic processes, like the CIIPP Toolkit, to select and approve city applications improves targeting of the right projects and prioritizing investments in order to employ funds and human resources efficiently. These processes endeavour to link with downstream financing prior to city application approval. Thereafter, there is full-time monitoring of the preparation process and the close liaison with financing institutions is ongoing.

Success factor 3: co-benefits

Since CDIA is co-managed by the ADB and since CDIA and ADB share office space, direct communication and contact particularly with regional departments is facilitated. Essentially, it reduces the challenge of linking projects to financing. Another benefit arises in favour of the local government by providing capacity development and institutional development if identified as necessary by a needs assessment.

Success factor 4: financial viability of the project

Financial analysis is a central part of the CIIPP Toolkit, but CDIA also directly engages financing institutions by linking them with the city administrations. This enables a comprehensive assessment of a

project's financial viability from a third party. Since bankability is the crucial level that has to be achieved by projects, potential investors are involved from the beginning of project preparation.

Success factor 5: sustainability

Environmental and social due diligence are part of each project preparation study. Moreover, and as mentioned above, a resilience assessment identifies potential shocks and stresses. Stakeholders are included in all project milestone presentations. They have the opportunity to give feedback, which is documented. In the event of possible disagreement, meetings and discussions are arranged, when applicable to resolve it.

4.1.5 Project Preparation Closure and Project Finance

Projects are considered as successfully completed once they are linked to a financing institution. The following numbers give an impression of success in CDIA's activities: 76 projects have been linked to finance. In 29 projects, construction has started, in five of them construction is fully completed. There is a considerable financial lever of 1:107 meaning that on average, for 1 USD spent by CDIA for project preparation, USD 107 are triggered as infrastructure investment.

The aim of almost all PPFs is the lock-in of private sector finance. However, the track record of CDIA projects shows that this does not happen that often. As the PPF is hosted by the ADB, it is obvious that most projects finally are financed by the ADB. Other important financing institutions are the World Bank and the Local Finance Initiative (LFI). PPPs are quite rare and amount to less than ten of the more than 70 managed projects. According to CDIA, more capacity building would be necessary, especially for cities, in order to develop balanced and fair public-private relationships. As to what concerns private sector projects, it is found that many applications from the private sector have not met the quality standard required. Leveraged finance is generally not used by CDIA as private sector participation is rare.

4.2 USICEF – US India Clean Energy Finance Facility

4.2.1 General Information

The US India Clean Energy Finance Facility is an institution created and led by the Climate Policy Initiative and the Indian Renewable Energy Development Agency. At first glance, USICEF does not look like a preparation facility, according to the above definitions and distinction between PPF and PFF. However, on taking a closer look at its activities and support services, it is obvious that it can be considered as a PPF. Moreover, this is in line with the definitions used here since many activities conducted by PPFs are done by PFFs as well. USICEF is funded by the MacArthur Foundation, the William and Flora Hewlett Foundation and the Good Energies Foundation and the Ministry of New and Renewable Energy (Government of India). A further partner is the US Government's development finance institution (OPIC). The facility's main objective can be described as developing a pipeline of distributed renewable energy projects in India and preparing projects with technical assistance in

engineering, commercial, financial and legal aspects for finally accessing debt finance from OPIC and in the future also from other public and private financing institutions. By providing adequate project information to lenders, their transaction costs to provide smaller ticket size loans can be reduced. This serves the overall objective of expanding access to distributed clean energy solutions in order to benefit disadvantaged communities in India on the one hand and to contribute to India's ambitious renewable energy and energy access goal on the other hand.

USICEF was created in April 2017 and has five staff members. Since it is quite new in the market, the experience from their track record is not comprehensive as yet, but it can still give several important insights. The facility is focused on one single sector, or even a sub-sector, that is, renewable energy. Within this field, mini- and micro-grid power generation projects, market based solutions like sales and distribution or energy access provision as well as renewable energy infrastructure catalysers such as projects to improve infrastructure are supported. USICEF has been engaged in five projects so far. Its beneficiaries are generally the disadvantaged communities in general. In the specific preparation process, however, targeted clients are private companies as well as both domestic and foreign investors. USICEF provides mainly technical assistance, financial and legal advice, and comprehensive feasibility planning ranging from feasibility studies, demand planning, engineering, technical plans as well as support in institutional and procurement issues. The preparation process is funded by grants from USICEF, which amount to USD 250,000 in average. The facility has the capacity to manage ten to fifteen projects at a time.

4.2.2 Methodology

USICEF does project preparation in a specific way: it includes the private sector from the beginning. In fact, the facility is essentially a network of service providers. It invites private companies to join the network by public announcement. They can apply and have to be selected by the Climate Policy Initiative. Once they are accepted, they can be engaged by project developers to provide their services in their respective field of expertise. With services ranging from feasibility studies, product development, social and impact assessments to legal and financial advisory services, the whole project preparation process is covered. Given that services are successfully delivered, the service providers are paid by the project developers, which are provided with grants by USICEF. Currently, the network consists of 30 service providers specialized in technical assistance, feasibility planning, engineering and legal issues. So USICEF itself, taken in its narrow sense without the service providers, is essentially a coordinating body and is concerned with linking projects to financing institutions.

Project developers can apply for preparation support. Application and selection takes two to three months. To be awarded with a grant, project developers have to meet the following criteria (USICEF, 2017):

- Focus on solar power generation and distribution for external commercial consumption;

- Use of technologies commercially proven and tested by the Ministry of New and Renewable Energy;
- No blacklisting by any Indian government or public sector agency.

4.2.3 Bottlenecks and Recommendations

When asked about project developers' most frequent weaknesses and the major challenges, USICEF notes the following aspects:

- Lack of professionally prepared business plans and investment proposals;
- Inadequate risk assessment and credit information for due diligence on off takers and energy customers;
- Lack of legal review of contracts and payment security mechanisms.

As main bottlenecks within the project preparation phase, the following two points are raised:

- Inadequate presence of financial investors in equity for roof top and off grid projects to scale up to reach commercial debt financing;
- Off-grid sectors have lack of policy clarity and usually insufficient scale for financing by commercial debt.

On the one hand, these points are closely tied to the renewable energy sector. On the other hand, they represent challenges that are also found in many other sectors as when the focus is on small-sized projects or when the insufficiency of business cases or high transaction costs prevent locking-in of investors.

USICEF comes up with a single main recommendation: policy makers have to be convinced that good technical assistance in project preparation is not a waste of resources but rather leads to higher chances of financial closure for socially desirable projects. Wrong perception in this regard often prevents governments from paying for project preparation.

4.2.4 Success Factors

Success factor 1: relevancy and effectiveness

According to USICEF's estimation, it may be the only PPF for distributed energy in India. This is by itself a statement that the need for project preparation in renewable energy in India is not sufficiently accommodated, which is a strong indicator of the facility's relevance and effectiveness. This is strengthened by on-the-ground presence as the program management team is based in India. However, USICEF also raises the concern that there are higher systemic level challenges like grid stability and net metering that remain and cannot be addressed by a PPF of the size and structure as the one described here.

Success factor 2: efficiency

USICEF has a program team with three to four dedicated staff members. They focus on the support of project developers and ensure that continuous handholding through the whole process is guaranteed. It is by structuring the PPF in the above-described manner as a network of specialized service providers that efficient employment of financial and human resources is enabled.

Success factor 3: co-benefits

The facility is independently managed but has a strong link to OPIC as a finance institution as well as a partnership with the government of India through the Ministry of New and Renewable Energy. This is likely to produce synergies and efficiency gains in terms of know how and networking, which can be used to support effective project preparation. On the other hand, in contrast to the other PPFs profiled, USICEF does not provide capacity building.

Success factor 4: financial viability of the project

Financial due diligence is part of every preparation process before a project is to get access to OPIC or any other finance institutions. There are service providers, which are specifically dedicated to financial viability assessment. Financial risk mitigation instruments like guarantees or blended finance are not used currently. However, the envisaged catalytic finance facility may introduce guarantees in the future.

Success factor 5: sustainability

Projects are assessed for environmental and social impacts, even though they are expected to be marginal in distributed clean energy projects themselves being contributions to improved environmental performance in energy production. USICEF notes that mini grid projects are usually realized with wide community acceptance. Stakeholder inclusion is expected to become an integrated part of the PPF's activities once the program is disseminated at larger scale.

4.2.5 Project Preparation Closure and Project Finance

At the moment, projects are financed by OPIC. In the future, private commercial finance is envisaged to be a major source of finance. Currently, USICEF is working on a not yet established catalytic finance facility aiming to reduce credit risk. By providing guarantees, risk mitigation will help crowd in commercial finance from other both domestic and international sources.

Due to the small size of most distributed renewable energy projects, classical project finance is inappropriate as the high transaction costs are too high. For this reason, the projects access finance through corporate finance lending. This enables aggregation and the creation of scaling up of lending from financial institutions, which then can be standardized more easily.

4.3 ESCI – Emerging and Sustainable Cities Initiative

4.3.1 General Information

The Emerging and Sustainable Cities Program (ESC), often referred to as an Initiative (ESCI), is hosted

and funded by the IDB. In addition, it has a wide network of partnerships containing country donors (China, Italy, South Korea, Spain, Nordic Development Fund, Denmark, Finland, Iceland, Norway, Sweden, Chile, Japan International Cooperation Agency (JICA), Argentina), national and regional development banks in North and South America, and a large number of various academic institutions from different continents. The initiative aims at tackling the main roadblocks that prevent the sustainable growth of emerging cities in Latin America and the Caribbean. The multidisciplinary approach identifies, organizes and prioritizes urban interventions and is based on three pillars: environmental and climate change sustainability, urban sustainability, and fiscal sustainability and governance. The PPF relies on the principle that it is more sustainable and efficient to prevent unplanned growth in advance instead of trying to mitigate the consequences thereafter. Cities are accompanied in project development from action plans to linkage to finance.

ESCI was created in 2011 and currently employs 20 staff members. The focus is on medium-sized cities with between 200,000 and one million people in Latin America and the Caribbean. The facility is active in 26 countries. ESCI is active in most infrastructure sectors including water, energy, solid waste management, transport networks, social infrastructure and housing. Current beneficiaries and clients of the program are city administrations, community based associations, local and regional governments, public companies, and public development banks. ESCI's areas of support are technical assistance, capacity building and project prioritization. It works on city development plans, comprehensive pre-feasibility and feasibility planning. It has been engaged in more than 50 projects so far. The expected infrastructure investment volume triggered by ESCI preparation support is USD 1.4 billion (IDB, 2016).

4.3.2 Methodology

ESCI's project preparation methodology is divided in two stages and basically five phases (see IDB, 2014, 2017). The first stage concerns the core of the methodology and involves the development of the action plan, which lasts one year. It contains the following phases:

- Phase 0 (preparation): initiation of data collection, building of work teams, stakeholder identification, hiring of technical experts
- Phase 1 (analysis diagnostic): city overview, completion of indicators, baseline studies
- Phase 2 (prioritization): applying filters: public opinion, economic cost, climate change specialists' expertise, critical areas for the city's sustainability
- Phase 3 (action plan): formulating action plans for identified strategies, delivery of initial study, creation and validation of detailed action plan

So, in the first stage, a city overview is developed according to a set of about 120 indicators covering the dimensions climate change and environment, urban development, fiscal and governability. Then, projects are prioritized through employment of the multiple filters and embedded into a set of strat-

egies and an action plan. The second stage is about action plan execution, lasts for about three years, and consists of phases 4 and 5:

- Phase 4 (pre-investment): preparation of pre-investment studies in prioritized sectors on feasibility as well as economic, engineering, and social aspects
- Phase 5 (monitoring): design and implementation of a monitoring system

At the initial stage of the whole program, the IDB paid for the implementation of the methodology in one city in each country. Now, cities have to pay themselves for the implementation services. There are several variations in the business models. Usually, it is either the ministries of national governments or national development banks financially supporting the cities so that they can fund the project preparation support. National entities are, however, not involved in project preparation, which is a partnership only between ESCI and the cities. This funding modality differs substantially from CDIA and USICEF where project preparation is usually funded by the facilities. Even though not contributing finance to the process, ESCI in some cases supports cities in getting access to international climate finance sources like, for instance, the Global Environment Facility.

The private sector is involved by being part of regular meetings during the project preparation process. Additionally, there are collaborations with the private sector on feasibility studies and information gathering. Likewise, engineering firms can be hired for specific works. Universities and other academic institutions may also be involved for specific collaborations.

4.3.3 Bottlenecks and Recommendations

According to ESCI, the most important challenges and aspects observed in the market that are not sufficiently taken into account in project preparation are the following ones:

- Selection of projects of low priority from a city action plan perspective;
- Lack of involvement of local governments;
- No stakeholder inclusion in the preparation process;
- Lack of capacities and resources at the local level.

On the one hand, ESCI observes these factors to be caused by insufficient project development. On the other hand, insufficiently developed projects are just the outcome of these shortcomings. As main bottlenecks in the whole project preparation process, two main points are raised:

- Linking projects to finance: IDB can provide access to international funds such as GEF or GCF but not all projects achieve this;
- Coordination with the public sector on different levels: due to regular elections, governments keep changing, thereby creating a modified political environment, which itself gives rise to changing staff and finally gaps in capacity at the local level.

ESCI also remarks on the lack of ability to analyze and synthesize relevant information in project preparation. In particular, it identifies a lack of understanding of climate change risks at the city level.

Infrastructure projects involve high risks and require a lot of preparation and investment. These factors are all related to climate change in some way. But since the awareness of many cities in this regard is insufficient, they do not necessarily prioritize climate related questions when developing projects or city-level plans.

Given these challenges, drawbacks and room for improvement, ESCI identifies three main recommendations:

Three recommendations:

- Involve civil society from the beginning;
- Respect environmental and social safeguards;
- Have a solid team in the implementation unit of the local administration with sufficient economic and legal capacity in the local government.

4.3.4 Success Factors

Success factor 1: relevancy and effectiveness

By sophisticated project prioritization and selection (e.g. as part of city development plans) as described above in the methodology as well as early stakeholder identification and involvement, it can be ensured that the relevant projects are implemented. Projects that do not respond to a region's or city's infrastructure needs are ruled out at an early stage. ESCI is present on the ground in all cities where projects are realized.

Success factor 2: efficiency

Likewise, it is through a comprehensive approach to project prioritization and selection that the efficient employment of financial and human resources can be achieved, and resources will not be wasted on inappropriate projects.

Success factor 3: co-benefits

ESCI mentions its status as being a program of the IDB that gives rise to major benefits because it facilitates access to funding and particularly financing sources. Resources dedicated to the accumulation of a network of finance institutions can thus be optimized. Moreover, synergies are produced by partnerships with cities, academia and the private sector e.g. engineering companies.

Success factor 4: financial viability of the project

Testing projects for financial viability is an integral part of ESCI's project preparation methodology without which bankability cannot be achieved.

Success factor 5: sustainability

Social and environmental safeguards as well as stakeholder inclusion are an integral part of the methodology.

4.3.5 Project Preparation Closure and Project Finance

Project preparation is completed once a project is linked to an investor. It is usually a development institution, that is, the IDB. In some cases, other donor sources provide finance. For 14 projects, the preparation process has been completed while another four are currently in the pipeline. The financial lever can be calculated in analogy to CDIA and is 1:120 meaning that a 1 USD expenditure for project preparation gives rise to an infrastructure investment of USD 120 (IDB, 2016).

Contribution of private sector finance is again quite limited and PPPs due to limited institutional capacities at the city level. A possible reason for the lack of private investors in the case of ESCI might be that there is not the same open application procedure as in the case of CDIA and USICEF. Rather, the whole methodology is constructed to more exclusively target municipalities. In its center, there is the development of city action plans that are developed in collaboration with local administrations. This may limit the space for the private sector as a project developer *a priori*. The other PPFs have an application procedure that is more open to private project developers from the beginning.

5 Discussion

5.1 Summary of the Profiling Results

The three profiled PPFs have many common features but also certain differences worth discussing. All facilities have developed comprehensive approaches for their activities. The term “comprehensive” does not mean that a PPF necessarily performs all activities in project development on its own. It rather describes the observation that all of the profiled facilities manage projects from the initial application stage up to its link to finance. CDIA uses its CIIPP Toolkit, ESCI has its own methodology, too, while USICEF offers standardized technical assistance by means of its network of private specialized service providers. The approaches in general contain elements such as initial (city-level) assessments, embedding the activities into city development plans, project prioritization and selection, preparation studies, technical assistance, capacity building, sustainability assessments, inclusion of stakeholders, vulnerable groups and the private sector, and project monitoring. USICEF is a partial exception in this regard. On one hand, this is due to the fact that, unlike CDIA and ESCI, it is not tied to a development bank. On the other, ESG assessments and stakeholder inclusion exist but have lower priority compared to other facilities since solar power plants usually enjoy high acceptance in local communities, have a low impact on the environment and particularly contribute to climate change mitigation on their own. As another partial difference worth mentioning, ESCI has a stronger focus on starting with the development of action plans at the city level than the other PPFs.

In general, project preparation processes are funded by grants. They are either provided by the PPFs, as in the case of CDIA and USICEF, or mobilized by the municipalities, as with ESCI (except at the beginning of the program, when the first cities in each country of the region were granted the support). Yet, in the latter case cities do not pay themselves. Even though they have to compensate the PPF for

its services, they get them funded by organizations at the national level, mostly ministries or national development banks.

Projects are mainly financed by development banks, public donors, national governments or other national development agencies (as for example OPIC). The use of risk mitigation instruments like guarantees and blended finance is quite limited. The same is true for PPPs.

As for main bottlenecks and challenges, the profiled facilities mention funding constraints, linking projects to finance, inadequate risk assessments, and the lack of investors in equity. Further bottlenecks are on the side of the municipalities as project developers: changing staff, changing political environment, a lack of commitment, insufficient organization, and a lack of capacity at the local and regional level. Finally, additional challenges are at a systemic level: political impediments and legal obstacles. In response to this, PPFs identify the inclusion of civil society, vulnerable groups and project stakeholders, consideration of ESG aspects, the provision of local capacities and an enabling environment as the most important recommendations.

5.2 Can PPFs Cope with Existing Project Preparation Challenges?

Relevance and effectiveness of projects are key aspects of the three PPFs approaches described above. For example, in the case of USICEF, relevance is indicated in the initial statement that there is a need for support to achieve India's ambitious energy goals, which was the motivation to create the PPF. The second factor, efficiency, is emphasized constantly and mainly through project prioritization and selection. However, facilities cannot avoid a certain proportion of projects failing, which necessarily gives rise to inefficiencies. Co-benefits, which have been labeled as the third factor, can be created through capacity building. It is not only essential for project implementation but provides local and regional governments with the knowhow and expertise to realize further projects in the future. Another source of co-benefits is the synergies that arise from collaboration of the PPFs with its lead organizations, cities, private partnerships, finance institutions, and academia. For instance, as can obviously be observed, the fact that CDIA and ESCI are each hosted by a development bank gives them a better access to project finance and also a better understanding of a finance institution's perspective. The fourth and the fifth success factors, that is, financial viability of projects and sustainability, respectively, are central issues in the PPFs' methodologies and used tools.

If these outcomes are compared to the main challenges and recommendations in the literature that have been discussed above, it can be noted that they are addressed in many but not all aspects. The recommendations to build new partnerships of actors involved in project development, to scale up project preparation, and to increase funding for project preparation (see Danso & Samuels, 2017; G20 Development Working Group, 2014) are largely taken into account by the profiled PPFs. It is evident that the increase in the number of PPFs in recent years is a response to these recommendations.

Other identified challenges, however, still remain to be solved. As shown in the literature review, project risk is perceived as quite high in developing and emerging countries (Danso & Samuels,

2017). It needs to be reduced if the required internal rate of return is to be decreased. Therefore, the use of risk mitigation instruments is a general recommendation resulting from various studies and analytical reports. Likewise, cities are generally found to have limited access to financing. This is why instruments like municipal bonds or local development funds are suggested by literature (see e.g. CCFLA, 2017b). Yet, as the three case studies in this report show, the use of finance instruments for risk mitigation and other financial products other than loans is quite limited.

Another remaining issue to be debated is the lack of an enabling environment. It is a system-level challenge and thus difficult to be addressed by individual PPFs. However, they contribute by offering capacity building for local governments. This collaboration with the cities creates an important knowledge transfer. In essence, it is the presence of PPFs at the local and regional level itself that contributes to a better environment because cities have better access to project preparation support.

Finally, it is recommended in the literature review that countries fund project preparation themselves instead of receiving grants (see G20, 2014). This is only partially accomplished. ESCI requires cities to pay for the PPF support, which they usually claim back from sources at the national level. However, this is not the case for CDIA and USICEF.

As mentioned several times, the main objective of PPFs is to link projects to finance. Given the resulting description of the PPFs, it remains to ask if they are able to remove all obstacles that prevent projects from achieving bankability. The problem of insufficient project development is tackled by the facilities as they have developed comprehensive project preparation methodologies. Since funding of the preparation process is ensured, risk in the early-stage development phase can be clearly reduced. Both inclusion of stakeholder and project prioritization contribute to this effect. A second reason for not achieving bankability, the insufficient link to project finance, is accounted for since the facilities are able to establish the link to financing institutions even though they are mostly development institutions.

5.3 Remaining Challenges Up for Discussion

However, several key issues require continuing discussion. They concern the remaining challenges coming out of the questionnaires that can be summarized as follows:

- Lock-in of private investors in low-return infrastructure sectors is limited, most projects are financed by development institutions;
- Trigger of additional private finance through guarantees and blended finance is limited;
- Many challenges at the city level are systemic and cannot be tackled by an individual project.

These points can be examined through a set of follow-up questions. On the one hand, they deal with the issue of how the challenges can be addressed. On the other hand, they also aim to reveal new ideas and insights that may further improve PPF activities in the future.

- What does insufficient involvement private sector finance imply that infrastructure returns are insufficient?
- What does the fact that a large share of projects is financed by MDBs or other donors tell us?
- What approaches should PPFs use to better lock in private sector finance?
- What does prevent a more frequent use of risk mitigation measures?
- How can cities gain additional finance from the private sector, if creditworthiness cannot be improved and loans cannot be paid back?
- Can social infrastructure ever provide sufficient returns for private finance to step in?
- What can be done to achieve a more enabling political environment for infrastructure project implementation? Or how do PPFs need to be designed to address these?
- How to deal with insufficient institutional capacities in developing and emerging countries?
- How has project preparation changed within the last five years? Are there significant trends?
- How can success in PPFs be best identified and how can it be shared?

To debate these questions, various experts who are or were involved in PPFs, in development banks or as independent advisors have been consulted. This chapter summarizes their statements and highlights the key points. Even though the profiled PPFs have developed sophisticated tools and expertise, there is a set of recommendations that can be made to further optimize successful project preparation.

5.3.1 Participation in Project Finance

PPFs are successful in linking many projects to finance but the variety of financing institutions is quite small. This leads back to the baseline of the whole topic that was introduced at the beginning: between the global infrastructure investment needs and actual current infrastructure investment, there is a gap of more than USD 1 trillion per year, the exact number depending on respective estimates. There is general agreement among most experts that public and development finance will not be sufficient to provide the infrastructure required for the achievement of the SDGs. So while it is clear what is required from investment supply, the results of the profiled PPFs also tell us something about the demand side of investment, that is, the infrastructure projects. They all need finance but depending on the sector, not all projects are appropriate for the same type of finance. As an expert of a development bank says,

„While private sector involvement works well in several infrastructure sectors, it needs efficient regulation from the public sector. Additionally, the private sector is by definition more interested in income generating infrastructure projects (like toll roads or private hospitals⁴ for the well-earning). Hence, the public sector needs to define how best infrastructure can be

⁴ While hospitals belong to the sector of social infrastructure as defined at the beginning of the report, return-generating private hospitals generally do not since they do not provide health as a basic good but rather a commercial service.

provided to the poorer populations. In some cases, this might be the private sector incentivized with subsidies, in other cases this might be the public sector itself. Both ways are supported by International Development Banks.”

So, low or insufficient returns, which have been identified as a major obstacle for projects to achieve bankability, still remains a challenge. The issue applies often applies to projects, which are essential for climate change mitigation and adaptation or to provide society with basic goods but do not yield sufficient returns for the private sector to step in. The obvious question that follows is how such projects can get financed. There are several approaches to structure finance of projects in a way that they attract investors.

The blueprint of the ADB’s Green Finance Catalyzing Facility (GFCF, ADB, 2017) as well as the catalytic finance facility envisaged by USICEF will, if realized, help reduce default risk. Safer investment reduces the required rate of return and thus reduces pressure to generate high returns. The same is true for USAID’s DCA and PIDG’s GuarantCo, which provide guarantees for private sector finance. However, PPFs have to be aware of additional aspects when working with risk mitigation instruments. First, guarantees usually come at a cost for the project developer. The DCA charges municipalities with an origination fee (one-time payment) and a utilization fee (semi-annual fee based on the value of the loan covered by the guarantee) (DCA, 2017a, 2017b). Second, lower risk, whether enabled by blended finance or guarantees, reduces the cost at which cities can achieve loans or issue bonds to some degree. Yet, it does not increase the income flows generated by the project. Hence, it may still be difficult for a project with low returns to satisfy annual finance costs. For instance, a project with high social or climate relevance but zero returns will not attract private sector finance even if risk is strongly reduced. The space for increasing project revenues to address this issue is often limited. As raised by several experts and identified as a very fundamental issue, increasing returns would require making the services of a project more costly. In the case of a waste water system raising tariffs for households may do this. However, the service might become unaffordable due to low household budgets.

The third point is quite a fundamental one and is expressed by a project developer engaged in Africa:

“Sufficient instruments, which are generally well funded, already exist in the market to address some of the major risks associated with infrastructure investments in Africa. However, these instruments, such as guarantees, are not available to mitigate the general absence of creditworthiness of sovereign off-takers, which remains the principal challenge limiting the growth of private sector participation in infrastructure.”

This statement comes down to the argument that the use of guarantees is conditional upon a minimum creditworthiness. If creditworthiness of a city is extremely low, the guarantor expects the default risk of the city and therefore the probability of claiming the guarantee to be high. Obviously, guarantees do not just reduce the overall risk of a project, they also transfer the risk from the guar-

antee to the guarantor. For the latter to be willing to take this risk, it must not exceed a level considered as affordable. Even though this statement is set against the background of activities in Africa, it is generally confirmed by all consulted experts that creditworthiness of cities in developing and emerging countries is generally very low. As was stated by ESCI for Latin America and the Caribbean, public institutions at the national level are often reluctant to step in to provide guarantees for their cities – just for this reason.

The fact that risk mitigation instruments encounter several challenges does not invalidate their use. However, they may need to be combined with effective project structuring and possibly with subsidies. For example, projects may be divided in components. Private sector investment then may flow to the components with sufficient income generation while the public sector or development institutions engage with the remaining components. In this case, on the one hand, a Local Government may lose some control over project revenues but on the other hand, its required contribution is lower. Alternatively, the public sector or other public donors might subsidize a project in order to provide private sector finance with a return. Again, this involves a transfer from the public sector to private investors. But this comes in exchange for finance provision.

In addition to the mechanisms of risk mitigation instruments that may be used to crowd in private sector finance, further economic and institutional challenges should be taken into account as well when structuring project finance. The use of financing instruments like green bonds, municipality bonds or development funds to access new sources of finance, is a path to be developed further. However in the case of green bonds:

“Green bonds are not really much cheaper than ordinary bonds. In addition, they involve higher transaction costs than “boring loans”, while the latter may contribute just as much to green finance in that they can finance green infrastructure. Traditional loans and pooled loan instruments may be more appropriate for smaller local governments with less capacity.”

This expert statement points to the funding, financing and institutional constraints of project developers. Higher transaction costs of bonds and funds, being caused by the need for a trustee, may potentially weigh heavily in terms of financial performance as well as required preparation efforts. Pooled green bonds may be explored further as another option for secondary cities and smaller Local Governments. Similarly, municipalities often have insufficient capacities to deal with PPPs.

“PPP need very good advisors, the cost of which is relatively high. Whether PPPs are appropriate depends on the size of the project, the depth of the capital market, the capacity of the local government and the capacity of their assistance. If facilities are to prepare projects as PPPs, they need a considerable budget.”

This experience of an advisor coincides well with the experience of the profiled PPFs. It does not necessarily mean that PPPs should not be done, but they are not the most efficient project structure

in all cases. Securitized project finance and PPPs are thus conditional on the institutional capacity of a city in this regard. New financing instruments may crowd in more finance and local ownership. Yet, their application should be tailor made to each project and city characteristics. Moreover, it is often found that due to the lack of capacity municipalities are not able to achieve fair agreements with the private sector partners.

5.3.2 Funding of Project Preparation

A second aspect where private sector finance is an issue is the funding of the project preparation process itself. In the projects where the profiled PPFs are involved, cities receive grants to fund project preparation. Funding is provided either directly by the facilities or by national financial institutions. This coincides perfectly well with the statement of an expert:

„During the development phase of a project, it is absolutely necessary to access grants and patient capital.“

According to this proposition, private sector participation at the early stage of project development is quite unlikely due to high risk and uncertainty in the first phase. Grants and patient capital (which does not exclude private sector money *a priori*) are required to reduce early-stage risk. This is successfully done by the PPFs. Yet, grants are limited and to spread successful project preparation approaches, ways to scale up project preparation funding are needed. One of the solutions in this regard is given by an approach that avoids funding project preparation services by grants: costs of project preparation may be integrated into the project loan amount. In this way, costs become part of the whole project and have to be repaid over the project life cycle. Climate Investor One (2015) provides a model of such a funding and finance structure. Funding sources for project preparation thereby become less constrained, which makes it easier to share and spread successful approaches of PPFs. In the light of the three profiled PPFs, the question arises why the idea of integrating preparation costs into project finance is not applied by them. ESCI has outsourced this question in a way since it is up to cities to fund the preparation support. USICEF may be at too early a stage to do this but may possibly envisage it for the future. For CDIA, the reason for not doing it is an institutional one. Even though it has a close connection to the ADB as its lead organization now, it was originally created as “financing agnostic”, that is, more independent of the bank than it is now. An agreement in this regard thus is missing. Second, there is another obstacle hampering the integration of preparation costs into project loans. In most projects, CDIA’s support is focused on pre-feasibility studies. Further support like feasibility studies or technical assistance is often provided by the ADB for full grants. So making pre-feasibility planning by the PPF part of a loan while providing technical assistance for free would be inconsistent. In general, it can be seen that the way a PPF is set up and tied or not tied to a financing institution affects the structure not only of its activities but also of its funding.

5.3.3 Organizational Optimization of PPFs

Besides the financing questions, there are numerous other factors that affect the quality of project preparation of which the general, enabling or non-enabling, environment is one. Experts mention several aspects that PPFs may consider to optimize the “art of project preparation” that can itself have an effect on the general environment at a systemic level. The first aspect concerns again the observation that project preparation is mostly funded by grants:

„PPFs should seriously think about developing more commercial business models in order to develop the project preparation elements that are more linked to success.“

According to this statement, successful project preparation can only be spread if there are promising commercial models instead of grant funding. This means that not only projects need sufficient returns to attract private sector investment but also project development should be organized according to this principle in order to scale it up. Making preparation costs part of project finance as described above may be one possibility in this regard. An expert also points out that success requires a more sophisticated expertise, which cannot be achieved by a too broad-based PPF. Thus,

„PPFs may want to have a sectoral focus, allowing them to identify replicable models in a way that a broader-focused PPF may not, since the latter simply will not have the same level of sectoral exposure.“

This actually applies to one of the profiled PPFs, that is, USICEF, which is exclusively focused on renewable energy. While it seems to be a natural way of organization for most PPFs to focus on geographic regions, sectoral focus is a much less prioritized principle. Both narrow and broad foci have their advantages and disadvantages. The former allows for more expertise while the latter may make more use of synergies between different sectors at the city level. In addition to the geographic and the sectoral dimensions, PPFs may also specialize on government levels, that is, being active at the subnational, national or even international level. In some sense, every city is a specific ecosystem. Hence, narrowing the focus may even distinguish between cities of different types. This is already done by several facilities: while CDIA and ESCI target medium-sized countries, CFF emphasizes mega cities like, for instance, Mexico City. Each choice on the matrix between different dimensions gives rise to a trade-off any PPF has to be aware of.

Projects intending to mitigate and adapt to climate change may be in contrast to the call for sectoral focus. As one expert notes, green projects – if they are to be indeed green – most often involve more than one sector even if only one sector is targeted in the project design. As a project example, a bus way is to be realized for climate adaptation in a city. It involves relocation, the drainage system and energy provision and distribution if the buses are to be electric. Hence, a PPF needs a intersectoral expertise that cannot be guaranteed by too narrow a focus. Advisors mention other projects where insufficient attention was paid to the multidimensionality of climate related issues. They turned out

not to be sustainable at all and had to be modified in a large effort to enable small improvements. This coincides well with the experience mentioned, for example, by ESCI that there is still little awareness of climate change challenges in city and project development.

Finally, collaboration with cities is essential for any subnational PPF. Local consultants are therefore assigned a key role. As one expert puts it,

“The use of local senior consultants respected by local government as a focal point for the PPF and as design consultants is very effective, but there is a danger that they are very aware that future work may come from such government and care must be taken that they are not captured.”

Hence, hiring consultants who are knowledgeable of the local environment but who are still sufficiently independent is a difficult task. If possible, PPFs should hire such a local expert (not an international) in each city where it is active, who acts as the link between the PPF and the local government. This may not be feasible in smaller cities but would be in large cities for either big projects or projects involving continuous work.

The choice of PPF business models, the selection of a PPF’s geographic, sectoral and institutional level focus as well as the collaboration with cities produces new expertise and builds capacity, which itself impacts legislative and regulative frameworks as well city governance and management. Micro-level improvements thus can have an impact on the general environment and make it more enabling for infrastructure project implementation. Subnational PPFs may use their experience to foster the vertical policy dialogues.

6 Recommendations

The subnational PPFs presented as case studies in this report reveal that adequate functional approaches and tools for project preparation exist. Profiling them by means of selected qualitative success factors has shown that they are mostly dealing with similar challenges and bottlenecks and that they have developed suitable responses. Not all issues are resolved. Namely, questions of project finance, project preparation funding and the general environment have been discussed with selected experts.

This report has focused on success factors for project preparation and has presented tools, identified approaches and evaluated experiences of experts. Through the whole analysis, the report has adopted the perspective of the PPF. For PPFs, systemic-level circumstances have to be taken as given at least to some degree and activities have to adapt to the environment in the best way. For this reason, this report restricts itself to recommendations that effectively come out of the conducted analysis and expert interviews and that can be envisaged and possibly adopted by PPFs. Thus, by formulating the conclusions of the discussion as a set of recommendations, this report may hopefully give some inspiration to PPFs for optimizing their work:

1. PPFs should make the application of risk mitigation instruments conditional upon individual project characteristics and match them with project structuring. Whether such instruments are effective depends on a project's return, the degree of risk reduction, the city's institutional capacity and creditworthiness.
2. PPFs should match the structure of project finance and possible PPPs with project characteristics and cities' institutional capacity. Finance instruments other than loans and fair and risk-balanced PPP models require sufficient institutional capacity, project preparation funding and thus sufficient project revenues. Hence, for many projects and cities, conventional loans may be the most effective approach.
3. PPFs may work on making project preparation a more commercial business in order to scale up successful approaches and expertise in the market. Creating a business case of project preparation would boost the supply of project preparation services and thus allow for realizing more projects.
4. PPFs should carefully choose the portfolio of their activities according to geographic, sectoral and institutional level dimensions. Each choice of focus involves a trade-off between gaining deep specific expertise and benefiting from multi-dimensional experience.
5. PPFs should develop expertise in climate resilience projects and their multidimensional and multi-sectoral implications. Projects for climate change mitigation and adaptation are among the most pressing ones and their implications for project preparation are often not sufficiently understood.
6. PPFs should put effort into collaboration with experienced and independent local consultants, who act as a link between PPFs and cities. These local consultants help create an effective long-term link with cities and can also inform the PPF about the challenges in a specific local context.
7. PPFs should share their success stories and successful approaches. This may take place in the form of expert hubs or events like the CCFLA Project Preparation Practitioners Forum. Success may be hidden in the small details of daily business of PPFs. This calls for regular information exchange for that success can be shared.
8. PPFs may exchange information beyond the PPF community and also create knowledge-sharing spaces with the financial sector (banks, development finance, insurance) and project developers. While the legal framework is given for PPFs in their countries of activity, capacity building contributes to "pushing the limits" towards a better environment.
9. In the long run, PPFs may contribute to improved creditworthiness of cities by providing evidence of a track record of successful projects. Cities may either be effectively rated as not creditworthy or exhibit some creditworthiness that goes unnoticed due to missing rating. A track record of successful projects may inform investors of local investment opportunities.

Taking these recommendations – built on the case studies and the interviews in this report – and combining them with the higher-level and broader-focused recommendations and solutions of the

PPF literature yields a compiled representation of the most important issues that need to be taken into account by PPFs in order to scale up success stories. Table 4 provides an overview.

Building upon these recommendations, the **seeds were planted a COP 23** during the Project Preparation Practitioners’ Forum in Bonn co-organized by CCFLA, FMDV and GIZ with the support of members of the Project Preparation Working Group of CCFLA (ICLEI, C40, GIB, UN Environment...), to develop an **initiative consisting of a subnational PP Platform to foster subnational climate finance**. Such a space would enable to exchange on the renewal of the investment models on Project Preparation.

Table 4 Main bottlenecks, solutions and recommendations in project preparation

Bottleneck	Relevant level	Solution	Relevant scope	Recommendation
Funding constraints for project preparation	Local, national and regional level	Scaling up funding sources	Enabling national policies	<ul style="list-style-type: none"> National governments should contribute to PP funding; Financial incentives could encourage private sector investments in PP.
	Project level	Scaling up PPF capacity	PPF: approaches and business models	<ul style="list-style-type: none"> Project preparation costs can be made part of project loans; PPFs may develop more commercial business models when appropriate (RE/EE sectors).
Political buy-in	Local and regional level	Making need of climate-resilient infrastructure transparent	City: commitment to climate finance PPF: access to local authorities	<ul style="list-style-type: none"> Climate risks should become integrated part of cities’ development plans and decision processes; Local experts may facilitate collaboration with cities; Strong domestic financial institutions may ensure the linkage between all levels
	Project level	Inclusion of local authorities and stakeholders (including local financial institutions and civil society) in PP	PPF: inclusive approaches	PPFs should include cities and stakeholders ((including local financial institutions and civil society organizations) from the beginning of PP
Lack of private sector participation	Project level	Development of PPP models	PPF: project structuring	<ul style="list-style-type: none"> Solid local financial intermediaries should be supported; Cities’ and PPFs’ capacity for private sector collaboration should be strengthened since the early stage of PP; PPFs should demonstrate to governments that quality technical assistance in project preparation reduces inherent risks and improves chances to attract the private sector and achieve financial closure

Table 4 *continued*

Financial risks, low creditworthiness of municipalities	Local level, project level	Application of risk-mitigation instruments, reduction of early-stage risks by project preparation	PPF: risk mitigation through project	<ul style="list-style-type: none"> • PPFs should make use of risk mitigation instruments in collaboration with development finance and private sector finance; • PPFs should share success stories and lessons learnt with risk mitigation instruments. • PPFs may create and share track record of successful projects to raise creditworthiness of cities
Insufficient project organization	Project level	Improving capacity of project developers	PPF: project management	<ul style="list-style-type: none"> • PPFs should be engaged throughout the whole project preparation stage; • PPFs should carefully select sectors, regions and scope of activities to develop sufficient expertise; • Local experts should be hired.
	National and international level	Improving capacity of project developers	PPF: project management	<ul style="list-style-type: none"> • National hubs of expertise could provide the right technical advice and ensure the linkage with the adequate source of funding; • Identify similar project initiatives at higher levels to avoid duplication of work and fragmented planning
Legal obstacles	National level	Legislative reforms	Legal framework	National legal frameworks should be improved to raise allocation of climate finance at the city level.
Lack of institutional capacity at local and regional level	Local and regional level	Improving capacity of local and regional governments	PPF: capacity development	<ul style="list-style-type: none"> • PPFs may combine preparation with capacity building for local and regional governments. • Coordination between different levels of government
Economic and political risks	National and international level	Providing finance through development institutions	General environment	PPFs and development finance should lower the higher overall risk by project preparation and finance and crowd in additional finance.
	Local and regional level	Coordination between different levels of government across time	PPF: access to local authorities; General environment	PPFs should promote continuity and coherence of projects amidst continuous political and institutional transitions
Sustainability	Project level	Making ESG assessments part of PPF approaches	PPF: ESG due diligence within procurement rules	PPFs should make support conditional upon sustainability requirements

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Annex

Experts

The following representatives of the profiled PPFs provided the information in the questionnaires:

- Brian Capati, Municipal Infrastructure Engineer, CDIA
- Barbara K. Buchner, Ph.D., Executive Director Climate Finance, Climate Policy Initiative
- Andreas Wohlhüter, Consultant, IDB

The following experts have been interviewed. In a few cases the interview was by way of email correspondence. The conversations have stimulated the development of the recommendations for PPFs in Chapter 6.

- Shigefumi Kuroki, General Director, Development Bank of Japan
- Stephen Hammer, Manager of Climate Policy, World Bank Group
- Gad Cohen, CEO, Eleqtra
- Dr. Klaus Liebig, Director, KfW Office Nairobi
- Darius Nassiry, Senior Research Associate, Overseas Development Institute
- Michael Lindfield, Director, Urban Infrastructure Services
- Joris Van Etten, ADB Program Manager, CDIA
- Dhruva Purkayasta, Director, USICEF, Climate Policy Initiative

PPF Tools and Approaches

PPF	Approach	Information
CDIA	City Infrastructure Investment Programming & Prioritization Toolkit	http://cdia.asia/resources/tools/
USICEF	Network of private service providers	https://www.usicef.org/service-providers-2/
ESCI	ESCI Methodology	http://www.iadb.org/en/topics/emerging-and-sustainablecities/implementing-the-emerging-and-sustainable-cities-program-approach,7641.html