



GUIDEBOOK

How to support actors in Least Developed Countries accessing climate finance to accelerate rural cooling solutions

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Content

1. BACKGROUND AND OBJECTIVE.....	1
2. RELEVANCE AND STATUS OF ACCESS TO COOLING IN LDCS.....	3
2.1. CURRENT MARKET ENVIRONMENT	4
2.2. KEY BARRIERS FOR ENABLING ACCESS TO COOLING IN RURAL AREAS OF LDCS	5
2.3. OPPORTUNITIES	7
3. CLIMATE OR CARBON FINANCE AS OPTIONS TO ENABLE SMALL-SCALE COOLING PROJECTS.....	8
3.1. CLIMATE FINANCE	8
3.1.1. <i>What is climate finance?</i>	8
3.1.2. <i>Financial instruments and global commitments</i>	9
3.1.3. <i>Types and sources of climate finance</i>	9
3.1.4. <i>Accessing climate finance</i>	10
3.2. CARBON FINANCE.....	12
3.2.1. <i>Introduction to carbon markets</i>	13
3.2.2. <i>General pre-conditions and requirements to participate in carbon markets</i>	14
4. IDENTIFYING THE MOST APPROPRIATE FUNDING SOURCES.....	15
5. KEY CONSIDERATIONS TO NAVIGATE THROUGH THE FUNDING APPLICATION PROCESS	22
5.1. SYNERGIES AND DIFFERENCES ACROSS CLIMATE FUNDS.....	22
5.2. APPLYING TO THE GREEN CLIMATE FUND	24
5.3. APPLYING TO THE MITIGATION ACTION FACILITY.....	28
5.4. SPECIFIC CONSIDERATIONS UNDER CARBON MARKETS (EXAMPLE OF ARTICLE 6.2 COOPERATION)	31
5.4.1. <i>Screening and identification phase</i>	31
5.4.2. <i>Activity idea/concept</i>	31
5.4.3. <i>Detailed activity design and approval</i>	32
6. CONCLUSION	34
REFERENCES	36

Figures

<i>Figure 1. Benefits of establishing access to cooling in LDCs</i>	3
<i>Figure 2. Key obstacles limiting access to cooling in LDCs</i>	7
<i>Figure 3. Examples of sources and types of finance</i>	10
<i>Figure 4. Project example by GCF</i>	11
<i>Figure 5. Project example by the mitigation action facility</i>	12
<i>Figure 6. Steps to identify the most suitable funding sources</i>	15
<i>Figure 7. The matchmaking process</i>	21
<i>Figure 8. The steps to prepare, submit, and implement a project under GCF</i>	25
<i>Figure 9. Key project requirements for eligibility under the Mitigation Action Facility</i>	29
<i>Figure 10. The application process to the Mitigation Action Facility</i>	30
<i>Figure 11. Requirements for projects under Article 6</i>	33

Tables

<i>Table 1. Information to be provided to climate funds vs. for carbon finance</i>	23
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Abbreviations

A6.4ER	Article 6.4 Emission Reductions
AE	Accredited Entity
ASER	Senegalese Rural Electrification Agency
CDM	Clean Development Mechanisms
K-CEP	Kigali Cooling Efficiency Program
CFI	Climate Finance Innovators
CMA	Meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
DPP	Detailed Preparation Phase
GCF	The Green Climate Fund
GHG	Greenhouse Gas
GWP	Global Warming Potential
IKI	The International Climate Initiative
ITAP	Independent Technical Advisory Panel
ITMO	Internationally Transferred Mitigation Outcomes
LDCs	Least Developed Countries
MADD	Mitigation Activity Design Document
MAIN	Mitigation Activity Idea Note
MEPS	Minimal Energy Performance Standards
MRV	Monitoring, Reporting and Verification
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NGOs	Non-Governmental Organizations
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PACM	Paris Agreement Crediting Mechanism
SAP	Simplified Approval Process
SDG	Sustainable Development Goals
SIDS	Small Island Developing States
SSA	Sub-Saharan Africa
UNFCCC	United Nations Framework Convention on Climate Change

1. Background and Objective

Enabling access to sustainable cooling services is a critical, yet often overlooked, component in national climate and development plans, especially within Least Developed Countries (LDCs)¹. Currently, approximately 370 million people in Africa are at significant risk from heat-related health and livelihood impacts due to limited access to cooling, with women making up 53% of this affected population (SE4ALL 2023). Despite this urgent need, LDCs face multiple challenges in advancing access to cooling, including inadequate infrastructure, restricted availability of cooling technologies, well-trained technicians, and financial barriers, which prevent vulnerable communities from benefiting from cooling solutions. Ensuring reliable access to cooling and mobilizing financial resources to support such projects are critical steps towards providing safe and livable conditions, especially for people living in rural areas of LDCs. The growing demand for affordable, sustainable cooling solutions, especially for small-scale applications in rural areas, requires innovative solutions for getting such projects financed and implemented. Such efforts can drive substantial development outcomes, including enhanced health, increased productivity, and especially food security in the agriculture sector across the region.

Since cooling services can cause significant greenhouse gas (GHG) emissions, accelerating sustainable cooling solutions is critical to avoid locking in GHG emission-intensive cooling technologies.² This shift involves adopting energy-efficient technologies, integrating renewable energy sources (such as solar-powered devices for cooling), and using low Global Warming Potential (GWP) refrigerants to meet rising cooling needs. However, the high upfront costs and efforts of these sustainable technologies often deter consumers and governments, particularly in regions like Sub-Saharan Africa (SSA), where small-scale cooling applications such as milk cooling and cold storage facilities are urgently needed, and cooling demand is rapidly escalating.

While cooling demand continues to rise, a significant financial gap exists in establishing access to sustainable cooling, particularly in LDCs of SSA where cooling infrastructure is often inadequate or non-existent. Enabling access to climate finance is an opportunity for countries to bridge this finance gap.

This guide was developed as part of the project "**Establishing Access to Sustainable Cold Chains in Ethiopia,**" funded by the Clean Cooling Collaborative. The project aims to enhance access to sustainable cooling solutions in Ethiopia. The Clean Cooling Collaborative (formerly the Kigali Cooling Efficiency Program, or K-CEP), an initiative of the ClimateWorks Foundation, is dedicated to

¹ LDCs are classified according to a combination of geographical and structural criteria. They currently include 45 countries (UNCTAD 2024).

² Currently, cooling-related emissions account for about 7% of global emissions, and this figure is expected to double by 2050 (CCC 2024).

transforming the cooling sector to provide efficient, climate-friendly cooling for everyone. Besides supporting Ethiopia in better reflecting the cooling sector in their Nationally Determined Contribution (NDC) and developing Minimum Energy Performance Standards (MEPS) for cooling equipment, one other main objective was to better enable access to climate finance for cooling services in Ethiopia.

The consultations with local stakeholders during the project revealed the demand for improved guidance on how climate finance can be accessed together with highlighting the importance of the role it plays in the implementation of such projects. This guidebook is based on the experiences from the project mentioned and reflects the authors' experiences from many similar assignments and contexts. Therefore, this guide can be useful for similar project types (rural, LDC) and is not limited to the cooling sector and the Ethiopian context.

This guide is designed for entities engaged in or interested in implementing projects that support countries and communities in accessing sustainable cooling solutions, while also assisting them in identifying and evaluating climate finance opportunities. It seeks to assist these stakeholders in evaluating diverse funding options and supports them in crafting successful funding applications. Additionally, it addresses funding institutions, aiming to raise awareness of the unique challenges faced by projects in difficult circumstances, such as those in rural areas, involving small-scale appliances, or located in LDCs. The guide aims to provide support to stakeholders interested in expanding rural access to cooling by helping them to better navigate through the landscape of climate finance. It outlines key considerations and steps when developing climate finance applications for small-scale cooling projects, particularly in LDCs like Ethiopia. The overarching aim is to provide guidelines that will support project proponents and governments in accessing suitable climate funding options.

In the following section, the guide delves deeper into the cooling sector, emphasizing access to cooling and highlighting the specific benefits of related activities within this context. It examines the market environment, relevant stakeholders, and expected barriers and opportunities. Section 3 describes what climate finance includes and differences between climate finance sources and their relevance for cooling projects. In section 4 the steps needed to identify funding sources suitable for the individual project's nature are listed and described. Section 5, includes guidance for navigating through the funding application process, along with two examples of highly relevant climate funds as well as information about carbon finance considerations. The final section 6 provides an overview of key takeaways from this guidebook by presenting key recommendations.

2. Relevance and status of access to cooling in LDCs

Establishing access to cooling is especially crucial for communities in LDCs to drive development and unlock transformative benefits. The benefits from cooling can include ensuring life-saving vaccination efforts, improving food security by preserving agricultural produce, enhancing nutrition and health for the general population by extending the shelf life of food and empowering disadvantaged groups through capacity building and equitable access to resources. Additionally, introducing cooling solutions can facilitate job creation by training service technicians. Establishing equitable access to

cooling is essential, particularly in LDCs of SSA, where a significant portion of the population resides in rural areas and relies heavily on agriculture as their primary source of income. E.g. in Ethiopia, 80% of the population lives in rural areas (World Bank, 2021), with agriculture contributing 40% of its gross domestic product (USAID, 2024). This trend is mirrored across many countries in the region. Agricultural activities, such as the production of food crops, meat, and milk, not only sustain household consumption but also provide essential income through market sales, making access to sustainable cooling extremely important for LDCs and their farmers.



Benefits of establishing access to cooling in LDCs

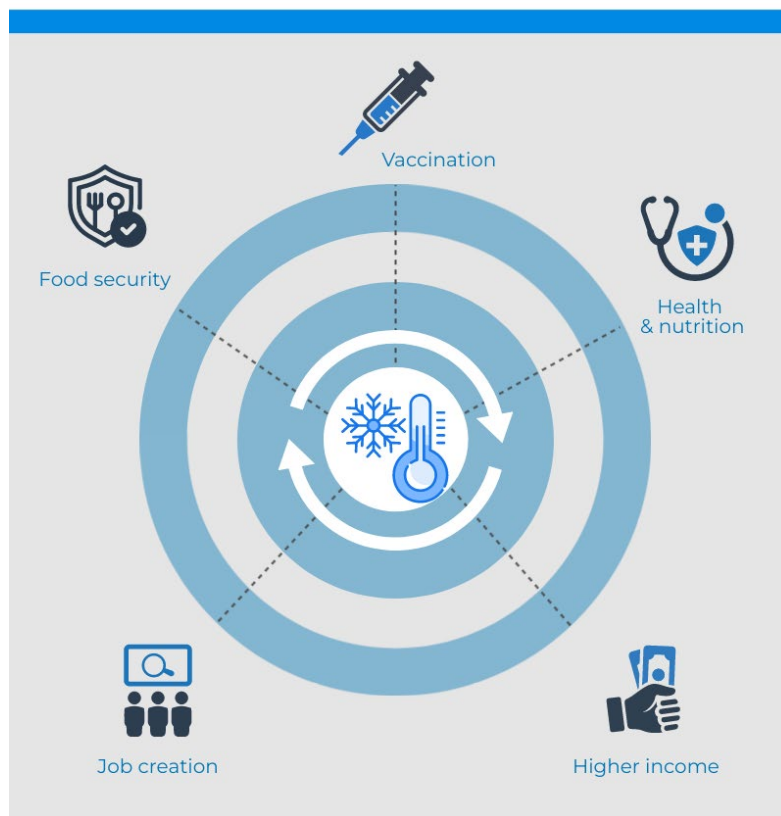


Figure 1: Benefits of establishing access to cooling in LDCs (Source: Authors)

A major barrier for farmers in such regions is the lack of cold storage for storing their products beyond their shelf life, such as milk. This absence leads to significant produce spoilage and low product quality, which ultimately leads to inefficient production and provision of much-needed goods and reduces farmers' income. To mitigate this, it is crucial to establish access to small-scale cooling applications through projects, particularly in rural areas and LDCs. However, the cooling services should be climate-friendly where possible to avoid negative consequences for the climate and avoid a lock-in of climate-damaging technology.

2.1. Current market environment

The current market environment for cooling in SSA is shaped by a combination of local contexts, regulatory gaps, technical constraints, and economic limitations, particularly in agriculture and milk cooling. For example, in Ethiopia, about 70% of the population is dependent on agriculture (BMEL 2021); however, agricultural cold chains are very limited. In the case of milk cooling, there are approximately 180 bulk milk coolers in Ethiopia, but only 31% of them are operational (SNV 2023). The lack of adequate milk cooling at farm and sub-regional levels creates inefficiencies within the supply chain, directly impacting milk production and consumption. This is reflected in Ethiopia, where 1.32 billion liters of milk produced go to waste annually, and the per capita milk consumption remains far below the World Health Organization's recommended level (GAIN 2019). Another constraint that exacerbates access to cooling is the limited access to electricity. In 2021, only 54% of Ethiopia's population had access to electricity, far below the global average of 91% (ESMAP 2023). And even those who have access to electricity often do not have reliable and continuous access. This electrification gap heavily impacts the cooling sector. Limited electricity, high costs, and weak regulations, including the absence of MEPS, exacerbate the issue, allowing obsolete, inefficient, and high-GWP technologies to proliferate (CLASP 2020). Overall, access to cooling in SSA, especially in LDCs remains severely constrained and limited. Where cooling solutions exist, they are often inefficient, depend on diesel generators, and use high-GWP refrigerants. Given the limited access to electricity, the market for off-grid, climate-friendly cooling solutions presents an opportunity. However, the high upfront costs of these solutions, combined with weak regulatory frameworks, often make it difficult to ensure widespread and sustainable access to cooling in most SSA countries.

The primary stakeholders involved in the cooling market include government bodies, implementation agencies, end-users, non-governmental organizations (NGOs), and technology providers. Each of these stakeholders plays a crucial role:

- **Government bodies:** create supportive policies, provide subsidies, and integrate cooling into national strategies like NDCs to facilitate adoption and access to finance.
- **Implementation agencies:** public or private entities responsible for managing project execution, coordinating with local NGOs, and communities, and ensuring that cooling solutions are effectively deployed and maintained.
- **Funders:** investors provide essential financial resources for the development and implementation of activities, assess project feasibility and suitability, and might periodically review project progress and outcomes.
- **End-users:** primary users' adoption of cooling technologies depends on affordability and ease of use. Training and financial accessibility are crucial to ensure they can effectively use and maintain the cooling systems.

- **NGOs:** provide support in developing a project activity aligned with local needs and provide training and capacity building to the end users.
- **Technology providers:** the suppliers develop and provide sustainable energy solutions suitable for rural and off-grid contexts.

A coordinated effort among these stakeholders is essential to establish accessible cooling solutions.

2.2. Key barriers for enabling access to cooling in rural areas of LDCs

As highlighted earlier, the cooling market in rural sectors faces significant challenges, especially in LDCs, where access to cooling technologies remains very limited. The key barriers are elaborated in more detail below and are summarized in *Figure 2*:

1. Limited access to technologies

Technologies for accessing cooling services are generally limited in most LDCs and even more in rural areas of LDCs. Reasons are manifold but include lack of awareness, non-availability of the technologies, lack of maintenance and technical service providers, etc. This can especially be observed for climate-friendly cooling technologies including renewable energy-charged cooling appliances and/or refrigerants with low GWP.

2. Infrastructure challenges

The dispersed nature of rural communities across vast regions complicates the implementation of centralized cooling infrastructure, emphasizing the need for decentralized and off-grid cooling options. Inadequate infrastructure, such as a lack of roads and unstable electricity, poses another significant barrier to accessing cooling solutions and conducting necessary surveys and studies to understand local conditions and needs. This limitation hinders the development of mitigation activities that are suited to rural contexts.

3. Institutional challenges

Preparing, implementing, and coordinating projects for enabling access to cooling in rural areas requires strong institutional support, a robust local network, and effective coordination with and within government entities. Developing and submitting applications for climate finance often require significant resources, various skills, time, and coordination for a long period (of up to 2 years or more). Institutional capacity to manage, validate, and report on climate finance-funded projects is essential, yet many regions lack the resources and expertise to meet these requirements.

4. Lack of know-how and training

Due to the non-existence or limited experience with cooling applications especially with sustainable cooling appliances, limited technical know-how exists. Pilot projects that include technical training and awareness raising would be required to build know-how and capacities. Limited technical knowledge leads to low levels of trust within communities and potential stakeholders (e.g. private sector), which further restricts outreach efforts, making it difficult to foster local adoption of such cooling

technologies. In addition, the lack of governmental support in terms of subsidies or tax incentives for low-carbon and sustainable alternatives, and the wider spread of corruption, may further discourage private-sector participation.

5. Financial barriers

Limited access to capital, high interest rates, and the unproven nature of some cooling technologies pose serious obstacles to adopting cooling solutions in LDCs and increase the perceived risks of investors being involved in such projects. Locally, financial burdens combined with generally low-income levels and the limited awareness and trust in the long-term benefits of these technologies reduce the incentives to invest in expensive cooling systems. At the same time, local banks lack experience with financing such types of technologies and hence are rather risk averse. Additionally, high upfront costs, lack of domestic manufacturing, and limited availability of spare parts and maintenance personnel further contribute to the inaccessibility of these solutions, particularly in rural areas with lacking financial institutions and inadequate infrastructure.

6. Data and information gaps

To evaluate the market potential for adopting new cooling services and develop a project that can be effectively implemented using technologies embraced by farmers in rural areas, extensive data is needed to assess feasibility, conduct due diligence, and properly justify the technical and financial rationale of the project. In LDCs, lack of infrastructure and limited access to reliable data are significant challenges for developing effective projects. These constraints make it difficult to gather accurate, up-to-date, and reliable information, which is essential for designing projects that align with local needs and conditions. Furthermore, data and information gaps complicate the formulation and design of project concepts and project funding proposals and would ultimately limit the ability to monitor and track the progress as well as the effectiveness of such projects over time (a key requirement of climate finance providers).



Figure 2. Key obstacles limiting access to cooling in LDCs (Source: Authors)

2.3. Opportunities

Several countries in SSA have outlined goals to enhance access to cooling, particularly in agricultural cold chains to improve food security as part of their NDCs and national development strategies. Cameroon aims to boost energy efficiency in agricultural equipment. Eritrea plans to incentivize households to switch to efficient refrigerators, targeting 4,500 units annually (FAO 2019). Rwanda is committed to improving energy efficiency in agro-processing industries using advanced technologies. Senegal seeks to replace 95% of its food refrigeration equipment fleet (FAO 2019), while Ethiopia aims to triple its milk production capacity by 2030 (GoE 2021). Most countries want to ensure access to cooling on the one hand and avoid negative climate impacts on the other. The former is often defined in national or sectoral development plans and the latter often emerges from the NDCs or underlying climate change-related policies or plans. Although the barriers discussed above highlight the challenges of establishing access to cooling in LDCs, they underscore the critical role that finance mechanisms may play in bridging these gaps. Addressing the lack of cooling access transforms lives and delivers substantial developmental benefits, including increased food security, improved health, higher incomes, enhanced self-reliance for farmers, and reduced economic inequality. Ultimately, these improvements can boost a country's economic prosperity and contribute to the achievement of Sustainable Development Goals (SDGs).

3. Climate or carbon finance as options to enable small-scale cooling projects

While the previous chapter describes the barriers that often prevent the implementation of access to cooling projects, this chapter aims to highlight the opportunities that climate finance offers for these types of projects. In sectors with similar barriers and circumstances, these funding sources have proven helpful in realizing projects and lead to significant positive impacts. To manage expectations, it is important to note that these funding sources alone are most likely not sufficient to overcome all challenges to transform a whole sector. In addition, certain requirements must be met to access potential climate finance sources. This chapter describes these financing options and how they can be used for access to cooling projects, and what limitations might exist. The focus will be on climate finance, as it is widely available and usually includes significant technical assistance components, which are needed to overcome the barriers outlined in Section 2. As a specific form of climate finance, carbon markets are also described at least in brief, as it is a central instrument under the Paris Agreement to help countries achieve their NDC targets and raise ambition of climate change-related targets over time. Carbon markets have the potential to help realize projects that lead to emission reductions and generate additional revenues and hence can help realize projects that otherwise would not have happened. Therefore, the general definitions, requirements, and limitations of carbon markets are explained as well in this guidebook. This is especially relevant, as several climate funds are considering, or at least discussing, whether to allow for blending classical climate finance and carbon markets. The following sub-sections will describe climate finance and carbon markets in more detail.

3.1. Climate finance

3.1.1. What is climate finance?

Climate finance refers to the financial resources mobilized to address climate change and support sustainable development. Climate finance differs in types, sources, and instruments, with the purpose of supporting mitigation, adaptation, and cross-cutting efforts. The sources of climate finance funding include national, local, transnational, public, private, multilateral, or bilateral (UNDP, 2023) sources. As there are similar but different types of finance such as green, sustainable, and low-carbon finances, the United Nations Framework Convention on Climate Change (UNFCCC) specifies the aim of climate finance to reduce emissions, enhance GHG sinks, and improve resilience while reducing the vulnerability of human and ecological systems in the face of climate change (LSE, 2024). The distribution of climate finance does not exclusively target countries with the largest needs. The UNFCCC introduced the principle of “common but differentiated responsibility and respective capabilities”, which sets out the expectations from different countries to ensure climate justice. This principle sets a bigger funding obligation on polluting economies, and recognizes the minuscule contribution of developing economies, as the biggest historic climate debt coincides with the largest

financial capability (Climatalk, 2021). In fact, the largest percentage of its mobilization goes to developed economies (CPI, 2024). However, LDCs and small island developing states (SIDS) have a critical need for finance, and in some cases use any finance they receive as climate finance applications due to their dire need for climate resilience to survive and keep their economies afloat (UNDP, 2023).

3.1.2. Financial instruments and global commitments

The UNFCCC has established a set of financial mechanisms, with operational multilateral entities to channel and provide climate financing to developing countries. Namely, the Global Environment Facility, the Green Climate Fund (GCF), the Special Climate Change Fund, the LDC Fund, the Adaptation Fund, and the Fund for Responding to Loss and Damage. Each of the funds has a focus and covers a specific scope. Other financing bodies mobilize climate finance to support countries' climate action efforts, providing resources as well as technical support where needed. The Mitigation Action Facility, previously known as the NAMA Facility, funds mitigation actions with a focus on energy, transport, and industry sectors, including cross-sectoral projects (Mitigation Action Facility, 2024a). Financial mechanisms under the Facility include grants, concessional loans, and direct investment subsidies among others. Another climate funding initiative is the International Climate Initiative (referred to as IKI), led by German ministries. Since its initiation in 2008, the initiative's support has amounted to nearly 6 billion EUR in over 1,000 projects, with the commitments in 2023 alone reaching 113 million EUR in SSA (IKI, 2023; IKI, 2024). While all the recipients of the official development assistance (ODA) under the Organization for Economic Cooperation and Development (OECD) are eligible as partners of IKI, the strategy of the initiative until the year 2030 is to focus on developing emerging economies and to expand its cooperation with African countries. Even with the relatively high increase in climate finance, less than 10% went to countries with the greatest need, with less than 3% of the total funds going to LDCs (CPI, 2024).

3.1.3. Types and sources of climate finance

Sources of climate finance vary as do types, as highlighted in *Figure 3*. While each of the types comes with distinct benefits and challenges, an integration of multiple sources and types is needed to meet the growing demands for climate action. From the public sector, national development finance institutions provided most of the funds in the period 2021-2022, and commercial banks provided most of the financing from the private sector. Of the total climate finance in these years, debt at market rate had the most common portion, followed by equity, while concessional finance was only 11%, and grants 5% (Buchner et al., 2023).

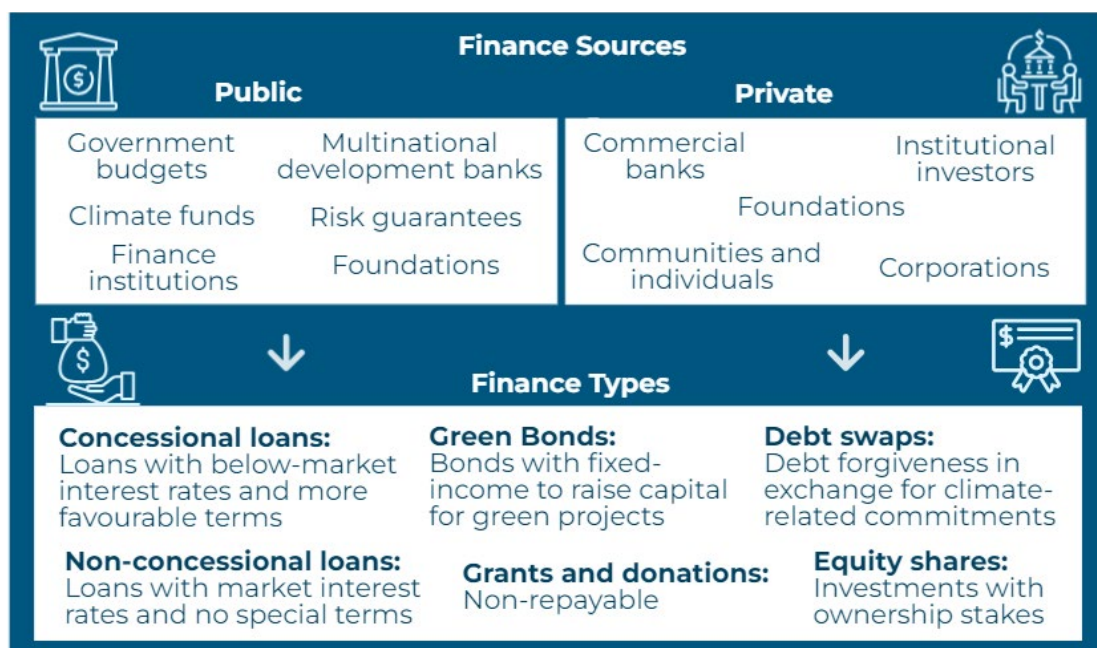


Figure 3. Examples of sources and types of finance (Source: Authors)

3.1.4. Accessing climate finance

Despite the increase of available climate financing in recent years and the push for further growth in climate negotiations, the facilitation of accessing climate finance from countries with the greatest needs remains crucial and often severely lacking. All developing countries that are parties to the UNFCCC are generally eligible to access climate funding through its multilateral entities. However, procedures and requirements differ across different sources that provide climate finance. Application processes for many climate funds require significant resources and skills for the preparation of applications (concepts, proposals) as well as perseverance. LDCs often have limited resources and lack these specific technical skills. In addition, most climate funds have certain expectations regarding project impacts (e.g. volume of emission reductions, transformational change, level of overall ambition), which must be demonstrated, as well as sometimes extensive bureaucratic requirements. This often contrasts with the size and scale of potential projects in many LDCs, and even more so for projects in rural areas including small-scale applications, such as milk cooling for small-holder farmers. In addition, for all types of climate finance, the challenge of lacking institutional capacities to manage and administer the funds and funded projects remains prominent (Fong, 2024).

Despite these challenges, success stories of countries acquiring significant climate funding and implementing projects that set them on track to achieve their climate goals exist. While the application process to obtain GCF is considered cumbersome and demanding, the project portfolio of the fund reflects promising stories, including both mitigation and adaptation projects, with a priority given to African states, LDCs, and SIDS. In the years between 2015-2024, around 150 projects were approved either in African countries, in LDCs, or in both. Among these projects, the most common impact area

for adaptation projects concerns the livelihoods of people and communities, and for mitigation projects, it is energy generation and access. However, only one of these projects is considered as completed as of now, finalized in 2022 in Namibia. This reflects the lengthy process needed to implement projects in LDCs, particularly those in Africa, and the importance of speeding up the facilitation of such applications to reap the benefits without delay (GCF, 2024). It is helpful to reflect on examples that show the possibility of successful climate finance application from the GCF or similar funds for projects with similar framework conditions (SSA, LDC, rural area, dispersed technology) such as solar-powered milk cooling systems. One such example is a project from the Senegalese Rural Electrification Agency (ASER), as presented in *Figure 4*. The project supports solar mini-grids in rural areas, and is currently under implementation, after having successfully received funding approval from GCF, supported by the Climate Finance Innovators (CFI) consortium and IKI (IKI, 2020). The GCF application for the ASER project illustrates the demanding capacity requirements to develop a full funding proposal with many supporting documents (including feasibility study, safeguards, financial model, and economic analysis), and was made possible through comprehensive technical support through IKI. At the same time, the West African Development Bank served as an Accredited Entity (AE) and had an established track record in mobilizing international climate finance and many climate-related investments in their portfolio. The GCF publishes the funding proposals of the projects it approves, as is the case with the ASER project (GCF, 2020a). These proposals can be reviewed as learning materials for entities planning similar applications.

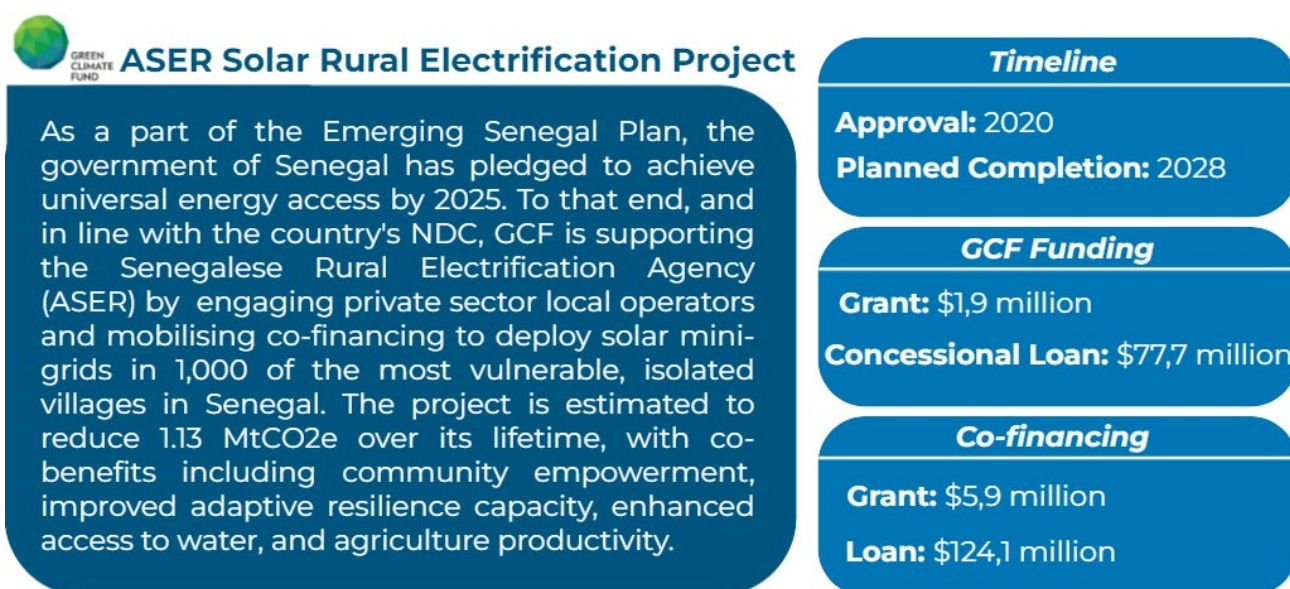


Figure 4. Project example by GCF (GCF, 2022a)

Another successful example is a solar cooling project in Kenya, which has been approved for implementation and funded by the Mitigation Action Facility, alongside further supportive financial mechanisms, as presented in *Figure 5*. Even though the projects are not comparable one-to-one with

sustainable access to cooling projects, they do have similarities regarding some aspects (e.g. focus on rural areas, solar technology, LDC host country).

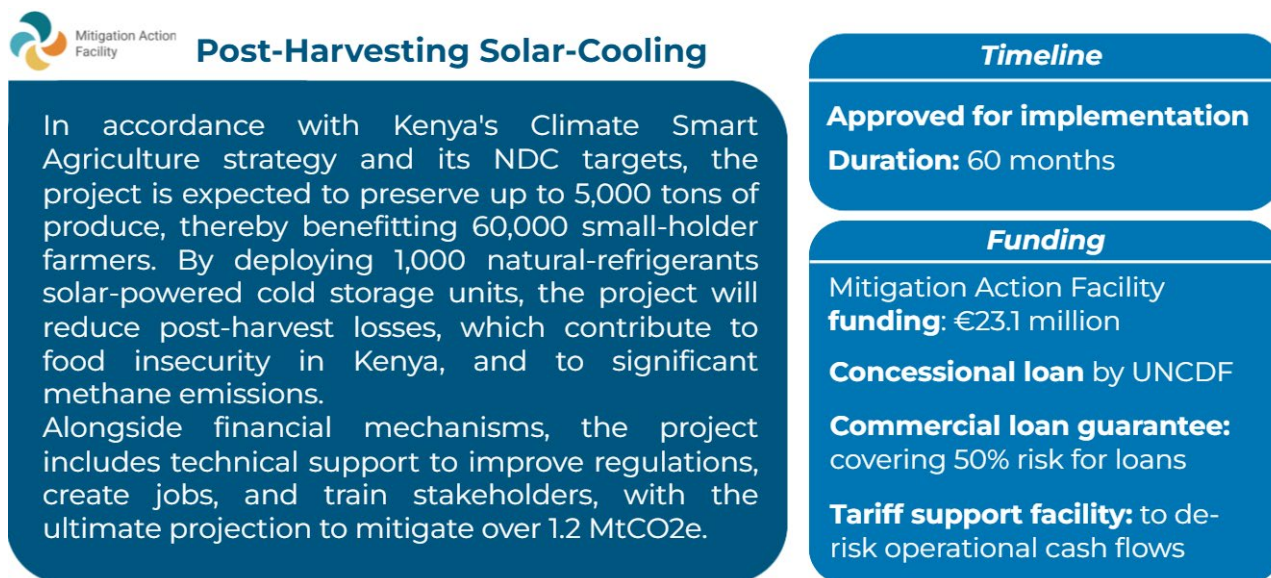


Figure 5. Project example by the mitigation action facility (Mitigation Action Facility, n.d.)

During the work conducted under the project "Establishing Access to Sustainable Cold Chains in Ethiopia," funded by the Clean Cooling Collaborative, the authors came across a project for solar milk cooling that has been implemented by Solidaridad and funded by the World Bank BioCarbon Fund³. This project is not comparable in terms of size with the GCF, or the Mitigation Action Facility project examples shown above, but it shows that climate finance sources are available and can be successfully accessed for highly innovative and/or novel technologies in the cooling sector.

3.2. Carbon finance

Although this paper focuses on climate finance, it is considered important to specifically address carbon markets, which represent a specific type of climate finance. Carbon markets can be considered as a potential instrument for countries to achieve their conditional NDC targets, but above all to increase the ambition of their mitigation targets, which is a key goal of the Paris Agreement. Many LDCs in SSA already have experience with carbon markets, mainly through hosting and developing projects under the Clean Development Mechanisms (CDM) or the voluntary carbon market and have built up expertise and capacities. LDCs have implemented projects under the CDM that faced similar challenges as described for access to cooling projects (see section 2). Such project types include for example rural off-grid electrification, energy-efficient cook-stoves or solar irrigation projects. The

³ For more information, please refer to the BioCarbon Fund website: <https://www.biocarbonfund.org/>

carbon market framework under Article 6 of the Paris Agreement will likely be used by many countries to raise funds for mitigation projects that would otherwise not be feasible. Therefore, the following section will provide an overview of what carbon markets are, how carbon market frameworks are defined under the Paris Agreement, what opportunities exist for countries to engage and what pre-conditions and requirements need to be met.

3.2.1. Introduction to carbon markets

Carbon markets are systems designed to reduce GHG emissions by providing economic incentives to projects that reduce emissions compared to what would happen without the incentives. They enable the trading of carbon credits, where each credit typically represents the equivalent of one ton of carbon dioxide equivalent removed or prevented from entering the atmosphere. For LDCs, carbon markets provide significant opportunities to attract investment and to finance additional mitigation activities that not only reduce emissions but also promote sustainable development. However, there are also stringent participation requirements as well as limitations to use carbon markets.

There are different types of carbon markets comprising national and international markets, compliance markets where carbon credits are traded to comply with certain laws and regulations, and voluntary carbon markets for those who want to go beyond any mandatory requirements. The demand for voluntary carbon market credits is largely driven by companies wanting to compensate for their emissions or support climate action (Streck et al., 2021). Further, the Paris Agreement under the UNFCCC includes market-based cooperation under its Article 6 to enable countries to enhance their climate change mitigation and adaptation ambition as well as foster sustainable development. Carbon markets are an instrument for countries to mobilize finance from public and private sources worldwide that can support the achievement of their conditional climate targets, enabling mitigation actions that would not take place without this incentive (Ahonen et al., 2023). Since carbon markets can only be discussed to a very limited extent in this paper, the description below in this guidebook focuses on the approaches mentioned under the Paris Agreement, namely under Article 6.

The Article 6 rulebook was recently finalized at the 29th Conference of the Parties (COP29) to the UNFCCC in Baku in 2024, including the full operationalization of the Paris Agreement Crediting Mechanism (PACM) going forward. Two key Article 6 elements are essential here for the area of GHG mitigation:

- **Article 6.2** defines cooperative approaches to engage in carbon markets that enable countries to trade mitigation outcomes bilaterally with the purpose of achieving their NDCs, as well as to achieve robust accounting for voluntary carbon markets and other international mitigation instruments such as the International Civil Aviation Organisation's Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) mechanism. Those credits are referred to as Internationally Transferred Mitigation Outcomes (ITMOs) and must meet the minimum criteria for being real, additional, and verified emission reductions or removals. Countries can

engage in direct agreements to trade ITMOs or establish collaborative mechanisms, without being confined to a centralized system. This provides flexibility for countries to craft tailored arrangements. However, to engage in trading carbon credits under Article 6.2, the host country needs to agree on the terms and conditions for the transaction with each individual buyer under a bilateral agreement. This means a considerable administrative burden linked to the coordination and internal processes, especially for LDCs (UNCTAD, 2024). To ensure high environmental integrity, the countries cooperating must report on their activities in a transparent manner through regular submissions to the UNFCCC (Michaelowa et al., 2022). A robust accounting system is mandated to prevent double counting of emission reductions. This involves adjustments in the NDC inventories of both the transferring and receiving countries.

- **Article 6.4** refers to the PACM, which is governed by the Article 6.4 Supervisory Body, which reports to the CMA (Meeting of the Parties to the Paris Agreement). The PACM is the successor to the Kyoto Protocol's Clean Development Mechanism. It provides a centralized mechanism for registering emission-reduction activities that meet specific criteria and will issue carbon credits called Article 6.4 Emission Reductions (A6.4ERs), ensuring compliance with international standards for environmental integrity as well as a steady increase in ambition (UNCTAD, 2024).

3.2.2. General pre-conditions and requirements to participate in carbon markets

Despite the opportunities to attract investment for climate solutions that carbon markets offer, LDCs may face challenges in participating in Article 6 mechanisms. For a country to be ready to engage in carbon market activities under Article 6 the government should be fully aware of formal participation and reporting requirements and set strategic priorities on how the country wants to use the instrument for the benefit of its NDC and avoid possible negative consequences such as jeopardizing the achievement of its national climate targets. It is also recommended that governments willing to use Article 6 create the necessary institutional infrastructure and responsibilities including the assignment of roles of key actors, developing legal frameworks, and ensuring robust accounting and reporting to UNFCCC as part of Biennial Transparency Reports submitted to UNFCCC (which has to be prepared for progress reporting on NDC implementation anyways). Furthermore, there are operational procedures that a country should define to provide clarity to all stakeholders involved as well as the infrastructure needed to trade carbon credits (such as access to a registry). Significant time and resources are required to build up the readiness for Article 6 participation, enabling Article 6 engagement, and alignment with the country priorities outlined in its NDC and the existing monitoring and reporting structures (NDCP, 2024a).

Besides low levels of Article 6 readiness in some countries that might still be in the early stages of exploring Article 6 engagement, another limiting factor might be the necessity to ensure upfront finance for carbon market activity development. Carbon finance is usually made available after a mitigation activity has been successfully implemented and emission reductions have been achieved. Therefore, financial barriers often exist as project proponents need to ensure sufficient funds for

detailed project design, validation by an external validator, fees for registration, and up-front finance for the implementation of an activity. Here climate finance can play a crucial role in bridging this funding gap and even help build up capacities that can increase engagement in carbon markets in the future. It should be noted that several climate finance providers and climate funds allow for or are considering blending climate finance and carbon markets so that the underlying projects or components could benefit from both with the aim of a stronger impact and enabling an even better low-carbon transition. This could be done e.g. by providing climate finance for building the enabling environment through technical assistance, implementing a mitigation project, and allowing for carbon revenues as an exit strategy once the climate finance will run out (after the climate finance funding period is over). This in turn means that project proponents looking to leverage carbon markets to finance their activities must carefully analyze what climate finance and carbon mechanism finance are available for the underlying project idea, sector and the host country (e.g. are there existing bilateral agreements), the current status of readiness of the country (are the necessary requirements in place) and if the activity is compliant with the integrity requirements of the selected crediting mechanism or requirement of host and buyer country.

4. Identifying the most appropriate funding sources

This section offers guidance to project proponents and other relevant stakeholders on designing potential activities for climate or carbon finance. It outlines essential requirements, conditions, and eligibility criteria for key funding options, enabling stakeholders to identify and address any mismatches or alignments in funding these activities. This is particularly important as extensive requirements of climate funds and the prerequisites for participation in carbon markets under Article 6 of the Paris Agreement can be challenging. On the other hand, the mitigation options in rural regions of LDCs often have great potential to enable positive and far-reaching changes towards more sustainable livelihoods and prosperity. In the following, a step-by-step process to explore whether a project idea has a chance of receiving climate financing and how to better assess the effort and opportunities involved is provided. This is especially relevant in circumstances with limited resources and capacities. These steps are intended to provide initial guidance on how to approach climate finance for new projects. *Figure 6* provides an overview of the steps.



Figure 6. Steps to identify the most suitable funding sources (Source: Authors)

Step 1: Defining the initial project idea and institutional set-up

Usually, an initial project idea is the starting point, for which one wants to access climate finance. For being able to better assess eligible funding sources, it is crucial to develop a better understanding about the scope of the project (technology, size), the expected impacts and benefits (e.g. GHG emissions, to the local community), the location, and who would likely be involved in the preparation and implementation of the project. The project should be aligned with the country's national development plans and the NDC and have potential partners who can ensure effective implementation. This project idea should be developed in close coordination with key stakeholders relevant to the project and be summarized in a project idea or concept note. Key elements to consider when defining the project idea include:

- **Alignment with the country's development policies and strategies:** The project idea should directly address the country's needs, especially in rural settings, and align with existing policies. For instance, installing cold chains or cold storage systems to improve food security and increase farmers' economic self-reliance.
- **Alignment with the nation's NDC and climate strategy:** A key prerequisite for accessing climate finance or carbon market funding is that the project should directly or indirectly support the government's climate change goals, whether for mitigation or adaptation, as outlined in key strategic documents like the NDCs and national development plans. However, in many LDCs in SSA, cooling-related targets have not yet been included in NDCs or national plans, making it difficult to secure financing for such activities.
- **Identify key stakeholders and align with stakeholders' views:** This includes identifying key project partners. A strong coordinating entity and implementation entity(ies) with respective sector expertise, local knowledge, and a good network, are essential for successful project implementation. Coordination with government bodies, NGOs, and other relevant stakeholders is essential for ensuring a sustainable outcome. Wherever possible, this information should be backed by support letters confirming the willingness of entities to engage. The project idea should be closely aligned to the expectations, needs, and capacities of the key stakeholders involved. A strong institutional set-up and ensuring buy-in from key stakeholders is key for addressing local barriers, ensuring effective coordination and technical support, and increases the likelihood of success and sustainability of the project.

Step 2: Identification of available funding options

After the project idea has been identified and described, it is important to explore potential funding options (both domestic and international) considered suitable for the project in the given context. This is important, as different climate finance sources have different requirements and objectives that need to match the planned project.

- **Domestic Funding:** Check if there are any national or sectoral budget allocations, regulations, or programs already or planned for the specific sector or project type/technology. Investigate any future funding allocations for the proposed project activity (or overarching sector) within

overarching national strategies or climate strategies. Additionally, explore if there are any national banks or domestic financial institutions that may be interested in co-financing such project activities or have at least experience in similar activities. Co-financing is particularly crucial, especially in the context of climate finance options, as it ensures long-term viability and helps achieve transformative impacts.

- **International Funding:** explore the various climate finance and carbon finance options. These can include multilateral funds such as the GCF, Global Environment Facility, Climate Investment Funds, Mitigation Action Facility, or regional institutions such as the African Development Bank or African Climate Change Fund, as well as foundations such as e.g. ClimateWorks Foundation, and IKEA Foundation. Narrow down the list of potential funding options by checking the core focus areas of each source to ensure alignment with the project's activities. For example, the Mitigation Action Facility has three priority sectors for which it accepts project proposals: industry, transport, and energy. If the project activity does not relate to these sectors, it is not recommended to approach the Mitigation Action Facility. It can also be checked which Climate Funds have already supported projects in the country or region or even in the same sector. Conduct this exercise for the most relevant prospective climate finance options to see if the project activity aligns with the core focus and its essential conditions, and thereby narrowing down the list of eligible potential funding options.

Step 3: Assess requirements, pre-conditions, and support mechanisms of available funds

After identifying potential funding sources aligned with the project's objectives and country context etc., it is crucial to examine the key requirements and eligibility criteria for each fund to determine the most suitable funding option. For climate finance funding, this assessment should include the following aspects:

- **Volume and duration of funding available:** Ensure that the total amount of funding offered by the source is sufficient to meet the financial needs of the project. Some funds have minimum requirements and projects need a certain size (minimum financing volume). Other funds may only support a portion of the project, requiring additional sources of financing/co-financing. Different funds have different durations for dispersing the funding. Often, funding is limited for a certain number of years (e.g. up to 5 years). This may impact the project design and implementation timeline, especially for projects aiming at long-term initiatives that require phased financial support.
- **Support offered for funding proposal:** Some funding agencies, such as the Mitigation Action Facility, GCF, or IKI, under certain conditions, provide financial and technical support for detailed proposal development, helping the project team refine their submissions.
- **Application timeline:** Some funds only accept applications once they call for concepts or proposals (maybe once a year). This needs to be considered and taken into consideration when preparing a project idea and planning an application for climate finance. Please note that such calls may focus on a specific scope (sector or regional focus).

- **Need for accredited entities:** Some funding agencies, such as the GCF, require the involvement of accredited entities that meet specific financial and operational standards. Understanding the process of obtaining accreditation or partnering with an AE is essential.
- **Understanding different processes involved:** Different funds have varied application, evaluation, and disbursement processes. For example, the Mitigation Action Facility has mainly five phases: Concept, Outline, Detailed Preparation Phase (DPP), Proposal submission, and implementation phase. Different funds require different templates and annexes to fill in and supportive information to be provided about the project and entities involved. It is crucial to understand these processes to plan the resources and expertise needed, timeline and avoid delays or misalignment.
- **Level of impacts:** Some funding sources may have minimum requirements on impacts to be achieved, or certain definitions (e.g. the Mitigation Action Facility differentiates between direct and indirect mitigation (Mitigation Action Facility, 2024b)). Other climate finance providers may fund projects with limited mitigation impacts if other impacts (e.g. adaptation, sustainable development) are the primary focus. The latter may be more suitable options for certain projects in LDCs or SIDS. As an example, milk cooling in rural areas offers significant development benefits (e.g., improved nutrition, health benefits, and economic resilience of farmers) but may yield limited mitigation outcomes due to limited scaling potential. This makes this type of project less attractive to funders focused primarily on the volume of emissions reductions.
- **Letter of support from government:** Certain funding agencies, particularly international funds including GCF, require a formal endorsement or letter of support from the government of the host country (or in the case of GCF, from the National Designated Authority (NDA), the designated focal point between the country and GCF). This ensures that the project aligns with national priorities and receives the necessary backing for implementation.

When considering carbon markets as a potential financing option, certain aspects listed above would be relevant as well, including funding volume, requirements for accessing funding, expectations on impacts, and timelines to be considered. The following additional aspects would need to be assessed and considered when engaging in carbon markets under the Paris Agreement:

- **Level of readiness in the country:** A country's readiness for Article 6 is vital because this readiness enables it to effectively engage in carbon markets, avoid negative consequences, and maximize benefits for sustainable development and climate action. A country needs to fulfill the pre-requirements to engage under Article 6, have infrastructure, systems and processes in place to avoid double counting of emission reductions and ensure that projects participating in Article 6 comply with and contribute to achieving the country's NDC without compromising long-term ambition. Please refer to the Article 6 Readiness Toolkit and Framework developed by the NDC Partnership (NDCP 2024a) for an overview of what Article 6 readiness includes. For Article 6.2 (see section 3.2 for the definition) bilateral agreements are essential to allow for the cross-border exchange of carbon credits, ensuring that both countries involved are aligned on

the criteria for credit issuance and use. Without these agreements, projects may face barriers in accessing international carbon markets or in ensuring that their carbon credits are recognized and tradable internationally.

- **Transaction costs:** Carbon credit transactions often involve fees for developing the project documentation (e.g. Mitigation Activity Design Document (MADD)), the validation and registration or approval, the authorization, the monitoring, reporting and verification (MRV), and the verification process. In addition, some projects may require the development or revision of the underlying baseline and monitoring methodology(ies). These costs can significantly affect the financial viability of projects, especially for smaller-scale activities that might struggle to cover these additional costs. The fact that carbon revenues accrue only ex-post makes it necessary to find solutions for how these transaction costs can be covered ex-ante. Some actors involved in Article 6.2 may, under certain pre-conditions (e.g. initial evaluation of the project idea), provide up-front support to cover parts of the transaction costs.
- **Methodological requirements:** Carbon market projects often require a formally approved GHG accounting methodology that is tailored to the specific context (e.g. technology, application, use case) of the project. This contrasts with climate finance, where reasonable deviations from methodologies, backed by logical reasoning, are generally acceptable. In some circumstances, finding an approved methodology that is both suitable and relevant to the local context can be challenging, as not all methodologies are adaptable to different regions or project types. One example of this methodological challenge is the lack of appropriate methodologies in both climate finance and carbon markets to address suppressed demand⁴. Establishing a reliable baseline is difficult when cooling technologies are non-existent (which is often the case in LDCs). Conventional baseline scenarios typically assume the use of fossil-fuel-based cooling systems, which may not yet even be in place, as often is the case in rural areas of SSA LDCs.
- **Validation and authorization requirements:** Article 6 requires independent validation by accredited third-party entities to ensure the project meets the necessary criteria for carbon credit issuance. Under Article 6.2, further validation requirements may exist from the countries involved. In addition, the institutions involved, the underlying projects, and the mitigation outcomes that need to be authorized must be eligible to be internationally traded as ITMOs. This may require interactions with government institutions or assigned authorities, which should be taken into consideration. The processes and potentially involved fees, timelines, etc. are supposed to be provided in the regulatory framework or operational procedures for Article

⁴ "Suppressed demand" refers to situations where basic services, such as lighting, cooking energy, or cooling, are insufficient to meet basic human needs due to the specific conditions of a region. This concept is essential for calculating emission reduction from clean energy projects in LDC countries and rural areas, where even the basic demand remains unmet. By applying suppressed demand, a baseline emission level is established as if these needs were fulfilled using conventional fossil fuel sources, enabling calculation of emissions reductions when the project delivers these services through low-emission alternatives.

6 of a country. However, many countries and the majority of LDCs are still developing this regulatory framework.

- **Additionality assessment:** Mitigation activities developed under Article 6 need to demonstrate additionality, meaning that the emissions reductions or removals resulting from the activity would not have occurred without the revenues generated from the carbon credits. This is a critical requirement for ensuring the credibility and environmental integrity of the carbon credits generated, particularly for Article 6.2 and 6.4 projects. It is essential to assess the additionality of the project in a transparent way as early as possible to ensure only proceeding with projects and spending time and resources for those eligible under the respective carbon market mechanism.

Based on this analysis, a detailed review of funding agencies and their alignment with project activities should be conducted. This process will help in selecting the most appropriate and suitable funding option by considering the country's local context, the project's specific objectives, and the funder's eligibility criteria.

Step 4: Eligibility check

Once funding sources have been identified, the eligibility to assess this funding source needs to be assessed in more detail. The eligibility assessment is twofold and includes on the one hand the eligibility of the entities applying for funding and intending to implement, and on the other hand the eligibility of the project for which is supposed to be funded.

Regarding the entity, some funds have pre-conditions and requirements that applicants and involved entities need to fulfill. GCF requires, e.g., that applicants and entities receiving funding from GCF are accredited to ensure their fiduciary capacities, environmental and social safeguards, gender policies, and ability to manage GCF funds effectively. Other funds may focus on supporting institutions of a certain size or that are based in specific regions and sectors and thus have requirements on minimum number of employees, location, or sector expertise. These requirements should be assessed before dedicating resources to preparing an application.

For project eligibility, project proponents should ensure alignment between the planned project and the requirements of the respective funding source. Climate finance providers often require that projects are closely aligned with NDC targets and other national and sectoral policies and strategies and contribute to the climate and development goals of the host country. A policy analysis should be conducted to ensure the project activity aligns with the NDCs, as this is a key criterion for most funding agencies. In addition, some climate finance providers have specific expectations regarding the project scope and maximum available funding volume. Furthermore, some funds have dedicated focus sectors or regions that are supported exclusively or at least preferentially. There may also be funds that support very specific types of projects or technologies in underrepresented sectors. Such a focus can change from time to time, which is why it is important to check before investing time and money in an

application that has little chance of success. If in doubt, you should contact the potential funding source directly and ask.

If the project is to be developed as an Article 6 activity it must meet specific Article 6 requirements (as outlined in section 4) and align with country policies and requirements.

Step 5: Matchmaking

Once the project idea has been defined, the funding source was identified, and the eligibility of the involved entities and the project was assessed, it is important to understand and evaluate ways to align and harmonize the overall objective of the project amongst potential funding partners, implementation entities, and government partners. This involves further elaboration of the project concept, discussing tentative roles and responsibilities of each partner, and addressing any points of non-alignment or potential conflicts. Such discussions should be conducted transparently and documented to ensure that all stakeholders are aligned and on the same page, helping to avoid any misunderstandings or conflicts during or after the application process.

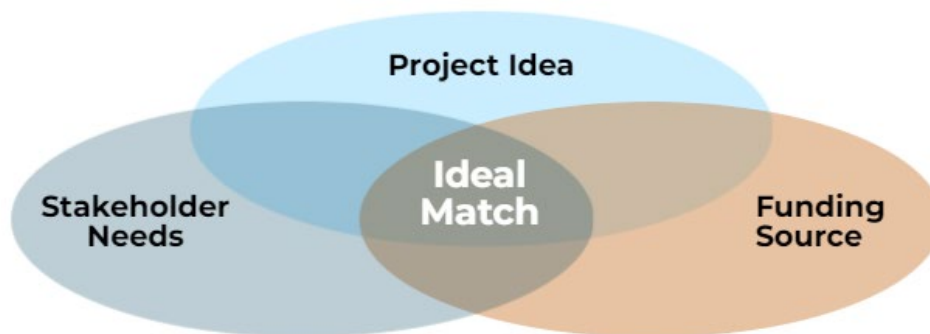


Figure 7. The matchmaking process (Source: Authors)

Step 6: Realistic resource and timeline, assign responsibilities

Building on the previous step, proper initial planning for the application process is essential. Therefore, it is recommended to develop a clear work plan outlining the responsibilities of each partner, key resources needed (e.g., technical and financial resources and skills, external consultants), and a timeline for the application process. The required time and resources should reflect the requirements of the climate finance source and can significantly vary depending on the source. An application for GCF or the Mitigation Action Facility can take up to two years from the concept stage to the final proposal. Responsibilities should be clearly defined and demarcated for the application process. The work plan must be realistic, considering the local context, such as the time required to align with government processes, potential coordination challenges, and other relevant factors including the application processes of the fund. References from similar projects in comparable contexts (other similar LDCs) should be utilized to ensure the feasibility and effectiveness of the plan.

Step 7: Stakeholder consultations

Stakeholder consultations may be required and are highly recommended throughout the different stages of the application process. Potential objectives for stakeholder consultation include:

- **To gather support:** Raise awareness, identify possible project partners or technology providers, engage government entities, and align roles and responsibilities with key stakeholders. Sometimes governmental letters of support are explicitly required.
- **To gather data:** Collect information/data relevant to the application process and for describing the project. This could include e.g. government policies, NDC implementation status, sector information, GHG inventory, or MRV procedures (if available).
- **To share findings:** It can be beneficial to present and discuss the status of the application with key stakeholders and gather feedback to refine the project activity and application.
- **To explore co-financing opportunities:** discussions with local banks or investors can help in developing business models and financial mechanisms and create opportunities for complementary funding.

After the most suitable funding source has been found, the initial steps for the application process (e.g. concept development) need to be conducted. This should be done in close coordination with the involved stakeholders as well as in alignment with the requirements and timelines of the targeted climate fund. What steps are typically required for developing an application and what information is essential, are described in the following section 5 with the examples of GCF and the Mitigation Action Facility.

5. Key considerations to navigate through the funding application process

Once a potential funding source has been identified and eligibility assessed (see section 4 for the steps to take), it is important to understand the funding application processes, requirements, templates, and timelines. Successful applications are contingent on complete and timely navigation of the steps required by funds, aligned with their respective goals.

5.1. Synergies and differences across Climate Funds

While a need for robust, well-defined project plans and objectives are required across all climate finance providers, funding sources widely vary in terms of governing institutions, scope, complexity, extent, and length of the application process. Familiarizing oneself with the requirements for applying to the respective climate fund is highly recommended, as has been detailed in section 4. Taking the resources needed and timelines into account will help to manage expectations, make a final judgment on the feasibility and appropriateness of the funding source, and overcome certain barriers to the application process. The limited technical, human, regulatory, and institutional capacities and

infrastructure, as well as limited access to information and guidance, and the uncertainties often faced by stakeholders in LDCs, make it even more important to properly reflect on the needs at an early stage (Nor et al., 2024).

Even though different funds use different templates and may have specific requirements, guidelines, and application processes, certain information is required across most funds. Such synergies do not only exist across climate finance funds but to a certain extent also between climate fund applications and project documentation for carbon markets (e.g. Article 6.2). In addition to synergies, there may exist important differences between funding sources. Some funds require a comprehensive logical framework (log frame), which is a matrix that encompasses objectives and outcomes expected of the project alongside resource allocation. It is used to evaluate the project and monitor it with success indicators. Often, funds look at the alignment of objectives with national NDCs and sectoral plans to create synergies across different activities. To that end, it must be ensured that progress is measurable towards the planned goals. The following table shows the main sections and information that needs to be provided in the application document, almost independently from the funding source (specific requirements to be checked individually) and key differences.

Table 1. Information to be provided to climate funds vs. for carbon finance (Source: Authors)

Section/Information	Climate Funds	Article 6.2 (MADD)
<i>Project design (scope/technology)</i>	Yes	Yes
<i>Logical framework</i>	Yes (by most funds)	Usually not
<i>Institutional framework</i>	Yes	Yes
<i>Approach and calculation of emission reductions including baseline emissions, project emissions, volume of GHG</i>	Yes	Yes
<i>Additionality determination</i>	Yes	Yes, strict
<i>Business model</i>	Yes	Yes
<i>Financing mechanisms</i>	Yes	Yes
<i>Alignment to NDC and national/sectoral policies</i>	Yes	Yes
<i>Transformational change</i>	Yes	(limited)
<i>Contribution to sustainable development</i>	Yes	Yes
<i>MRV procedures</i>	Fund-specific	Yes, strict

Funds may have different priorities in terms of desired and measured impacts. Particularly, impacts beyond emission reductions are increasingly important to explore and include in applications. Such impacts include social aspects including poverty alleviation, gender equality, social inclusion, and health. Additionally, economic and environmental impacts can make projects more appealing for funds as well as maximize their benefits, such as capacity building, job creation, sustainable

development, ecosystem conservation, and livelihood perseverance. The project design, logical framework, and MRV need to be closely aligned with such objectives and requirements of funding sources.

Differences also exist regarding the application documents (templates and supportive documents). The GCF for example, in addition to demonstrating the technical, economic, financial, commercial, and legal feasibility of projects, requires compliance with its environmental and social safeguards' standards to be demonstrated in funding proposals (GCF, 2020b). As for the Mitigation Action Facility, proposals are assessed based on their direct and indirect GHG mitigation potential, significance, plausibility, and cost-effectiveness, which are to be presented in a specific template as an Annex to the proposal (Mitigation Action Facility, 2024b). Such individual distinctions must be taken into consideration when planning an application process.

The application process will likely differ across funding sources in terms of steps required, sequence, and timelines. Some funds have Calls for Proposals while others may accept applications at any point in time. The duration between proposal submission and approval typically takes several months and could be longer when revisions and multiple stakeholders are involved. The application process until approval is comparably shorter for the Mitigation Action Facility, and it follows periodic Calls for Projects (usually once a year).

In the following, the application process for two climate finance entities is explained, highlighting best practices for successful applications.

5.2. Applying to the Green Climate Fund

The application to the GCF should begin with understanding the requirements and steps involved. Additionally, it is essential to reflect on successful previous project proposals in similar contexts (sector, region, entities involved). The application process follows a structured process, where proponents must apply through an NDA, which functions as an interface and focal point of contact for applicants. This authority is responsible for coordinating GCF activities and providing guidance where needed.

In cases where project proponents do not have access to an established NDA, a focal point can substitute for the NDA until one is appointed. Additionally, when a proponent seeks to apply to the GCF, they either need to partner with an existing AE, or obtain accreditation themselves. The role of an AE includes submitting funding proposals, as well as implementing the approved projects alongside executing entities.

National or regional AEs are called direct access entities, and multilateral AEs are called international access entities (GCF, n.d.b). With the support of an NDA and an AE, a project can begin on a 10-step journey to develop and submit a proposal and implement a project. A summary of these steps is provided in *Figure 8*. For further information and prior to any planned application to GCF, it is highly

recommended to assess the information provided on the GCF's website, also since processes and requirements may change over time (GCF, n.d.b).

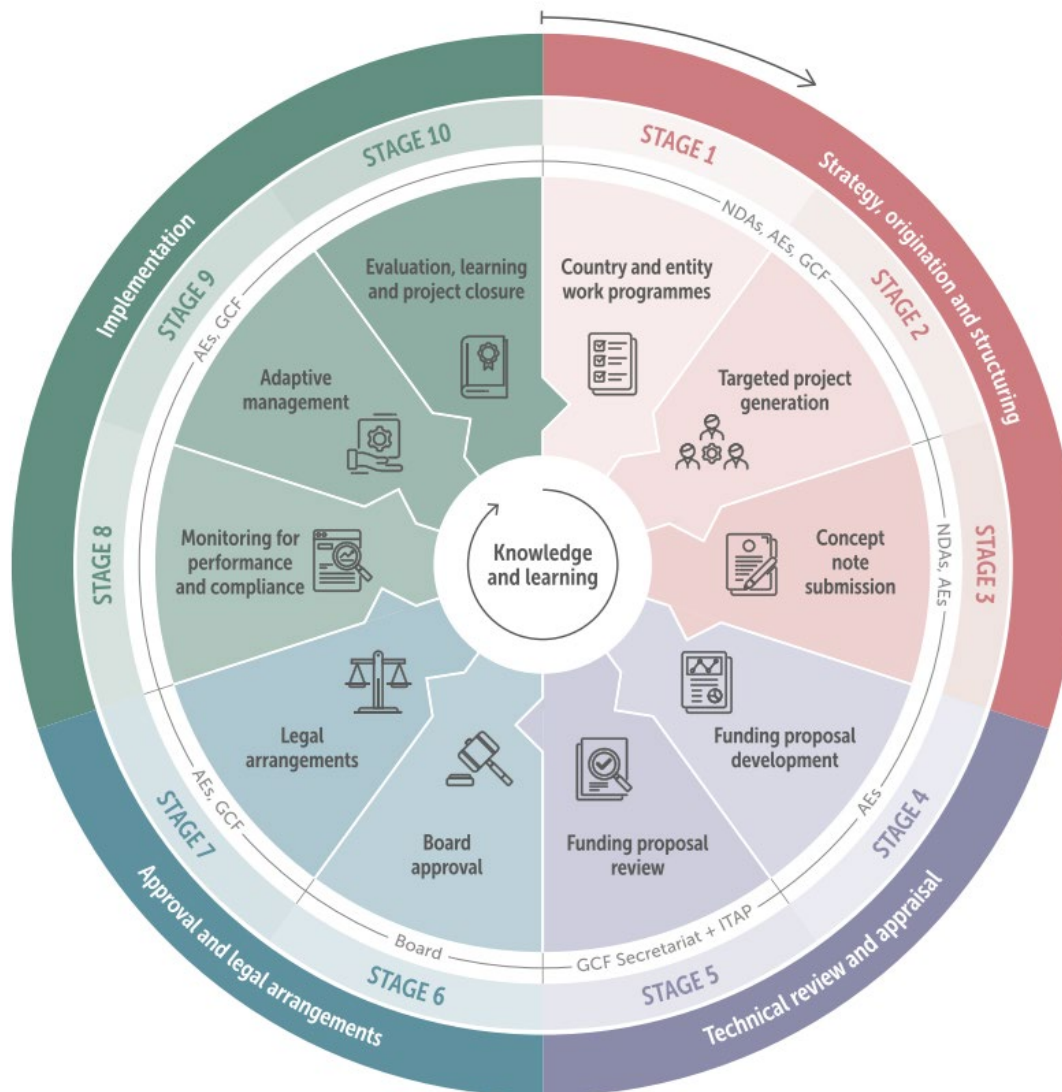


Figure 8. The steps to prepare, submit, and implement a project under GCF (GCF, n.d.b)

The GCF is transparent when it comes to communicating what they are looking for in an application. An independent technical advisory panel (ITAP) and the GCF secretariat assess the proposals they receive and give them a score based on how eligible and suitable the projects are. For the proposal development, it is important to reflect and consider the criteria GCF is evaluating. The main criteria are summarized below:

- **Coherence with GCF's investment criteria:** The fund assesses projects against six key criteria:
 - **Impact potential:** Quantitative and qualitative measures, such as GHG emissions reduction (mitigation) and climate resilience (adaptation).

- **Paradigm shift potential:** Ability of the project to drive change beyond the obtained funding, with considerations such as scalability, replicability, innovation, knowledge sharing, and enabling of regulatory frameworks.
- **Sustainable development potential:** Ensuring the alignment with the SDGs, demonstrated as co-benefits along social, economic, and environmental aspects.
- **Needs of the recipient:** Examining the need for financing, while assessing institutional capacity and the vulnerability of the relevant population and region.
- **Country ownership:** Alignment with the country's policies and NDC, and stakeholder engagement, including the NDA.
- **Efficiency and effectiveness:** Assessing the financial soundness of the project and its cost-effectiveness.
- **Alignment with GCF policies:** The projects are assessed based on how well they consider GCF policies, including the following policies:
 - This includes aspects like alignment to fiduciary standards (focusing on transparency, accountability, fair procurement, and ethical implementation), risk management, environmental and social safeguards, monitoring and evaluation (for guaranteeing performance, impacts, and outcomes to ensure achievement of intended objectives), gender policy, and legal standards.
- **Due diligence:** To ensure that the project is soundly designed, financially viable, and aligned with the GCF's requirements and standards, due diligence includes:
 - Conducting feasibility studies, building sound financial models, project programming, gender analysis, environmental and social studies, and no objection letters from the project's host country to reflect governmental endorsement.

When developing a project proposal, the aim is to obtain the highest possible score during the GCF secretariat and the ITAP assessment. Publications exist that showcase lessons learned from successful GCF applications to improve the quality of proposals (Climate Analytics, 2020) and provide recommendations (Acclimatise & CDKN, 2020). In the following, some suggestions and recommendations are summarized taken from the sources mentioned as well as from the experience of the authors in developing GCF proposals:

- Provide science-backed evidence consistently and conduct due diligence, where applicable. Use the best available data.
- Use a clear and ideally simple project set-up and design and avoid overly complicated project scopes to the possible extent.
- Provide information in a transparent and structured way including justifications of the approach, the project elements, and why information is being used in this way.
- Select methodologies from reputable sources for GHG accounting & monitoring methodologies to the extent possible, mention them, and justify choosing them or deviations applied.

- Conduct comprehensive barrier analysis and link the project design, business model, and incentive scheme directly to the barriers, along with how the project leads to overcoming the barriers.
- When possible, quantify the sustainable impacts of the project while clearly linking those impacts with SDGs, ideally in line with the country's strategies. Co-benefits beyond climate impacts add to the value of the project.
- To promote country ownership, ensure the alignment of the proposal with national plans, strategies, and circumstances, and provide references.
- Describe how the planned project will contribute to achieving some of the country's NDC's goals.
- Ensure multi-stakeholder engagement in all parts of the project, from planning to evaluation. Support can be obtained from the NDA and the AE.
- Include a gender action plan, addressing equitable opportunities and actions for women in all parts of the project, and clarify the actions to address vulnerabilities.
- A financial plan based on economic and financial analyses with the expected costs, and a detailed breakdown of the financial instruments to be requested from GCF, with the activities where they will be used alongside justifications of need. A financial model can be added to showcase the financial viability and cost-effectiveness of the project.
- Include theory of change (ToC) in the proposal to clarify its vision and expected long-term outputs and impacts. ToC is a framework that showcases how a project will achieve the planned outcomes, by narrating a logical order of changes brought on by the project, with risks, barriers, assumptions, and planned monitoring and evaluations.

While it is not mandatory to submit a concept note prior to the proposal, it is highly recommended.⁵ It is an opportunity to receive feedback and guidance from GCF, get a first indication of the eligibility and suitability of the underlying project, and reflect that feedback when developing the full proposal. A concept note could be submitted by an NDA without an AE, but it is recommended to identify the AE at an early stage.

After the proposal is submitted, the GCF secretariat reviews the proposal, and the Office of Risk Management and Compliance performs an appraisal, while ITAP performs a technical review before it gets compiled for review by the board of approval. Within the approval and legal arrangements step, the proposal must be approved by the GCF board. The board can share questions with the AE to be answered before the board meeting, which should be attended by an AE representative. In case the

⁵ Submitting a concept note is mandatory, if support is requested from GCF for the proposal development through their Project Preparation Facility (PPF).

GCF board approves the proposal, a funded activity agreement is negotiated and signed. After the agreement is signed, the project implementation phase can begin.

It is worth noting that GCF offers a simplified approval process (SAP) for projects with outstanding impact potential and minimal environmental and social risks, given that the required contributions from GCF do not exceed 25 million USD. Similar to the general process, AEs and NDAs can follow the SAPs for projects fulfilling the SAP criteria. The SAP improves the efficiency of the process, offers simpler application templates (GCF, 2022b), and may be specifically relevant for project types and contexts described in this guide (strong sustainable development impacts, comparably low emission reductions, LDC context, rural area with various barriers including resources and capacities).

5.3. Applying to the Mitigation Action Facility

The Mitigation Action Facility is a climate finance initiative supported by an international consortium of public and private donors such as Germany, the United Kingdom, Denmark, and the European Commission. By 2023, the Mitigation Action Facility has committed EUR 826 million and leveraged an additional EUR 1.8 billion to support 60 mitigation projects worldwide (Mitigation Action Facility, 2024a). The Mitigation Action Facility's mission is to foster transformative climate actions that achieve measurable emission reductions and drive sustainable development in partner countries. The Mitigation Action Facility typically funds projects in the range of EUR 5–25 million, with larger amounts considered for projects offering substantial additional benefits. The application process usually spans about 15 months, with project implementation periods between 3 to 5,5 years (NDCP, 2024b). Annual Calls for Projects are usually announced towards the end of the year. For example, the 2025 call has been open from November 19, 2024, to February 19, 2025. A brief overview of general requirements for eligible projects under the facility are described in *Figure 9*.

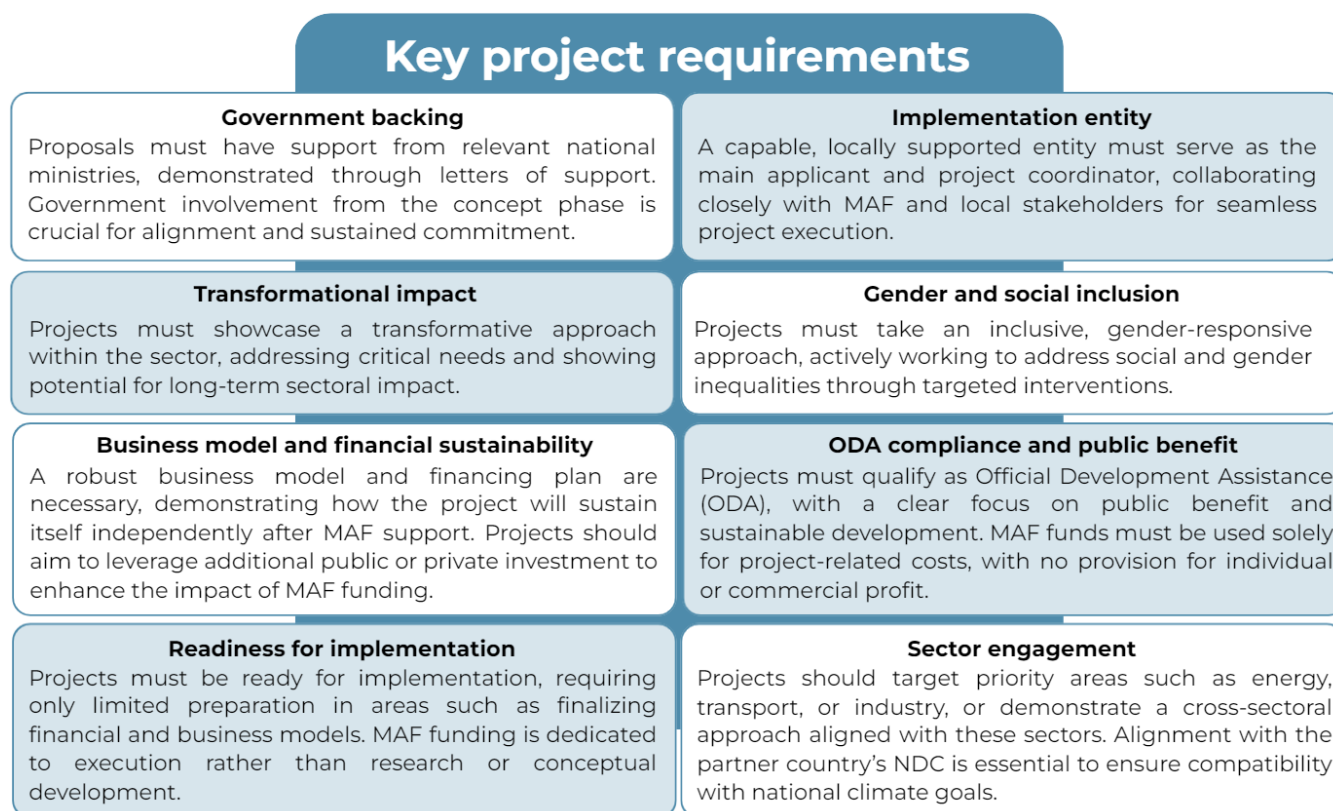


Figure 9. Key project requirements for eligibility under the Mitigation Action Facility (Source: Authors)

The application process can be differentiated into the following phases, with the timeline in *Figure 10*:

- 1. Concept phase:** Applicants submit an initial concept via the Mitigation Action Facility’s online platform in line with information announced in the respective Call for Projects, detailing the intervention's rationale and objectives. All concepts will be evaluated by the Technical Support Unit of the Mitigation Action Facility. Successful concepts advance to the Outline Phase and the Mitigation Action Facility will request the submission of Outline documents.
- 2. Outline phase:** Approved concepts need to be developed into more detailed Outlines (Outline template to be used including required Annexes for e.g. financial models, emissions reduction estimates, and ministry endorsements). Additional support may be provided upon request for applicants with limited Mitigation Action Facility application experience. It should be noted that the time between notification to submit an Outline has been shortened (about 2 months), so it is recommended to pre-consider this when developing a concept and being prepared in terms of resources and data, etc. needed for Outline development.
- 3. DPP / Proposal Phase:** In case the Outline is positively evaluated by the Mitigation Action Facility, the projects enter a 10 to 15-month proposal preparation period, during which a final and comprehensive proposal needs to be developed. Financial and technical support is being offered to the project team/applicant during the DPP. After proposal submission, the proposals undergo an assessment by the Technical Support Unit of the Facility with support from external

evaluators. Based on the assessment and recommendations, the Facility's Board selects projects to receive funding for implementation.

4. **Implementation phase:** The Implementation Phase is structured to ensure swift project execution, beginning with an initial stage focused on establishing essential contracts, agreements, and pre-defined milestones for both financial and technical components. This initial stage, limited to 18 months with minimal technical assistance, allows the Mitigation Action Facility Board to evaluate progress and potentially discontinue support if milestones are not met. Following this, full-scale project implementation begins, aimed at delivering results within a maximum of 66 months in total.



Figure 10. The application process to the Mitigation Action Facility (Source: Authors)

Given the rigorous, highly selective nature of the Mitigation Action Facility's evaluation process, only a small percentage of submitted concepts usually progress to the next phase. Projects that succeed typically showcase robust government interest, implementation readiness, transformative potential, local support, and institutional backing including strong institutional capacity within the implementing entity.

The Mitigation Action Facility maintains a stringent oversight at each project application phase, ensuring that all projects meet high standards of effectiveness and impact, ultimately supporting the Mitigation Action Facility's mission to drive sustainable climate action. Across all phases, the projects are evaluated against pre-determined selection criteria, which ensure that the most ambitious and transformational projects would be approved for funding and, thus, implementation.

The evaluation of concepts focuses on the general **eligibility of the project**. Criteria include:

- Timely submission (i.e. by the closure of the Project Concept Phase of a Call for Projects)
- Focus on one of the three priority sectors – energy, industry, or transport; or a cross-sectoral project linked to one of the priority sectors
- Completeness of information
- Eligibility of the country to receive ODA according to the OECD Development Assistance Committee list.
- Funding volume requested from the Mitigation Action Facility for implementation is in the range of EUR 5-25 million excluding DPP funding

In case of passing the eligibility check, both concepts and outlines are evaluated against a set of ambition and feasibility criteria of the respective Call for Projects. For the proposal evaluation (at the end of the DPP) phase, the same criteria are applied and assessed, but with the feasibility criteria being emphasized. Detailed information on selection criteria is available in the General Information Document existing for each Call for Projects, accessible from the Mitigation Action Facility's website.

5.4. Specific considerations under carbon markets (example of Article 6.2 cooperation)

In case carbon finance is considered as a potential funding source, certain aspects need to be ensured comparable to other climate finance sources described in the previous section. This section provides a brief overview of the most relevant aspects to consider when seeking carbon finance. Due to the limited scope of this paper, the focus is on Article 6.2. due to its relevance to assist e.g. LDCs in contributing to achieving their NDCs targets and raising the mitigation ambition. Many countries are already engaging in Article 6.2 with projects being implemented through bilateral cooperation, while the Article 6.4 mechanism (also called PACM) is only becoming fully operational in 2025.

The actual steps and processes for developing mitigation activities under Article 6.2 largely depend on the countries involved. However, typically the process for developing a project under Article 6.2 can be differentiated into three phases: screening and identification phase, activity idea/concept, and the detailed activity design and approval phase.

5.4.1. Screening and identification phase

Assuming a project idea exists already, the first step is to assess whether the activity and the country in which the activity would take place, are eligible according to Article 6 requirements and whether the host country has a sufficient level of Article 6.2 readiness (see section 3.2 for further information) and the activity complies with the host country's requirements for engaging in Article 6.2., that bilateral agreements with other countries are in place, and alignment to the host party's (conditional) NDC is ensured. The screening is an important step when considering engaging in Article 6.2.

5.4.2. Activity idea/concept

If the screening is successful and the formal conditions are fulfilled the applicant may move on to develop the concept or Mitigation Activity Idea Note (MAIN) of the mitigation activity. This is common practice in most involved countries but may not be required by all Parties involved. It is usually a short document (approx. 10-25) pages summarizing the main information of the mitigation activity to inform the involved Parties and allow them to assess it against the country's priorities and criteria. There is no generally applicable official template that can be used for developing the MAIN. Different countries or institutions involved provide different templates or do not provide a template at all. However, typically MAIN documents include information about at least the activity scope and design (also see Chapter 4 Step 1), approach, methodology, and quantification of expected GHG emission reductions, other

impacts and safeguards, business model and financing needs and mechanisms, institutional arrangements and monitoring and reporting procedures. This document provides the basis for the host and potential buyer country to evaluate the activity or ask for additional details and clarification. The host party may issue a “letter of no objection” or a “letter of intent” indicating that it is generally willing to authorize any credits generated through the activity to be transferred internationally.

It must be noted that Article 6.2 specific requirements e.g. in determining the GHG baseline and complying with standards for safeguards and alignment to the NDCs need to be addressed and go beyond what is required for other climate finance applications (e.g. MAF, GCF). At the same time, most other information (e.g. project scope, business model, institutional arrangements, mitigation impact) are very similar.

5.4.3. Detailed activity design and approval

For seeking approval of the mitigation activity, a MADD needs to be developed. It can be built on the MAIN but is typically much more comprehensive and requires more thorough information and justifications. Besides a more detailed activity overview (scope, technology, objectives), GHG mitigation approach, financial mechanisms and business model, institutional arrangements, and monitoring and reporting plan, some Article 6 specific requirements need to be addressed as well. Those include:

- Ensuring the additionality of the activity through appropriate tests and demonstrations according to the requirements of the Parties involved (e.g. investment analysis, regulatory analysis, prior consideration of using carbon credits, etc.)
- Selecting suitable methodology(ies) for quantifying emission reduction
- Setting a conservative baseline⁶ below business as usual to ensure ambition
- Assessment of potential negative environmental and social impacts and provision of safeguards
- MRV system for GHG emissions and contributions to sustainable development.

⁶ “The baseline for a mitigation activity should describe what would happen if the proposed mitigation activity was not implemented, and what would be the volume of emissions that would occur in the absence of the proposed activity.” (GGGI, 2023: 39)

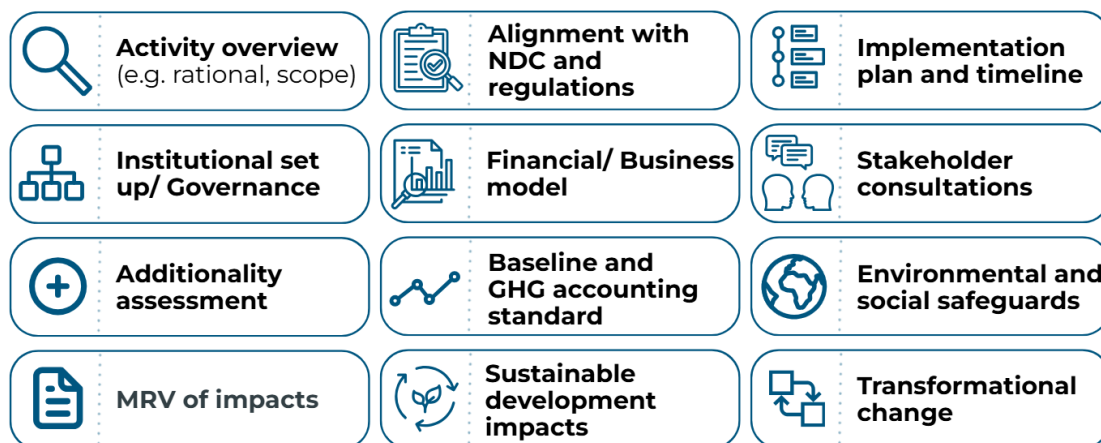


Figure 11. Requirements for projects under Article 6 (Source: based on GGGI 2023)

Figure 11 provides an overview of aspects that are typically included in a MADD including new elements compared to CDM project design documents (GGGI 2023). The MADD document is the basis for validation of the activity by accredited third parties and will most likely be considered as a central document and basis by the host country when deciding on offering a letter of approval and together with documents verifying the achievement of mitigation outcomes, for authorization of mitigation outcomes achieved. Host country authorization is crucial to allow for the international transfer of credits⁷.

⁷ With the authorization of mitigation outcomes, the host country commits itself to apply a corresponding adjustment to its own emission balance. By not counting the emission reductions to the host countries target, double counting of mitigation outcomes is avoided. The authorization might happen at or after the issuance of credits but is necessary to enable the transfer of ITMOs (Michaelowa et. al 2024).

6. Conclusion

This guide supports entities looking for funding for sustainable cooling projects by identifying and assessing climate finance options. It helps stakeholders navigate through funding opportunities and develop successful applications. By highlighting the unique challenges faced by projects in difficult circumstances, such as those in rural areas, involving small appliances, or located in LDCs, the guide seeks to raise awareness of funding institutions for their specific needs. The following key messages aim to pave the way to enable project proponents to better access climate finance to advance sustainable cooling solutions for communities and countries most in need.

Harness green cooling opportunities

Enhancing access to green cooling solutions can unlock various co-benefits and transform lives by improving food security, nutrition, farmer incomes, and economic equality while empowering women and disadvantaged groups through equitable resource access. Sustainable cooling fosters economic prosperity in agriculture and avoids reliance on emissions-intensive technologies, aligning with SDG goals.

Overcoming existing barriers to unlock green cooling

By working on reducing barriers to sustainable cooling, most prevalent in LDCs, finance streams can be improved. Barriers include high upfront costs, limited capital access, and investment uncertainty related to unproven or less-known technologies. Limited technology access, unreliable data, and institutional challenges such as insufficient resources, expertise, and coordination hinder progress, monitoring, and effective implementation of sustainable cooling solutions.

Familiarize yourself with climate fund requirements to navigate the process

Climate funds often require demonstrated impacts (e.g., emission reductions), high ambition, and extensive resources, skills, and bureaucracy. Application processes can be demanding, resource-intensive, and require specific skills and capacities. Identifying the right funding source for your project and understanding the needs and requirements, helps to manage expectations and ensure eligibility of the underlying project idea to be submitted to a funding source. Reviewing successful examples from similar contexts (e.g., SSA, LDCs, rural areas, dispersed technologies) can provide valuable insights and inspire confidence in navigating these challenges effectively. Stakeholder engagement is crucial throughout the process to ensure successful project design as well as funding application processes.

Explore carbon financing avenues

Carbon markets offer LDCs a potential additional opportunity to attract investment and finance mitigation activities that reduce emissions and support sustainable development. By mobilizing public and private finance globally, these markets help countries achieve conditional climate targets. However, significant time, resources, and readiness are needed for Article 6 participation, aligning with NDC priorities and existing monitoring frameworks. A major challenge is the upfront financial barrier

for project design, external validation, registration fees, and activity implementation. Overcoming these barriers is essential to fully leverage carbon market potential and ensure alignment with national climate and development goals.

Identify a suitable funding source that matches your project

The step-by-step process outlined in this guidebook is designed to assess if a specific project idea has a chance of receiving climate finance and how to better assess the effort and opportunities involved before putting in all the work. It includes the following steps:



Figure 6. Steps to identify the most suitable funding sources (Source: Authors)

Know your funds application process and requirements

Once a fund has been identified it is crucial to understand the funding application processes, requirements, templates, and timelines. Successful applications are contingent on complete and timely navigation of the steps required by funds, aligned with their respective goals. Carefully review the available guidance on the fund's website (e.g. project evaluation matrix, procedures, investment criteria) before submitting your application. Some funds also offer online webinars to guide applicants through their requirements.

Be aware of synergies and differences across funding sources

While different climate finance sources have different requirements, evaluation criteria, and procedures to follow, there exist also synergies across funds that one should be aware of. Chapter 5 describes the general steps for applying to the GCF, the Mitigation Action Facility and accessing carbon finance through Article 6 of the Paris Agreement and describes major differences and synergies. This can help to build capacities and identify available expertise for developing a funding proposal. For example, there may no experience with submitting a proposal to the Mitigation Action Facility, but with the GCF. That expertise could certainly help to develop a proposal for other climate funds. However, fund specific aspects would still need to be considered. It is recommended to be aware of such synergies and specific requirements to maximize the effective utilization of resources and increase chances for a successful application.

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