Initial Risk Management Framework: Methodology to Determine and Define the Fund's Risk Appetite

GCF/B.10/07

25 June 2015

Meeting of the Board
6-9 July 2015
Songdo, Republic of Korea
Provisional Agenda Item 19*

* The agenda item number will be determined when the final sequence of items in the provisional agenda is confirmed by the Co-Chairs.

Recommended action by the Board

It is recommended that the Board:

(a) Take note of the information presented in document GCF/B.10/07 *Initial Risk Management Framework: Methodology to Determine and Define the Fund's Risk Appetite*; and

(b) Adopt the draft decision presented in Annex I to this document.

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Methodology to Determine and Define the Fund's Risk Appetite

I. Introduction

1. At its seventh meeting on 18-21 May 2014 in Songdo, Republic of Korea, the Board requested the Secretariat, in consultation with the Risk Management Committee, to prepare an analysis of the Fund's potential risk appetite under different key assumptions as part of its financial risk management framework (decision B.07/05, paragraph (e)).

2. At its ninth meeting on 24-26 March 2015 in Songdo, Republic of Korea, the Board took note of document GCF/B.09/13 *Initial Risk Management Framework: Survey of Methodologies to Define and Determine Risk Appetite* (decision B.09/06, paragraph (a)).

3. In addition, it requested the Secretariat, in consultation with the Risk Management Committee, to present a methodology for determining the initial risk appetite of the Fund for approval by the Board (decision B.07/05, paragraph (e)).

4. Furthermore, the Board requested the Secretariat to outline various scenarios, using the methodology for determining the initial risk appetite once approved, which will support the Board in the setting of the Fund's initial risk appetite.

II. Linkages with other documents

5. This document has linkages with the following document:

Level of Concessional Terms for the Public Sector (document GCF/B.10/06).

III. Objective and background

6. The objective of this document is to propose a risk appetite methodology (RAM) from which to set the risk appetite (RA) of the Green Climate Fund (the Fund). This methodology encompasses the following criteria:

(a) The role of the risk appetite framework (RAF);

(b) A description of the elements and overall strategic process to be followed in order to establish the risk appetite of the Fund;

(c) A review of the Fund's business model and its key modalities;

(d) An inventory of the risks faced by the Fund; and

(e) The proposed metrics by which to measure these key risks.

IV. Role of the risk appetite framework

7. RA is the overall level of risk that an organization is willing to take in order to achieve its objectives. In the case of financial institutions, the Financial Stability Board has defined risk appetite as "the aggregate level and types of risk a financial institution is willing to assume within its risk capacity to achieve its strategic objectives and business plan".[1] This definition is broad enough so that it also covers the concept of RA for an institution such as the Fund, which seeks a strategic climate objective, but which also needs to have financial and non-financial risk

[1] Financial Stability Board, *Principles for an Effective Risk Appetite Framework*, 18 November 2013.

management strategies and processes in place. RA is generally expressed in terms of the risk appetite framework as contained in Table 1 below.

Table 1: Risk appetite framework

Risk targets	Desired amount of risk
Risk tolerances	Allowed volatility around those targets
Risk limits	Risk thresholds which should not be exceeded and which would trigger a corrective action

8. A common misconception is that risk is to be avoided. That is not the case: any entity needs to take risks in order to fulfil its objectives. This is particularly the case for the Fund: an organization seeking to achieve a paradigm-shift in the global response to climate change has to engage in truly transformational activities and this implies assuming risks. This assumption of risks results from the implementation of the Fund's RA after considering all the risks to which the Fund may be exposed and the probability and impact of any of these risks materializing.

9. The importance of having an RAF has increased after the recent global financial crisis. Since that time, most international and domestic regulatory bodies have required financial institutions to develop an RAF as a mechanism by which their boards and senior management teams can explicitly consider all the risks faced by their institutions, and can make a conscious decision in this regard linking risks and strategic objectives. The RAF is therefore an essential component of an institution's corporate governance arrangement.

V. Proposed risk appetite methodology

10. There are five steps in completing an RAF. The methodology for this is presented in the figure below.

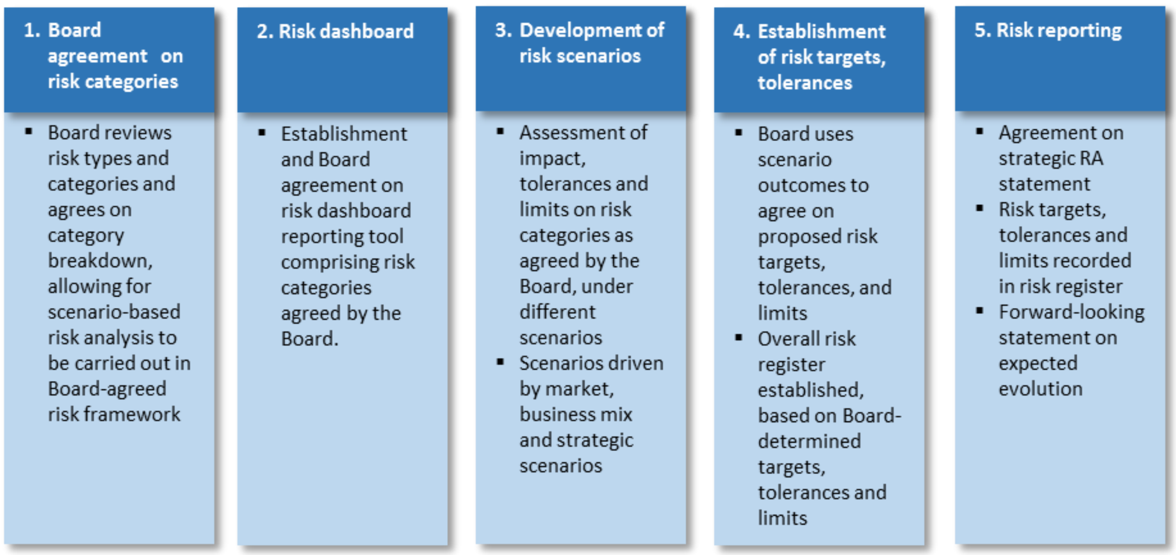

Figure 1: Proposed risk appetite methodology

11. The RAM involves two key initial decision points for the Board: approval of the risk categories and dashboard, and approval of risk targets, tolerances and limits. This document aims to support the Board in its consideration of the first of these decision points (steps 1 and 2 of the RAM). The RAM process involves the following:

(a) Review and approval by the Board of the risk categories to be tracked. These risk categories will include financial as well as non-financial risks (for example, failure to meet the Fund's results management framework as adopted by the Board (decision B.07/04));

(b) Review and approval by the Board of the risk dashboard that will be used to report risk in real time in future. The risk dashboard will summarize the Fund's exposure to each risk category;

(c) The risk dashboard will be used to develop a risk register, in consultation with the Risk Management Committee. This register will break down and catalogue each risk category and subcategory into their various drivers/subcomponents and will outline the Fund's exposure to each risk subset;

(d) The risk register will be used to develop scenarios, in consultation with the Risk Management Committee, in which consideration will be given to potential material occurrences that could have an adverse impact on the Fund given its exposure to the risk categories and their respective subcomponents. Table 2 illustrates some of the scenarios that could be considered;

(e) A review of these scenarios will enable the Board to agree on targets, tolerances and limits for each risk category. *Targets* are the ex-ante values that the Fund will seek to achieve for each risk category; *tolerances* are the variability around these targets that the Board is willing to accept; and *limits* are the values for the risk category that the Board has determined would constitute a material risk to the Fund's solvency and viability. Board-determined targets, tolerances and limits for each risk category would be recorded in the risk dashboard. Upon approval of the targets, tolerances and limits, credit and investment manuals and other guidance, software, and tools can be developed in order to embed the risk framework into the day-to-day management of the Fund; and

(f) The RAF process is a loop. The Fund would need to conduct risk control and self-assessment[2] – a process of identification, assessment, effective internal control and the creation of action plans – in relation to high-risk events, in a timely manner, in order to ensure the robustness of the risk framework. Such periodic reporting from the Secretariat will enable the Board to review the evolution of the risk borne by the Fund and to make the necessary adjustments. The risk monitoring and reporting management system adopted by the Board under the initial financial risk management framework (decision B.07/05) will be used for this purpose. The aforementioned risk register will be used to determine and catalogue the Fund's level of risk exposure to each risk category and its related subcomponents. Moreover, the risk dashboard will serve to highlight achievements compared to targets and any breaches in limits.

[2] Under, for example, the self-assessment framework of the Committee of Sponsoring Organizations of the Treadway Commission.

Table 2: Illustrative list of events to be considered when developing scenarios

Financial events	Non-financial events
• Non-performing loans of the Fund exceed the cushion provided by loan contributors; • Negative return on equity investments; • Encashment of promissory notes is rescheduled creating a liquidity crunch in light of the Fund's approved commitments; • Concentration limits on accredited entities (AEs) are exceeded or some AEs become insolvent; and • Disbursement rates of projects occur at a much faster pace than expected thus leading to liquidity issues	• Climate impact objectives are not fully met (e.g. reduction in CO2 emissions for certain projects is lower than expected); • Business continuity disruption at the Fund or at the Interim Trustee facilities; • Social or environmental safeguards fail at a major project funded by the Fund; and • Defaulting loan recipients successfully challenge the Fund's legal documents in international arbitration and the Fund is unable to recover its losses

VI. Elements considered in the development of risk categories

12. Setting the Fund's RA requires finding an optimal risk level that avoids excessive or very low risk in undertaking climate change related investments. Excessive risk appetite could endanger the long-term viability of the Fund and could also lead the Fund to invest in projects which would ultimately have only a limited impact on climate change adaptation and mitigation (e.g. if a disproportionate amount of projects are related to non-tested technologies which turn out to be ineffective). Alternatively, a very low risk appetite could result in a suboptimal use of resources, ultimately leading to limited incremental impact on climate change, as the Fund would not invest in riskier, catalytic projects or might underinvest in the least developed countries or small island developing States. In proposing this RAF, the Fund might wish to take into account, inter alia, the following:

(a) The Fund's strategic objectives established in the Governing Instrument. This enables the contextualization of the risk discussion (i.e. what is at risk);

(b) The Fund's business model, including its sources of funding (grant, capital and concessional loans); its distribution model and its related dependence on AEs and national designated authorities (NDAs); and the financial instruments through which it can deploy investments in order to support beneficiaries (grants, concessional loans, equity and guarantees). This enables the identification of sources of risk; and

(c) A forward-looking statement on the expected evolution of risk in the Fund. The statement could include the setting of an overall shadow credit rating that the Fund may target (e.g. 'BBB') and an expected success rate in meeting the Fund's investment criteria. The uniqueness of the Fund implies the absence of a comparison portfolio or a peer group that could be used as a reference. Therefore, a shadow target rating enables the setting of a benchmark-based risk appetite objective for the Fund to aim at.

6.1 Overall strategic objective

13. The main driver of an organization's risk appetite is its strategic objective. In the case of the Fund, its Governing Instrument defines the purpose of the Fund as follows: "the Fund will promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change".[3]

[3] Paragraph 2 of the Governing Instrument (decision 3/CP.17, annex, paragraph 2).

6.2 Fund's business model and associated risks

6.2.1 Three key elements of the business model

14. The Fund's contributions consist of grants, capital and loans. Any event that puts this funding at risk would constitute a key risk for the Fund. Such events could include:

(a) A material economic crisis that hits a contributor country and that would jeopardize its ability to honour its commitment to the Fund; or

(b) The occurrence of material fraud or financial loss at the Fund which would result in contributors being dissuaded from honouring their commitments and/or making future commitments.

15. These risks are accentuated by any "concentration factor" which would arise if the Fund were to be overly reliant on a few major fund providers/contributors.

16. The Fund makes investments with and through AEs, with the approval of NDAs. Therefore, the Fund's ability to meet its strategic objective would be challenged materially if, for example:

(a) It fails to accredit the optimal balance of diversified AEs;

(b) The AEs it accredits are unable to bring forward projects that are in line with the Fund's strategy;

(c) AEs fail to execute and/or safeguard the Fund's investments with the appropriate level of due diligence; or

(d) NDAs do not engage with the Fund and/or AEs, and become a bottleneck in the project cycle. These risks are also accentuated by any "concentration factors", whereby the Fund is overly reliant on a few AEs.

17. The Fund's investments are made using grants, concessional loans, senior debt, subordinated debt, equity and guarantees. The inability of recipients to honour their expected commitments constitutes a risk for the Fund. These commitments include honouring the financial terms of investments as well as the Fund's six investment criteria. For example, a grant recipient that fails to remove the tons of carbon dioxide equivalent to which it committed constitutes no less of a risk than a loan recipient that fails to do the same or to repay its loan.

6.2.2 Funding mechanisms

18. All sources of funds give rise to the three following types of risk**:**

(a) *Encashment risk*, where commitments are not converted into paid-in cash;

(b) *Concentration risk* whereby any one contributor/fund provider is responsible for an excessive share of funding, for example more than 10 per cent. The failure of any such fund provider to honour its pledge could result in a material liquidity and solvency event for the Fund. It could also give rise to the withdrawal of other smaller fund providers through a domino effect; and

(c) *Foreign exchange risks* arising from mismatches between the contribution currency, the Fund's holding currencies and the currencies in which funds are provided to recipients.

19. Table 3 below provides additional risk considerations that are particular to each form of funding.

Table 3: The Fund's sources of funding

Source of funding	Key rules	Some key related risk implications
Grants	• Provided in cash or promissory notes in any currency. Immediately converted to a United States dollars (US$) account when cash payment is received No repayment obligation • Resources can be used to fund any financial instrument provided by the Fund as well as administrative costs	• Everything else being equal, the financial risk appetite in the use of these resources is higher. No repayments are required
Capital	• Capital contributors, unlike grant contributors, may receive a potential return of the contribution, in whole or in part, upon wind-up of the Fund, depending on the availability of such funds at the time • Provided in cash or promissory notes in any currency. Immediately converted to US$ when cash payment is received	• Everything else being equal, financial risk appetite for the use of these capital resources should be lower than for the use of grants because of the need to invest in reflow-generating instruments, but higher than for loans
Loans	• Gradually drawn-down in any of four currencies (US $, pounds sterling, Japanese yen, euros), to be repaid in the same currency • Up to a 40-year term, up to one per cent interest per annum • Providers of loans also provide a "cushion" which acts as a first loss reserve • These resources can only be used to provide loans that are less concessional than those received by the Fund	• This part of the Fund portfolio aims to be self-sustaining: revenue generated by loans extended and undisbursed loan contributions, net of losses covered by the "cushion", and should be sufficient for the Fund to repay its loan contributions • In cases where losses on loans extended exceed the cushion, lenders to the Fund do not have recourse to grant and capital resources
Internal resources: reflows and investment income	• These resources can be used as needed by the Fund in fulfilling its mandate once the original commitments to contributors have been fulfilled	• Reflows are tied to the credit risk the Fund takes and, along with expected investment income, they need to be appropriately modelled to fully forecast the Fund's commitment authority

6.2.3 Fund's distribution strategy

20. The Fund relies on local, regional and international accredited entities in order to achieve its investment objectives. These entities are responsible for originating, structuring and executing the Fund's investments. They are also responsible for ensuring:

(a) That each project/programme is in line with the Fund's six investment criteria; and

(b) That the Fund's investments are aligned to local climate and economic strategies, and that they are endorsed by NDAs.

21. The Fund's strategic mission and/or financial results could be jeopardized if:

(a) Accredited entities fail to meet their expected obligations; and/or

(b) The Fund places an overreliance on a concentrated and select set of AEs. Any one AE's failure to meet the Fund's objectives would result in a material adverse effect for the Fund.

22. In addition, the Fund relies on the positive engagement of NDAs. Such authorities are relied upon to provide guidance to AEs with respect to national strategies and climate-related priorities so that the Fund's resources are deployed in line with country ownership.

23. Therefore, the Fund is heavily reliant on good relationships with NDAs and its strategic mission could be jeopardized if NDAs do not engage positively with it and its AEs.

6.2.4 Use of Fund resources

24. Some of the key characteristics of the financial instruments to be used by the Fund (decision B.09/04) have risk implications to be considered when establishing the RA (Table 4). For example, while grants provide the least concessional leverage of all the Fund's financial instruments (see document GCF/B.10/06, *Level of Concessional Terms for the Public Sector*), grant instruments should be the preferred options to support projects or programmes with higher risk, which are non-revenue generating, or for highly debt-distressed countries which would have difficulty in repaying loans.

Table 4: The Fund's financial instruments

Instrument	Key rules	Risk implications
Grants	• With or without repayment contingency	• Grant funding should be directed to higher risk projects/programmes, those which are non-revenue generating, or for highly indebted low-income countries
Concessional loans to the public sector	• Longer maturities and lower interest rates to specific project types (e.g. low project viability); specific country groupings (e.g. low-income economies, least developed countries, small island developing States); and targeting vulnerable communities as approved by the Board (see document GCF/B.10/06)	• This approach is consistent with the strategic mandate of the Fund, however, it needs to be recognized for risk management purposes
Loans, equity and guarantees to the private sector	• Terms tailored to cover the incremental cost or risk premium required to make the investment viable	• Case-by-case pricing; aligned with market-driven principles and minimal concessionality

6.3 Setting a shadow credit rating as a risk statement

25. The Fund may consider that in seeking to accomplish its mandate in supporting innovative, catalytic projects and programmes it could seek to:

(a) Obtain satisfactory investment criteria results in a minimum percentage of its projects and programmes, for example in at least 85 per cent; and

(b) Target a shadow credit rating equivalent.

26. The target credit rating represents a *quantitative* element upon which the RA of an organization can be anchored. Particularly for financial risks, the target credit rating drives the type of activities in which the organization is willing to engage. A credit rating is a proxy for an organization's probability of insolvency. Global and large regional multilateral financial institutions seek an 'AAA' rating; this is the best possible rating, generally associated with a very low likelihood of default (in the order of 0.01 per cent or less per annum). This enables such institutions to raise money cheaply in the financial markets but makes them risk-averse in their investment behaviour. In order to achieve the catalytic role that the Fund is expected to play, the Fund must be able to take measured risks and therefore to have a higher risk appetite than, for example, existing multilateral development organizations.

27. A shadow credit rating could be used as a reference or guide in developing financial policies, including investment and credit guidelines with respect to credit and equity investments. The term “shadow” denotes the fact that the Fund is not expected to issue market-related securities, for which it would need to seek an actual credit rating. However, a target rating is useful in defining the Fund’s internal risk management processes. If the Fund were, for example, to target a shadow BBB rating, this would guide the level of overall losses that the Fund would tolerate: a BBB entity would be expected to have a one-year probability of insolvency of about 0.5 per cent. Such probability could be used as a reference when setting quantitative risk appetite targets (e.g. with respect to the Fund’s level of non-performing loans).

28. The proposed shadow credit rating could be accompanied by a targeted level of success as relates to achieving targeted investment criteria results in at least 85 per cent of the cases when funding adaptation and mitigation projects and programmes. This would ensure that the Fund’s risk focus would be on financial, operational and climate impact as defined by the investment criteria.

VII. Inventory of risks faced by the Fund

29. This section outlines the key risks faced by the Fund as a building block to the Fund’s risk dashboard. It takes into consideration the Fund’s business model and builds on document GCF/B.07/05 *Financial Risk Management Framework* and document GCF/B.09/13 *Initial Risk Management Framework: Survey of Methodologies to Define and Determine Risk Appetite*.

30. The categories and subcategories of risk discussed below are not exhaustive and should be reviewed on an annual basis so as to account for the different stages of the Fund’s evolution.

31. The principal non-financial risks identified at this early stage of the Fund are strategic risk; reputational risk; operational risk; legal risk, and compliance risk. The principal financial risks identified are investment risk; funding risk; market risk; and liquidity risk.

32. Each subcategory is to be further defined and broken down in the risk register. Risk targets, tolerances and limits can be set through the exercise of quantifying and building scenarios around the elements that make up each of the subcategories.

33. One of the important categories of risk the Fund will experience is country risk. This category has not been broken out into a separate section but is comprehensively covered in the other categories of risk described in sections 7.1 and 7.2 below. For example, country risk that takes the form of political risk (i.e. the risk that a government nationalizes or expropriates a project supported by the Fund, or blocks convertibility or transferability of funds) is covered under both the legal risk category (contractual and non-contractual risk) as well as the monetary risk category because of the financial impact on the AE’s performance in the Fund portfolio. Similarly, regulatory risk (the risk that changes in local laws or regulations will have a negative impact on an investment supported by the Fund) is covered under legislative risk in the same legal risk category. Risks resulting from a change in the government’s priorities (e.g. due to a change in government), with a resulting negative impact on a project supported by the Fund, would be covered under the strategic risk category (specifically under country ownership). In this manner all aspects of country risk are covered in the sections below.

7.1 Non-financial risks

7.1.1 **Strategic risk**

34. Strategic risks are those that could impede the achievement of the Fund’s strategic objectives of promoting “the paradigm shift towards low-emission and climate-resilient development pathways”.

35. The key sources of strategic risks for the Fund (Table 5) include climate impact risk; concentration risk on select AEs; failure to build an optimal portfolio of projects/programmes as defined by the Fund's initial results management framework; and failure to support the necessary level of country ownership of projects/programmes.

Table 5: Indicative list of strategic risk sources

Strategic risk subcategories	Description
Climate Impact & Results risk	Failure to deliver the expected climate impact as defined by the Fund's objectives, investment criteria and the results management framework
AE concentration risk	Concentration on a limited number of AEs that fail to generate the required balanced (mitigation/adaptation, geographic, sectorial) pipeline of projects/programmes
Integrated portfolio management risk	Failure to build an optimal portfolio of projects/programmes as defined by the Fund's initial results management framework
Country ownership	Failure to develop a portfolio of projects and programmes that are fully aligned with country priorities and strategies; that foster the involvement of local actors; and that respect the IMF/World Bank Joint Debt Sustainability Framework.

7.1.2 Reputational risk

36. Reputational risk refers to risks arising from negative perceptions, opinions and beliefs that the Fund's existing and potential stakeholders (e.g. accredited entities, NDAs, the Board, the Interim Trustee, the Secretariat or civil-society organizations) may hold based on their experience with or expectations of the Fund.

37. Reputational risk can materially affect the Fund's ability to maintain existing or to establish new, business or strategic relationships, to achieve its strategic objectives and to garner continued access to sources of funding.

38. Initially, the risk dashboard should report on issues negatively affecting the perception of the Fund by its key stakeholders. This should include the monitoring of media reports; and periodic surveys among AEs, NDAs, contributors and civil-society organizations.

Table 6: Indicative list of reputation risk sources

Reputational risk sources	Description
Stakeholder perception of how the Fund conducts business	Events or issues that have a material adverse effect on the Fund's credibility with contributors, national designated authorities (NDAs), accredited entities (AEs) or civil-society organizations This could include the Fund being perceived as: (a) Having no additionality; (b) Lacking transparency; (c) Being overly bureaucratic and too slow; (d) Not adhering to country ownership and priorities; (e) Having become or being at risk of becoming insolvent; and (f) Having governance issues relating to beneficiaries, AEs, NDAs, or the Board or Secretariat.
Stakeholder perception of unexpected shocks	Adverse publicity that occurs as a result of fraud and corruption, implementation failure (for example, a Fund project that infringes on human rights) or other shocks

7.1.3 Operational risk

39. Operational risk is the risk that arises due to inadequate or failed internal processes, human resources, and systems or problems caused by external events. The key operational risks for the Fund are categorized as fiduciary, staffing and business disruption risks (Table 7).

Table 7: Indicative list of operational risk sources

Key operational risk	Description
Fiduciary risk	Risks relating to funds not being used for their intended purpose such as the misuse of funds due to: (a) The lack of internal controls in administrative and operational procedures; (b) Poor management of accredited entities, executing entities and national designated authorities; and (c) Internal or external fraud.
Staffing risk	Risks relating to recruitment, retention and succession planning as well as integrity and morale among the Fund's staff
Business disruption risk	Risks arising from the disruption of business due to catastrophic events or system failures (hardware, software, telecommunications or wars)

7.1.4 Legal risk

40. Legal risk for the Fund is the risk of loss caused by defective transactions, penalties or sanctions originating from lawsuits filed against the Fund, sanctions pronounced by a regulatory or government body, failure to take appropriate measures to protect assets owned by the Fund, and changes to legal frameworks.

41. Table 8 summarizes the key legal risk types. The understanding of the role of risk indicators and the development of a more nuanced approach should occur as the Fund evolves and increases the level of sophistication it applies to the risk management process.

Table 8: Indicative list of legal risk types and description

Legal risk types	Description
Legislative risk	The risk that the Fund, an AE or an executing entity fails to implement legislative or regulatory requirements related to the Fund's operations (this often includes regulatory risk), or engages in situations where the governing laws or rules are ambiguous or untested The risk that future legislation or policies or future processes by which existing legislation or policies are applied conflict with Fund operations. The risk of failure to remain aware of the existing legislation or regulation that could impact the Fund's operations.
Contractual risk	The risk that current and future contracts expose the organization to, for example, use of non-standard terms and conditions; technical faults such as lack of appropriate documentation and inadequate/unclear authorization; or failure to enforce or to comply with terms.
Non-contractual risk	The risk that the Fund, an AE or an executing entity fails to keep to the spirit, as well as the letter, of non-contractual law: for example, infringement of third-party intellectual property rights; or failure to meet the requisite standard of care due to stakeholders.
Dispute risk	The risk that the Fund makes operational or strategic errors when it manages disputes: for example, failure to adhere to dispute resolution timelines or other mismanagement of the dispute process; or the use of an inappropriate strategy or resolution regime.
Legal opinion risk	The risk that the Fund makes operational strategic errors as a result of relying on formal legal opinions: (a) With unusual qualifications or assumptions; or (b) Which turn out to be incorrect.

7.1.5 Compliance risk

42. Compliance risk for the Fund relates to failure to comply with the applicable laws, regulations, or standards and codes of conduct that are set by:

(a) Host countries in which the Fund invests; and

(b) The Fund itself through its policies and procedures.

43. This would include, for example, failure of the Fund to follow the principle of non-cross-subsidisation between grant and loan contributors or failure of the Fund to limit non-grant funding to debt distressed countries.

7.2 Financial risks

7.2.1 Performance risk

44. Performance risk materializes when an AE (intermediary or implementing entity) fails to adhere to the terms of funding received from the Fund. The terms are temporal (failing to respect the tenors and/or schedules); monetary (paying interest, fees and/or expected returns in a timely manner); and investment criteria related (adhering to the committed results as per the Fund's investment criteria). Such risk includes the credit risk that the Fund takes when providing loans. One of the drivers that could lead to these risks materializing would be a change in policy by the host country in which the Fund invests, including due to changes in government.

45. In addition, a concentrated portfolio exposes the Fund to the risk that adverse developments – as relates to the aforementioned temporal, monetary or investment criteria risk – in any one project/programme would negatively impact a significant portion of the portfolio. Scenarios will capture different types of potential concentrations in the Fund's investment portfolio so as to set maximum concentration levels per accredited entity, executing entity, geographical region and area of activity.

Table 9: Indicative list of performance risk sources

Performance risk sources	Description
Temporal risk	Failure of AEs and executing entities to respect tenors and/or schedules as pertain to financial obligations or the execution of projects/programmes
Monetary risk*	Failure of AEs and executing entities to honor financial obligations (repayment of principal, interest, fees and/or expected return on equity) in a timely manner. This includes credit risk; counterparty risk; equity risk; and political risk including Nationalization, Expropriation, Convertibility and Transferability.
Investment criteria risk	Failure of AEs and executing entities to adhere to the investment criteria results to which they committed themselves
Concentration risk	Failure to sufficiently diversify the portfolio of AEs and/or investments such that a material adverse event related to a restricted number of AEs and/or projects would have a portfolio threatening impact on the Fund

* Different institutions name this risk differently (e.g. it is called credit risk at banks)

7.2.2 Funding risk

46. Funding risk materializes if:

(a) Insufficient funds are pledged by contributors without adjusting the Fund's strategic objectives; and/or

(b) Insufficient pledges are converted into contributions;

(c) Expected payments in cash and promissory notes – or the encashment of promissory notes – do not materialize in a timely manner; and

(d) Funds that were expected to flow back to the Fund are either delayed or do not materialize.

47. This risk could give rise to the Fund's insolvency and/or illiquidity. It would have an impact on the Fund's ability to undertake and fund projects and programmes.

48. As the majority of the contributors are expected to be sovereign governments that are party to the Governing Instrument, the credit risk of contributing countries is rather limited. However, the experience of other multilateral funds suggests that while outright default on future cash contributions and/or on promissory notes, payment or encashment is unlikely, rescheduling of payments can occur on occasion due to political or adverse economic reasons. The Fund would report any instances of recent or expected rescheduling.

49. Funding risk is further accentuated by a concentration factor, where over 80 per cent of pledges are provided by a limited number of countries. An adverse event that impacts any one of these countries (financial, political or other) could create illiquidity or insolvency for the Fund. This is of particular importance if the contributors of which there is a concentration are closely linked either politically or economically. For such contributors, the actions of one donor could potentially engender a domino effect.

Table 10: Indicative list of funding risk sources

Funding risk sources	Description
Pledge risk	Risk that insufficient pledges are made in the future to allow the Fund to fulfill its current strategic objectives.
Conversion risk	Risk that pledges are not converted to contributions in a timely manner.
Encashment	Expected payments in cash and promissory payments, or the encashment of promissory notes do not materialize within the expected time frame.
Reflow risk	Risk that expected reflows to the Fund from past investments do not materialize within the expected time frame. This would be the result of monetary risk having occurred on investments made.
Concentration of contributors	Failure to sufficiently diversify the portfolio of contributors such that a material adverse event related to one or a few key contributors would give rise to a Fund threatening liquidity or solvency situation.

7.2.3 Market risk

50. Market risk is defined as the risk of losses in on and off-balance sheet positions arising from adverse movements in market prices. The key market risks to which the Fund is exposed are foreign exchange risk and interest rate risk. The standard metric for market risk is value at risk (VaR), which reflects the maximum amount of losses that could take place due to market risk during a certain period of time with a specific confidence level. While the Fund could develop a VaR system, there has been some criticism of this approach following the events of

the 2008 financial crisis. For the Fund, simpler metrics would be more meaningful, at least during its initial years of operation.

51. The foreign exchange risk that the Fund bears includes the following:

(a) The daily variation in US$ value of the un-encashed promissory notes received in non US$-currency;

(b) The daily variation in US$ value of expected future payments of scheduled contributions in a non-US$ currency; and

(c) Any mismatch that may occur between the currency of contributors' loans and those extended through accredited entities.

52. Changes in interest rates could affect the Fund via the impact on a loan recipient's ability to repay loans or its loan prepayment behaviour. A more limited interest rate risk arises from the investments that the Interim Trustee carried out by the Fund's liquid assets. Therefore, the Fund initially should report qualitatively on the impact of interest rates on its creditors and on the Interim Trustee's investment portfolio present pre-payment trends.

Table 11: Indicative list of market risk sources

Funding risk sources	Description
Foreign exchange risk	Risks arising from foreign currency exchange-rate fluctuations such as loss in value due to exchange rate fluctuations of contributor commitments
Interest rate risk	Risks arising from changes in interest rates such as investment losses in the liquid asset portfolio managed by the Interim Trustee

7.2.4 Asset–liability risk/Liquidity risk

53. For the Fund, the concept of asset-liability risk is tied to a mismatch between inflowing funds and outflowing funds. The Fund will need to ensure that it converts sufficient contribution agreements and promissory notes – taking into consideration expected incoming reflows from projects and programmes – into cash to meet its expected payment obligations arising from expenditures, commitments to fund projects/programmes and repayments on loan contributions. The Fund does not have a possible recourse to short-term liquidity funding, so it needs to maintain excess liquidity at all times. It can, however, seek to keep the level of excess liquidity within a reasonable level. Another source of risk under this category is counterparty risk that may arise due to the investment of the trustee of the Fund's liquid assets. While this type of risk is expected to be limited, as investments will be made in high credit quality instruments, any potential losses would lead to a decrease in funds available for projects and programmes.

VIII. Risk dashboard and methodology

54. Table 12 below contains the proposed risk dashboard, which comprises nine risk categories and 25 subcategories.

Table 12: Risk dashboard

Risk type	Category	Subcategory	Priority (H/M/L)	Key performance metric	Triggers	Flag	Corrective action plan
Non-financial risk	Strategic	Climate Impact & Results	TBD	TBD	• Target TBD • Limit TBD		TBD In cases of flags
		AE concentration	TBD	TBD		TBD	TBD
		Portfolio management	TBD	TBD		TBD	TBD
		Country ownership	TBD	TBD		TBD	TBD
	Reputational	Stakeholder Perception of business practices	TBD	TBD		TBD	TBD
		Stakeholder perception of unexpected shocks	TBD	TBD		TBD	TBD
	Operational	Fiduciary	TBD	TBD		TBD	TBD
		Staffing	TBD	TBD		TBD	TBD
		Business disruption	TBD	TBD		TBD	TBD
	Legal	Legislative	TBD	TBD		TBD	TBD
		Contractual	TBD	TBD		TBD	TBD
		Non-contractual	TBD	TBD		TBD	TBD
		Dispute	TBD	TBD		TBD	TBD
		Legal opinion	TBD	TBD		TBD	TBD
	Compliance		TBD	TBD		TBD	TBD
Financial risk	Performance	Temporal	TBD	TBD		TBD	TBD
		Monetar	TBD	TBD		TBD	TBD
		Investment criteria	TBD	TBD		TBD	TBD
		Concentration	TBD	TBD		TBD	TBD
	Funding	Pledge	TBD	TBD		TBD	TBD
		Conversion	TBD	TBD		TBD	TBD
		Encashment	TBD	TBD		TBD	TBD
		Reflow	TBD	TBD		TBD	TBD
		Concentration	TBD	TBD		TBD	TBD
	Market	FX	TBD	TBD		TBD	TBD
		Interest rate	TBD	TBD		TBD	TBD
	Liquidity		TBD	TBD		TBD	TBD

Abbreviations: AE = Accredited Entity, FX = Foreign Exchange, H = high, M = medium, L = low, TBD = To Be Determined.

55. The Secretariat, in consultation with the Risk Management Committee, is to further define each subcategory in order to build the risk register. The risk register identifies all the risk drivers behind each risk sub-category. For example, the driver behind climate impact risk would

be the Fund's failure to achieve its eight Fund level impacts in mitigation and adaptation as defined in the results management framework Board (decision B.07/04).

56. Scenarios will be run for each risk subcategory so as to determine the relevant key performance metrics to measure tolerance and limit as well as the related target.

57. The Secretariat, in running the scenarios for each risk subcategory, will also assign it a priority level (high/medium/low) derived from its probability of occurrence and its predicted impact on the Fund should it occur.

58. A risk subcategory's probability of occurrence can be categorized as follows:

(a) High – Highly likely to occur within the next 12 months;

(b) Somewhat likely – Would not be surprising if it occurred within the next 36 months;

(c) Somewhat unlikely – Would be surprising if it occurred within the next 36 months; and

(d) Low – Highly unlikely to occur within the next 36 months.

59. A risk subcategory's impact in the event that it occurs can be categorized as follows:

(a) High – A material adverse impact that could impede the franchise's ongoing viability and/or its ability to meet its strategic objectives;

(b) Somewhat disruptive – An adverse impact that would be disruptive to the Fund's viability and/or its ability to meet its strategic objectives;

(c) Somewhat non-disruptive – A relatively contained adverse impact that could impact the Fund's financials and/or its ability to meet its strategic objectives by up to 10 per cent; and

(d) Low – Minimal and contained impact.

60. Table 13 illustrates how different combinations of probability of occurrence and impact in the event of occurrence yield different priorities. For example, a risk subcategory with a high priority of occurrence that would have a high impact in the event of occurrence would be deemed a high priority.

Table 13: Priority grid

Impact / Occurrence probability	(1) Low	(2) Somewhat non-disruptive	(3) Somewhat disruptive	(4) High
Low (1)	Low priority	Low priority	Low priority	Medium priority
Somewhat unlikely (2)	Low priority	Low priority	Medium priority	Medium priority
Somewhat likely (3)	Low priority	Medium priority	High priority	High priority
High (4)	Medium priority	Medium priority	High priority	High priority

61. Risk subcategories that are deemed to have medium or high priorities and for which the key performance metric has breached the target shall be tagged with a red flag on the dashboard so as to solicit a management action plan and attention by the Board.

62. The Secretariat would also propose the type of corrective action that will be put in place for each risk category when its limit is exceeded.

63. The Secretariat, through the Chief Financial Officer and the Risk Manager, will be responsible for preparing the risk dashboard on a quarterly basis. The Secretariat will submit to the Board an updated risk register yearly or whenever new risks are identified.

IX. Next steps

64. The Board may wish to adopt the draft decision as contained in Annex I to this document.

65. The Secretariat, in consultation with the Risk Management Committee, will expedite the start of work to outline various scenarios, using the methodology for determining the initial risk appetite once approved, which will support the Board in the setting of the Fund's initial risk appetite in the run up to the eleventh Board meeting, as requested in decision B.07/05. This methodology will also be used to guide the analysis of investments to be presented for approval at the eleventh meeting of the Board.

Annex I: Draft decision of the Board

The Board, having reviewed document GCF/B.10/07 *Initial Risk Management Framework: Methodology to Determine and Define the Fund's Risk Appetite*:

(a) Adopts the risk dashboard and the related categories and subcategories of risk proposed in Annex II to this document;

(b) Also adopts the Fund's risk appetite methodology as contained in Annex III to this document;

(c) Requests the Secretariat, in consultation with the Risk Management Committee, to prepare for the eleventh Board meeting, a detailed risk register, which shall further define the risk categories and subcategories, as outlined in Annex II to this document; and

(d) Also requests the Secretariat, in consultation with the Risk Management Committee, to develop and run scenarios, for the eleventh Board meeting, based on the adopted risk categories and subcategories, for consideration by the Board in the establishment of priorities, targets, tolerances and limits for the different risk categories and subcategories, as outlined in Annex III to this document.

Annex II: Proposed risk dashboard and related categories and subcategories of risk

1. Table 1 summarizes the definition of the nine risk categories and 25 subcategories to be monitored.

Table 1: Risk categories and subcategories to be tracked

Category	Subcategory	Source of risk
Strategic	Climate Impact & Results	Failure to deliver the expected transformative climate impact as defined by the Fund's objectives, investment criteria and the results management framework.
	AE concentration	Concentration on a limited number of AEs that fail to generate the required balance in mitigation/adaptation; pipeline of projects/programmes.
	Portfolio management	Failure to build an optimal portfolio of projects/programmes as defined by the Fund's initial results management framework.
	Country ownership	Failure to develop a portfolio of projects and programmes that are fully aligned with country priorities and strategies; that foster the involvement of local actors; and that respect the IMF/World Bank Joint Debt Sustainability Framework.
Reputational	Stakeholder perception on business practices	Events or issues that have a material adverse effect on the Fund's credibility in developing countries or with contributors, AEs or civil society.
	Stakeholder perception from unexpected shocks	Adverse publicity that occurs as a result of fraud, implementation failure or other types of shocks.
Operational	Fiduciary	Risks that funds are not used for their intended purpose such as the misuse of funds due to: (a) The lack of internal controls in administrative and operational procedures, (b) Poor management of AEs, executing entities or NDAs, and (c) Internal or external fraud.
	Staffing	Losses and disruptions due to problems with recruitment, retention and succession planning, and integrity and morale among the Fund's staff.
	Business disruption	Disruption of business due to catastrophic events or system failures (hardware, software, telecommunications, wars).
Legal	Legislative	Failure by the Fund, AEs or executing entities to implement legislative or regulatory requirements related to the Fund's operations or engagement in situations where governing laws or rules are ambiguous or untested.
	Contractual	Use of defective contracts that expose the organization to losses.
	Non-contractual	The Fund, AEs or executing entities fail(s) to keep to the spirit, as well as the letter, of non-contractual law: for example, infringement of third-party intellectual property rights; or failure to meet the requisite standard of care due to stakeholders.
	Dispute	Operational or strategic errors when the Fund manages disputes.
	Legal opinion	Reliance on formal legal opinions with unusual qualifications or assumptions, or which turn out to be incorrect.

Abbreviations: AE = Accredited Entity, FX = Foreign Exchange, H = high, M = medium, L = low, TBD = To Be Determined.

Category	Subcategory	Source of risk
Compliance		Failure to comply with the applicable laws, regulations, standards and codes of conduct that are set by: (a) The host countries in which the Fund invests; and (b) The Fund itself through its policies and procedures.
Performance	Temporal	Failure of AEs or executing entities to respect tenors and/or schedules as pertain to financial obligations or the execution of projects/programmes.
	Monetary	Failure of AEs and executing entities to honor financial obligations (repayment of principal, interest, fees and/or expected return on equity) in a timely manner. This includes credit risk; counterparty risk; equity risk; and political risk including Nationalization, Expropriation, Convertibility and Transferability.
	Investment criteria	Failure of AEs or executing entities to adhere to the investment criteria results to which they committed themselves.
	Concentration	Failure to sufficiently diversify the portfolio of AEs and/or investments such that a material adverse event related to a restricted number of AEs and/or projects would have a portfolio threatening impact on the Fund.
Funding	Pledge	Pledges are not made or are insufficient for the Fund to achieve its objectives.
	Conversion	Failure to convert pledges into contributions in a timely manner.
	Encashment	Expected payments in cash and promissory payments, or the encashment of promissory notes, do not materialize within the expected time frame.
	Reflow	Expected reflows to the Fund from the project portfolio do not materialize within the expected time frame.
	Concentration	Failure to sufficiently diversify the portfolio of contributors such that a material adverse event related to one or a few key contributors would give rise to a Fund-threatening liquidity or solvency situation.
Market	FX	Foreign currency exchange-rate fluctuations such as loss in value due to FX fluctuations of contributor commitments.
	Interest rate	Changes in interest rates such as investment losses in the liquid portfolio managed by the Interim Trustee.
Liquidity		Timing mismatch between the cash inflows and cash outflows leading to shortage in the ability of the Fund to face its payment obligations.

Abbreviations: AE = Accredited Entity, FX = Foreign Exchange, H = high, M = medium, L = low, TBD = To Be Determined.

2. The risk dashboard where the risk categories and subcategories will be monitored is presented in Table 2 below.

Table 2: Risk dashboard

Risk type	Category	Subcategory	Priority (H/M/L)	Key performance metric	Triggers	Flag	Corrective action plan
Non-financial risk	Strategic	Climate Impact & Results	TBD	TBD	• Target TBD • Limit TBD		TBD In cases of flags
		AE concentration	TBD	TBD		TBD	TBD
		Portfolio management	TBD	TBD		TBD	TBD
		Country ownership	TBD	TBD		TBD	TBD
	Reputational	Stakeholder Perception of business practices	TBD	TBD		TBD	TBD
		Stakeholder perception of unexpected shocks	TBD	TBD		TBD	TBD
	Operational	Fiduciary	TBD	TBD		TBD	TBD
		Staffing	TBD	TBD		TBD	TBD
		Business disruption	TBD	TBD		TBD	TBD
	Legal	Legislative	TBD	TBD		TBD	TBD
		Contractual	TBD	TBD		TBD	TBD
		Non-contractual	TBD	TBD		TBD	TBD
		Dispute	TBD	TBD		TBD	TBD
		Legal opinion	TBD	TBD		TBD	TBD
	Compliance		TBD	TBD		TBD	TBD
Financial risk	Performance	Temporal	TBD	TBD		TBD	TBD
		Monetar	TBD	TBD		TBD	TBD
		Investment criteria	TBD	TBD		TBD	TBD
		Concentration	TBD	TBD		TBD	TBD
	Funding	Pledge	TBD	TBD		TBD	TBD
		Conversion	TBD	TBD		TBD	TBD
		Encashment	TBD	TBD		TBD	TBD
		Reflow	TBD	TBD		TBD	TBD
		Concentration	TBD	TBD		TBD	TBD
	Market	FX	TBD	TBD		TBD	TBD
		Interest rate	TBD	TBD		TBD	TBD
	Liquidity		TBD	TBD		TBD	TBD

Abbreviations: AE = Accredited Entity, FX = Foreign Exchange, H = high, M = medium, L = low, TBD = To Be Determined.

3. The Secretariat is to further define each subcategory when working on developing the risk registry in consultation with the Risk Management Committee.

Annex III: Risk appetite methodology

1. The proposed risk appetite methodology (RAM) for the Fund consists of the following five steps:

I. Agreement on risk categories and subcategories

2. The RAM begins with agreement by the Board on the risk categories and subcategories that will be tracked and modelled. These are provided in Annex II to this document.

II. Agreement on a risk dashboard

3. The risk dashboard consists of regular snapshots of the Board-agreed risk categories and subcategories that will be tracked by the Secretariat, the Risk Management Committee and the Board. The structure of the risk dashboard is provided in Annex II to this document, and consists of the level of priority of each risk subcategory, the key performance metric(s), the triggers (target and limit), the flag and corrective action plan–if any.

III. Development of scenarios

4. A series of scenarios that pertain to these risk categories will be analysed in consultation with the Risk Management Committee in order to identify the risk targets, tolerances and limits. These scenarios should take into account all the key risks faced by the Fund. Based on the scenarios, the Secretariat, in consultation with the Risk Management Committee, is thereafter to propose to the Board the relevant key performance metric(s) by which to measure tolerance and limit as well as the related target.

5. The Secretariat, in running the risk scenarios, will also assign a priority level (high/medium/low) to risk subcategories, which will be derived from their probability of occurrence and predicted impact on the Fund should they occur.

6. A risk subcategory's probability of occurrence can be categorized as follows:

(a) High – Highly likely to occur within the next 12 months;

(b) Somewhat likely – Would not be surprising if it occurred within the next 36 months;

(c) Somewhat unlikely – Would be surprising if it occurred within the next 36 months; and

(d) Low – Highly unlikely to occur within the next 36 months.

7. A risk subcategory's impact in the event that it occurs can be categorized as follows:

(a) High – A material adverse impact that could impede the franchise's ongoing viability and/or its ability to meet its strategic objectives;

(b) Somewhat disruptive – An adverse impact that would be disruptive to the Fund's viability and/or its ability to meet its strategic objectives;

(c) Somewhat non-disruptive – A relatively contained adverse impact that could impact the Fund's financials and/or its ability to meet its strategic objectives by up to 10 per cent; and

(d) Low – Minimal and contained impact.

8. Table 1 below illustrates how different combinations of probability of occurrence and impact in the event of occurrence yield different priorities.

9. For example, a risk subcategory with a high priority of occurrence that would have a High impact in the event of occurrence would be deemed a high priority.

Table 1: Priority grid

Impact / Occurrence probability	(1) Low	(2) Somewhat non-disruptive	(3) Somewhat disruptive	(4) High
Low (1)	Low priority	Low priority	Low priority	Medium priority
Somewhat unlikely (2)	Low priority	Low priority	Medium priority	Medium priority
Somewhat likely (3)	Low priority	Medium priority	High priority	High priority
High (4)	Medium priority	Medium priority	High priority	High priority

10. Risk subcategories that are deemed to have medium or high priorities and for which the key performance metric has breached the target shall be tagged with a red flag on the dashboard so as to solicit a management action plan and attention by the Board.

IV. Agreement on risk targets, tolerances, and limits and development of a risk appetite statement

11. Based on the risk scenarios already developed, the Secretariat will present a proposed set of risk targets as well as their respective tolerances and limits to the Board for consideration and adoption. Subsequently, the Secretariat will work with the Risk Management Committee on preparing a RA statement for consideration by the Board. Upon approval of the RA statement – as well the targets, tolerances and limits – credit and investment manuals and software can be developed in order to embed the risk framework into the day-to-day management of the Fund.

V. Risk reporting

12. As a last step, the Secretariat will integrates targets, tolerances and limits into the risk dashboard and risk register based on the risk monitoring and reporting management system adopted by the Board under the initial financial risk management framework (decision B.07/05). This reporting will be the basis for continuous review and updating of the Fund's RA and risk management practices. The Fund would need to conduct risk control and self-assessment, a process of identification, assessment, effective internal control and action plans related to high-risk events, in a timely manner, in order to ensure the robustness of the risk framework. Such periodic reporting from the Secretariat will enable the Board to review the evolution of the risk borne by the Fund and to make any necessary adjustments.