STAP information note #2 on blended finance:

Some considerations for project design

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STAP SCIENTIFIC AND TECHNICAL ADVISORY PANEL

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Most design for blended finance projects treats the finance logic and the logic for delivering global environmental benefits (GEBs) separately. However, as this information note explains, there are important interactions between these logics, so that how the GEBs are to be delivered may affect the design of the blended finance instrument. The note suggests three considerations that would help project designers align the finance and GEB logics in blended finance projects more explicitly and systematically.

1. Introduction

The Global Environment Facility (GEF) is increasingly expected to leverage more private investment to deliver global environmental benefits (GEBs[1]), including through blended finance projects using GEF non-grant instruments. **Many blended finance projects are more complicated than conventional GEF Trust Fund projects** (see the Scientific and Technical Advisory Panel (STAP) Information note #1 on blended finance).[2] Blended finance projects often involve more transfer of responsibility for delivering GEBs to entities beyond the GEF Partnership, and the pathway from the GEF providing funding to the eventual delivery of GEBs is often much longer (see Box 1). These elements are important for attracting and scaling private sector investment, and need to be addressed in the project design to ensure that GEBs are successfully delivered.

There are many forms of blended finance, which are commonly grouped into the following categories:[3]

- *Risk mitigation instruments*, which involve various types of guarantee as well as concessional contributions to structured finance funds
- *Catalytic capital instruments*, which involve equity investments or debt instruments in the form of concessional loans
- *Performance-based instruments*, such as convertible instruments or contingent grants and loans

A fourth category is *grants* (as opposed to non-grant instruments) for technical assistance and capacity-building.

While the form of blended finance instrument is one key element of project design, the focus of this information note is to show that addressing the features of the impact pathways through which the project will deliver GEBs is also key to the design of blended finance projects. Annex A elaborates the various features of these impact pathways.

[1] For a full list of GEF's GEBs, see https://www.thegef.org/documents/global-environmental-benefits.
[2] See STAP (2024)
[3] For more information about each of these finance instruments, see GEF (2022a), which lists at least 14 forms of instrument and notes that others are constantly evolving, or Annex A (and its sources) in STAP's Information note #1 (STAP 2024).

BOX 1. BLENDED FINANCE PROJECTS OFTEN HAVE LONG AND COMPLICATED IMPACT PATHWAYS

An impact pathway explains how a GEF investment is expected to eventually lead to GEBs and any other intended impacts. In blended finance projects, GEF funds are applied to attract private capital into a variety of funding arrangements that will provide a return to the private investors at the same time as creating GEBs. There are diverse ways in which funds then flow along impact pathways to cause interventions that create GEBs (Section A.2 Annex A):

- In the simplest models, the funds are applied directly as grants (which may be conditional) to organizations that create the GEBs; this is similar to the impact pathways in most GEF Trust Fund grant projects.
- Less simply, the funds may go to an intermediary, like a bank, that then issues loans to recipients like farmers or small businesses that use the money to create GEBs (and economic returns so that they can repay the loans).
- In the most complicated cases, the first intermediary may be an investment fund that supports a variety of small businesses, which in turn sell their products and services to those who create the GEBs.

As impact pathways get longer, it may be harder to ensure that the GEBs are finally delivered, and in the most complicated cases there may be multiple impact pathways stemming from one fund. For example, Figure 4 (Annex A) shows a part of the delivery logic for agriculture technology (AgTech) investments from Yield Lab Opportunity Fund I (GEF ID 11066). The project assumes the fund will invest in 27 companies, 70% of which will deliver AgTech relevant to GEBs. Half of these companies will each reach 5,000 small farms directly; the other half will reach 20,000 farms via 10 corporate clients. The farmers are expected to deliver the GEBs. Each AgTech company is developing different products or services, so each one represents a different impact pathway, and there are many assumptions in each pathway (e.g. that clients will adopt the AgTech and apply it to generate GEBs). Thus, clearly identifying and testing assumptions about GEB delivery and monitoring must be central to the theory of change in blended finance projects.

2. Linking the finance and GEB logics of blended finance projects

STAP's review[4] of the academic literature on blended finance found that the volume of literature is still quite limited; lessons for project design from theory, as well as from the practitioner literature, are only beginning to be systematized. The literature identified a difference in culture between those who design the *finance logic* of blended finance projects and those concerned with the *impact logic* (in the GEF context, the impact logic would be the means by which the GEBs will be delivered that is, the *GEB logic*; see Figure 1, Annex A). This divergence can lead to different expectations and assumptions. STAP suggests that **the finance and GEB logics should be addressed equally and together in project design** and that **the two cultures should be encouraged to converge.**

There are many ways in which the finance and GEB logics may interact in project planning, for example:

- Will the intended GEBs emerge within the term of the blended finance instrument?
- Will the economic benefits of the intended GEBs be sufficient to meet loan repayments or the expected return on equity?
- Will the targeted GEBs endure after the private finance ceases?
- How easily can the GEBs be measured, and are the measurements sufficiently reliable to satisfy any financial requirements (e.g. for a performance-based instrument)?

[4] See STAP's information note #1 on blended finance (STAP 2024).

- How well proven (or "mature") are the proposed interventions to deliver the GEBs, and does this level of maturity affect the risks to financial returns?

Some of these interactions are considered by project designers, but STAP has not found that they are addressed systematically when it screens GEF blended finance projects. The GEF's policy, selection criteria, and assessment process[5] for blended finance projects tend to address the finance and GEB logics separately. The GEF's policy[6] mentions GEBs briefly, and all but one of the eight selection criteria for such projects (see Annex B) address the finance logic, with the usual GEF Trust Fund requirements to deliver GEBs also required to be met. This means that **attention is not drawn to the *interactions* between the finance and GEB logics.**

This matters because in most blended finance projects, responsibility for investment management is transferred to an entity outside the GEF Partnership at an early stage, with some involvement from a GEF Agency. In projects with longer impact pathways (Box 1), there is less opportunity for adaptive management once the finance arrangements have been signed off. Therefore, design principles that ensure the delivery and monitoring of GEBs need to be clear at the project design stage and embedded in governance arrangements. The GEF should not shy away from exploring innovative models but should ensure that proposals for such projects consider these design principles carefully.

3. Reflecting the interactions between finance and GEB logics in project design

The GEF's selection criteria for blended finance projects (Annex B) encourage project designers to pay attention to the evolving global principles for blended finance.[7] These principles are mainly concerned with finance arrangements, and include ensuring financial additionality, minimizing concessionality, supporting commercial viability, reinforcing markets, partnering effectively, and delivering sustainable development benefits, as well as ensuring transparency. STAP suggests that **project designers should also take into account the following three considerations that look at how the finance and GEB logics interact and need to converge.**

Consideration 1: Does the design of the blended finance instrument account for how the GEBs will be delivered by the project? Considering, at least, the maturity of the intervention, the ease of measuring the resulting GEBs, and the rate of delivery of GEBs and of economic co-benefits.

Blended finance projects can be categorized in terms of the GEBs they aim to deliver and the features of the interventions they will use to deliver these GEBs. In particular, interventions to deliver GEBs differ in terms of their maturity, their rate of delivery of GEBs and of economic co-benefits, and the ease with which these benefits can be measured (Section A.1, Annex A). Attention should be paid to the potential interactions between these GEB-related features and the design of the blended finance instrument. This recommendation should be uncontentious: design rubrics in the blended finance literature already note the importance of considering the maturity of the targeted market and its surrounding institutions on investor confidence, with more mature markets requiring risk mitigation instruments rather than catalytic capital instruments.[8] The maturity of the intervention – the likelihood that an intervention like a new technology or management system will yield the expected results – is also already considered, but mainly in terms of how the financial structures are set up (Figure 2, Annex A). Maturity should also be considered in terms of the confidence that the intervention will deliver GEBs. Interventions can be somewhat experimental (e.g. an untested approach to reducing mercury in

[5] The finance logic is addressed by the GEF's Advisory Group of Financial Experts, while GEB logic is addressed by the GEF Secretariat thematic staff.
[6] See the GEF blended finance global program and non-grant instruments policy update GEF (2022a).
[7] For example, OECD (2021), DFI Working Group (2023); the International Finance Corporation specifically requires alignment with "the DFI Enhanced Principles for Blended Concessional Finance" (see: https://www.ifc.org/en/what-we-do/sector-expertise/blended-finance/how-blended-finance-works).
[8] For example, Figure 4 in Kwon et al. (2022), detailed in STAP's Information note #1 on blended finance (STAP 2024).

the clothing supply chain) or very well known (e.g. scaling energy efficiency measures in established markets) in the target geography and social context. Other features of the interventions should also be accounted for in the project design, including addressing the consequences of the rate of delivering, and the durability of, GEBs and economic co-benefits, and considering how easy the different GEBs are to measure. Table 1, Annex A, provides examples of the diverse features of some interventions used to deliver GEBs in specific blended finance projects. Projects need to show that they have taken account of these features in their design.

Consideration 2: What are the incentives for those who are responsible for delivering GEBs to do so, and what is the role (if any) of technical assistance? This means spelling out how the GEBs will be delivered and who is involved in each impact pathway (e.g. startup businesses, smallholder farmers, energy companies).

Finance models vary greatly in terms of how complicated their impact pathways are for delivering GEBs (Section A.2, Annex A). Project proposals should identify how those ultimately responsible for delivering GEBs will be incentivized to do so, as well as to deliver any economic returns. Technical assistance may be helpful, particularly for the longer impact pathways; this assistance may be provided by a GEF Agency or an implementing financial institution or be bought in from outside. The expertise needed to support the delivery of GEBs may often not be held within financial organizations, in which case it will need to be funded separately to the blended finance instrument. A technical assistance facility could also play a role in collating the monitoring of GEBs in ways that help to learn about which interventions and incentives work within a blended finance model, which do not, and why. To understand the need for incentives and the role of technical assistance, the more complicated impact pathways of some blended finance arrangements (Box 1 and Section A.2, Annex A) need to be spelled out more clearly in project design (or, if they are not known at the time of design, then the process by which they *will* be spelled out as the project advances should be made clear; see Section A.3, Annex A).

Consideration 3: How will the governance of the project ensure that the expected GEBs and financial returns are both delivered, especially when impact pathways are longer? The arrangements should consider how investments will be selected to align the finance and GEB logics, how performance will be monitored, and how future investments will learn about what works.

The length of the impact pathways in different blended finance models (Section A.2, Annex A) also affects how closely the GEF Partnership can influence, or even monitor, how effective the intermediaries are at delivering GEBs. In addition, the direct influence of the GEF Partnership ceases earlier when the market in which the blended finance instrument operates is more mature, as is usually the case for risk mitigation instruments. The proposed governance of the blended finance instrument itself (e.g. a fund) will in many cases determine the role of the GEF Agency and its influence on the delivery of GEBs. If the governance includes an advisory committee, it is important to ensure that the committee is equipped with suitable environmental expertise to assist with selecting investees most likely to deliver GEBs. The governance arrangements should provide incentives for monitoring and learning about the GEB logic, so that, for example, an investment fund can learn quickly which types of investment will work and which will not. However, this monitoring cannot be too burdensome, and must be designed to take account of confidentiality requirements. The financial institutions involved in many blended finance projects may not have the expertise or the incentives for this monitoring, in which case, monitoring and learning may need to be resourced and governed separately from the blended finance investment.

STAP suggests that these three considerations could be usefully included in calls for blended finance projects to help actively bridge between the finance and GEB logics.

Annex A: Thinking about blended finance initiatives from a GEB perspective

The primary goal of the Global Environment Facility (GEF) with non-grant instruments is to "expand private sector investment aligned with GEF strategic priorities, and to create replicable business models and financial structures to accelerate private sector investment in the environment".[9] Meeting this goal means creating some form of return to the private capital investment while ensuring that credible and enduring global environmental benefits (GEBs) are delivered. Achieving these two outcomes requires that both the finance and the GEB logics are effective and that they are integrated with each other to ensure their alignment.[10]

In its review for Information note #1, the Scientific and Technical Advisory Panel (STAP) found that the academic literature on blended finance is still quite limited and that lessons from it, as well as from practitioner literature, are only beginning to be systematized.[11] However, a particular challenge identified in the literature is the difference in culture between those who design the *finance* side of blended finance projects and those concerned with the *impact* side (particularly environmental impacts) (Figure 1). STAP argued that to address the interactions between finance and GEB logics, these different cultures should be encouraged to converge and should be given equivalent weight.

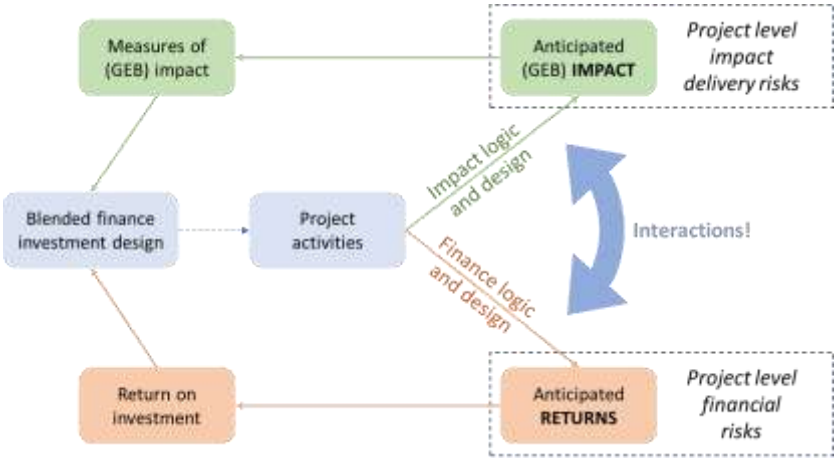

Figure 1. A simplified schema shows how the impact logic (GEBs for the GEF) (green) and finance logic (orange) tend to be developed and measured separately in blended finance. However, these logics often interact, and some project activities will contribute to both. *Source: STAP (2024), elaborated from Thompson (2022b).*

As detailed in Section 2 of this information note, there are many ways in which these logics may interact in project planning. Some of these interactions are currently addressed by project designers, but it is rare to find the interactions made explicit or covered systematically in project documentation; an ad hoc approach to considering the interactions may therefore arise. The literature categorizes blended finance projects according to their financial arrangements. However, such projects could also be categorized according to features that relate to how the finance and GEB logics are likely to interact. These features include the type of impact or intervention being planned and its characteristics, as well as the number of GEB impact pathways being considered. While the GEF ultimately requires the delivery of GEBs, co-benefits such as livelihood improvements may also be important to the finance logic (e.g. to be able to repay loans).[12] The following sections explore these features.

A.1 Features of GEBs and the interventions that achieve them

This section demonstrates that different GEBs and the interventions used to achieve them can be categorized in terms of various features that are important to the success of the finance logic in a

[9] GEF (2022a, para 6); para 11 and others extend this into more specific objectives for the GEF-8 cycle.
[10] There is also a role for the GEF at the programmatic level in ensuring that the rules that govern investment priorities provide a better enabling context for individual investors to invest in GEB. GEF (2022a, para 11) notes this in regard to supporting disclosure metrics and similar. Penna et al. (2023) describe how four key current investment rule paradigms need amending for private sector finance aimed at systems transformation, and Omukuti (2024) outlines the importance of such amendments specifically for climate finance; the GEF could programmatically play a role in support of exploring such changes. This role is not pursued here.
[11] See (STAP 2024).
[12] See STAP (2023).

blended finance project; project designers should demonstrate that they have considered the implications of these features for the finance arrangements in their proposal.

Diverse GEBs are targeted by the GEF, from reducing greenhouse gas emissions, to managing chemicals and waste, to reducing land degradation, to supporting biodiversity. The types of interventions that deliver these GEBs are also diverse and include the deployment of technologies, land-use planning, direct land and sea management actions, and conservation measures for biodiversity. Both the GEBs themselves and the interventions employed to deliver them have properties that are relevant to the performance of blended finance instruments. For example, greenhouse gas emission reductions (a GEB) can occur quickly when a mature technological intervention is implemented (e.g. replacing diesel generators with solar power) and the performance of that intervention is relatively easy to measure. By contrast, greenhouse gas emission reductions may occur *much* more slowly when the intervention used is improvements in land management that will enhance soil carbon (which in turn will reduce greenhouse gas emissions); the performance of this intervention is harder to measure and maintain. These features (rate of occurrence, ease of measurement) can affect the finance logic. For example, some land management interventions may improve livelihoods rapidly but provide GEBs only slowly (e.g. improved fertilizer management to decrease land degradation), whereas others may provide GEBs more quickly than they improve livelihoods (e.g. tree planting with a long harvest cycle for carbon sequestration). Timing issues like these can affect whether some financial interventions (e.g. loans) can be repaid sufficiently quickly and whether enduring GEBs can be achieved by the time of repayment.

The maturity of an intervention can be defined as the likelihood that the intervention will yield the expected results in the expected time frame. For example, the rollout of well-known solar technologies or the application of well-established land management principles in a known farming community are mature compared to the development of new and unproven technologies or compared to land management support in a region with uncertain land tenure. The blended finance literature already alludes to the importance of maturity in the choice of finance instrument (e.g. Figure 2), but this idea has not been systematically applied to interventions intended to deliver GEBs.

GEF blended finance projects can thus be characterized in terms of the maturity of interventions, their rate of delivery of GEBs and financial returns, and the ease with which the targeted GEBs can be measured. All these features affect the real or perceived risk of achieving returns on the financial arrangement in some blended finance instruments and, hence, affect the potential to attract private capital. However, STAP has not found any systematic listing of these features. (Some GEB-related examples are illustrated in Table 1.) Whether these features matter depends on the choice of blended finance instrument – for example, loans that need to be repaid as opposed to performance-based instruments that require measurable GEBs. Project designers are probably considering some of these issues,[13] but systematic attention to their implications is not visible in project proposals at present.

Where one project delivers multiple GEBs, the situation may be more complicated. In such cases, each impact pathway needs to be analysed explicitly, because the implications for the finance logic may differ for each pathway, as explored in Section A.2.

[13] For example, a recent workshop held by the GEF Secretariat with Convergence touched on some of these issues, and Kwon et al. (2022) have identified the maturity of the interventions to be funded as a key design issue, but in the context of the GEF the maturity of interventions is not usually systemized with regard to GEBs nor made explicit in project proposals.

Table 1. Examples of GEF's GEBs and of types of interventions that may deliver them, identifying features that affect how some blended finance projects will perform; key features include the maturity of some types of intervention, the rates at which GEBs and financial co-benefits may typically accrue, and whether they will endure and avoid leakage,[14] and the ease of monitoring the GEBs. Numbering refers to GEF core indicators and subindicators.[15]

GEB	Intervention type	Implications for blended finance *[GEF project example]*
6. Greenhouse gas emissions mitigated	6.4 Increase in installed renewable energy capacity	Generally mature and easily measured. Rapidly determinable benefit. Economic benefits are possibly rapid. Likely to endure, though leakage may occur through rebound effects. *[Partial Risk Sharing Facility for Energy Efficiency, GEF ID 4918]*
	6.1 Greenhouse gas emissions mitigated in the agriculture, forestry and other land-use sector [20 years+]	Maturing. Investing in reducing deforestation (fast benefits) or promoting afforestation and sustainable agricultural production (multiple years for greenhouse gas mitigation benefits). Forest cover is measurable. Local economic benefits may be slow. Risk of leakage by deforestation without good traceability. *[AGRI3, GEF ID 10497]*
9. Chemicals of global concern and their waste reduced	9.2 Quantity of mercury reduced	Pilot example: Partnerships to reduce mercury in textile value chains, but monitoring reduced mercury is challenging. If proof of concept works (i.e. uptake of technologies and explicit benefits) financial reflows, GEBs, and improved livelihoods could be achieved quite quickly. *[Green Global Supply Chain Decarbonization Platform, GEF ID 11326]*
	9.4 Countries with legislation and policy implemented to control chemicals and waste	Pilot example: Investors need reassurance that policies are working in concert to de-risk investments while improving environmental goals. The presence of legislation is easily measured, but implementation effectiveness is harder. Economic benefits, GEBs, and local benefits likely to emerge in the medium to long term. *[Green Global Supply Chain Decarbonization Platform, GEF ID 11326]*
4. Area of landscapes under improved practices (excluding protected areas)	4.3 Area of landscapes under sustainable land management in production systems	Reasonably mature but hard to measure reliably at farm level. Land management benefits for soil organic carbon are slow to emerge. Some economic benefits can be generated quickly, others slowly. Durability uncertain. High potential for deforestation and land-use change leakage without value chain traceability. *[Green Finance and Sustainable Agriculture in the Dry Forest Ecoregion of Ecuador and Peru, GEF ID 10852]*
	4.1 Area of landscapes under improved management to benefit biodiversity	Maturing but usually hard to measure with confidence (unless very simple elements). Landscape (and biodiversity) benefits are usually slow to emerge. Local economic benefits are often hard to mobilize and are likely to emerge in the medium to long term. Durability uncertain. High potential for deforestation and land-use change leakage without value chain traceability. *[Conservation Finance Initiative, GEF ID 9914]*
1. Terrestrial protected areas	1.2 Terrestrial protected areas under improved management effectiveness	Maturing to established, but benefits to biodiversity from management effectiveness are often hard to measure. Support for bioeconomy value chains may deliver economic benefits quite quickly due to established financial tools (e.g. Agribusiness Receivable Certificates in Brazil). High risks related to climate change and global markets. Risk of deforestation leakage, reducing forest cover. *[Living Amazon Mechanism, GEF ID 11327]*
2. Marine protected areas created or under improved management	2.2 Marine protected areas under improved management effectiveness	Nascent example: Blue bonds to support sustainable marine fisheries and marine conservation. Often hard to quantify GEB effectiveness. Benefits to biodiversity may occur in only a few years. Local economic benefits may take time. *[SWIOFish3, GEF ID 9563]*

[14] "Leakage" occurs when interventions aimed at creating GEBs in one place result in (or do not prevent) those GEBs being lost elsewhere (Stafford Smith et al., 2022); "durability" refers to GEBs persisting over time.
[15] See GEF (2022b)

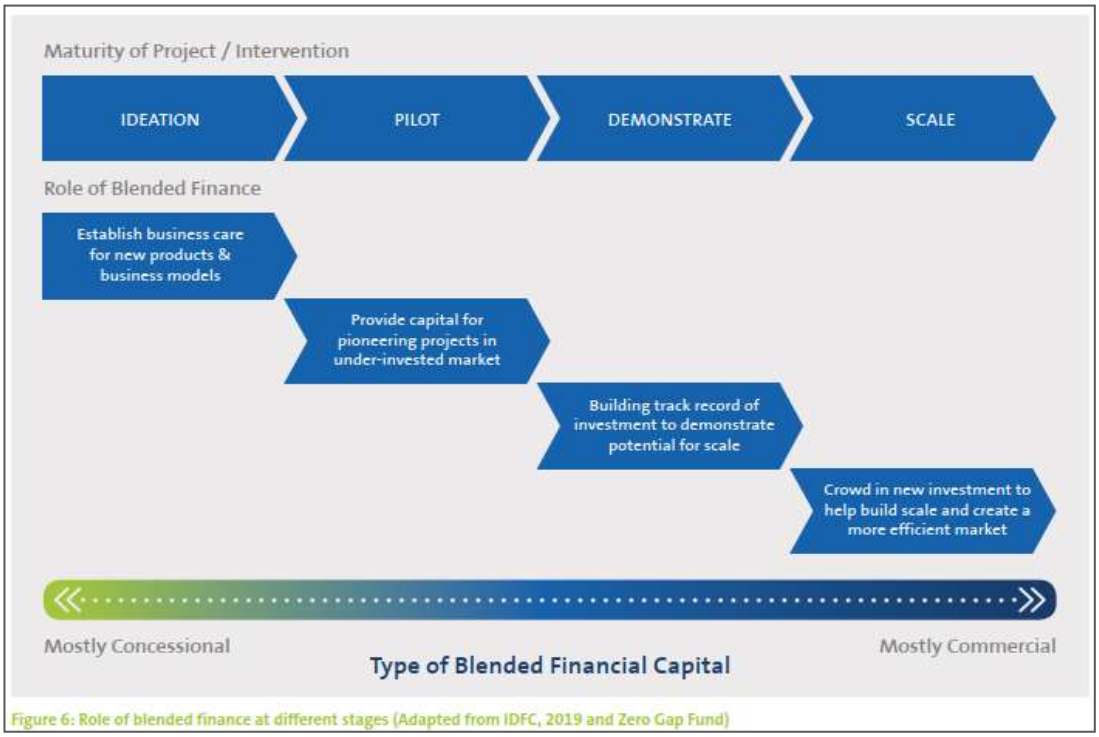

Figure 2. Examples of structuring blended finance instruments in response to the maturity of proposed interventions. These patterns are visible in GEF projects (e.g. where there are more mature interventions, there is a move from risk mitigation instruments to catalytic capital approaches). Reproduced from Figure 6 in Kwon et al. (2022),[16] amended to align terminology.

A.2 The structure and complexity of GEB impact pathways

This section shows that different blended finance projects have very different levels of complexity in how they deliver GEBs. One size certainly does not fit all, but project designers should identify and discuss how complicated their proposal is expected to be and the consequences for ensuring the delivery of GEBs.

Blended finance instruments use diverse impact pathways and interventions to deliver the GEBs; these impact pathways vary in complexity, length and number, as well as the extent to which monitoring and feedback about achievement of GEBs affects the finance logic, as opposed to being simply a requirement for the GEF. Figure II in STAP's Information note #1 depicted the overall logic for several blended finance models; in Information note #2, Figure 3 highlights the GEB impact pathways for some blended finance projects (see also Table 2). These impact pathways identify the final recipients in the chain of logic that leads to GEBs. The recipients may be companies, conservation organizations, extension services, or actual farmers – generally referred to as the *actors* who deliver the GEBs, who may or may not receive financing themselves.

Simpler forms of logic are illustrated in Figure 3(a) by the performance-based "Rhino Bonds" project,[17] which is a South African outcome-based instrument, supported by performance payments from the GEF that are dependent on rhino population levels. Here, there is a single direct impact pathway, where performance is judged by the simple measure of rhino population increase and the actors are a small number of conservation managers. Figure 3(b) exemplifies various instruments that provide loans

[16] For other implications, see Table 2 in STAP's Information note #1.
[17] GEF ID 10330, officially named The Wildlife Conservation Bond; see: https://www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities.

or project funding to a consistent *type* of actor (farmers in this case) to carry out a range of activities (here, a set of defined sustainable land management [SLM] practices) to mainly deliver a specific GEB (here, more land under sustainable management). By contrast, Figure 3(c) depicts instruments that establish various forms of capital investment fund that invest in what may be a diverse array of start-ups or small or medium-sized businesses (SMEs) to create a diversity of products and services that are expected to be used by a further diversity of actors to eventually create multiple GEBs.

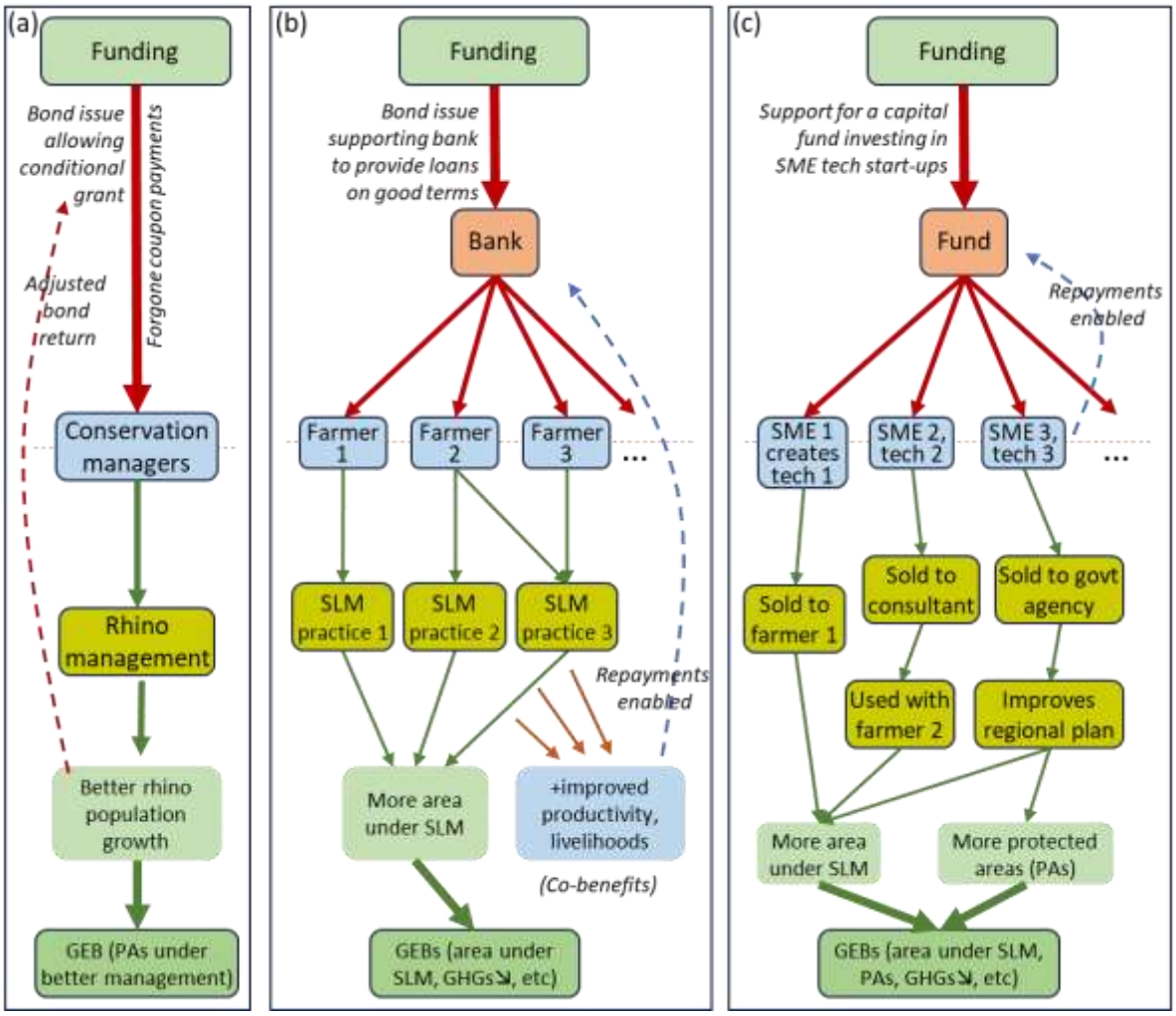

Figure 3. Three examples of increasingly complicated logics from funding to GEBs under different blended finance instruments, further explained in Table 2: (a) a simple performance-based instrument, where returns to the bond holders depend on the conservation outcomes, but the GEB logic is direct; (b) a loan-based instrument, where the loan recipients are all of a similar nature (here, farmers) but may be carrying out different forms of intervention (here, sustainable land management, SLM) to achieve GEBs; and (c) a capital investment fund that is investing in small and medium-sized enterprises (SMEs) that are each producing different forms of product or service that may be aiming to deliver different GEBs through different pathways. (For more on the finance logic, see Figure II in STAP's Information note #1.) GHG = greenhouse gas; PA = protected area.

Table 2. Three examples of blended finance project structures, summarizing their implications for describing the GEB logic and how it interacts with the related finance logic. (Rows correspond to panels in Figure 3.)

Structure of project	Examples	Implications for analysis and monitoring
(a) Funding ends up with one or more essentially similar recipients undertaking essentially similar interventions to achieve the same GEBs	Diagram based on "Rhino Bonds" project (GEF ID 10330)	Analysing a single impact pathway should suffice; technical assistance and monitoring can be very focused
(b) Funding ends up with a single class of recipients who are undertaking different interventions to deliver GEBs	Diagram based on Ecuador and Peru dry forests project (GEF ID 10852); similar logics exist in the SWIOFish3 project (via loans and grants) (GEF ID 9563) and the Fund for Energy Inclusion project for renewables (GEF ID 9043)	The impact pathway to recipients (here, farmers receiving loans) must branch off to map the logic for each of the major types of GEB-generating intervention (at least), so the appropriate technical assistance can be provided and the compatibility of each type of intervention with the blended finance instrument can be tested by monitoring at a relevant level of disaggregation over time
(c) Funding goes to diverse recipients that then market products to ultimate actors, who must use each product differently to deliver GEBs	Diagram based on AgVentures II (GEF ID 10336); similar logics exist in the AGRI3 (GEF ID 10497), LCF3 (GEF ID 10500), and Meloy Fund (GEF ID 9370) projects	The impact pathway needs to be outlined and monitored for each product or service developer and their market niche to test compatibility with the blended finance instrument and identify governance and technical assistance needs

In the example shown in case (b), even though all the actors are loan-taking farmers, their different SLM practices and contexts (e.g. soil types, levels of equity) will affect how rapidly both GEBs and livelihoods improve. The farmers' need to repay their loans may mean that this finance logic works better with some practices and contexts than others, so it is important to understand which practices are compatible with the blended finance model and which are not.

Case (c) is even more complicated, since the SMEs must sell their products or services into a pathway with at least one or two more actors, who all need to benefit enough to pay for the product or service as well as maintain the intent to create GEBs eventually. Some types of product will be far more likely to achieve GEBs than others. For example, solar pumps in a region where diesel pumps are currently used have a high prospect of reducing greenhouse gas emissions. By contrast, water efficiency technologies in a region without strong land-use planning controls may be at high risk of negative off-site effects ("leakage"), such as causing an expansion of irrigated land area (perhaps negating the water use benefits). A clear understanding of these prospective impact pathways is important to project design. For example, in the latter case, analysis might show that SMEs producing water efficiency technologies should only be supported in regions where there are strong land-use planning controls.

These examples show that blended finance projects vary greatly in how much the finance logic affects the complexity of the GEB logic. In some cases, the strength of that interaction is even less than in any of these examples; for instance, the GEF Council has recently approved a debt-for-nature swap project (GEF ID 11324) where there is almost no link between the GEB and finance logics. In this project, the GEF supports a development bank to provide a loan guarantee that enables a country to reduce the cost of some of its international debt, provided that some of the interest savings will be committed to

nature-positive actions.[18] This commitment will be fulfilled through grants to several Conservation Trust Funds; the GEB outcomes of the Trusts' actions will be monitored, with reporting to the GEF Agency (the development bank), to ensure the Trusts deliver as intended. In this case, the finance and GEB logics are largely unrelated: once the interest savings accrue, those savings are used in essentially the same way as in a non-blended finance project.[19]

Notably, the (partial) list of model types schematized in Figure 3 does not correlate strongly with the finance instrument categories listed in Section 1. For example, type (c) includes instruments subcategorized as *equity* (venture capital or investment funds) and *risk mitigation* (full or partial credit guarantees), and type (b) contains *risk mitigation* (credit guarantees) and *debt* (concessional loans) instruments. Conversely, there are instruments subcategorized as *risk mitigation* (credit guarantees) in both types (b) and (c). Thus, the GEB lens provides a different view of the projects to the finance lens.

As Sections A.1 and A.2 have shown, it is important that, in designing blended finance projects, the potential links between the finance and the GEB logics are recognized and that the expectations and assumptions arising from the logics are well aligned. Identifying some key features of the impact pathways delivering GEBs, such as the maturity of the interventions, the length and complexity of their impact pathways, and the diversity of pathways that are encompassed in a single instrument can help focus attention on the interactions between the logics.

This raises the question of how to outline these impact pathways in ways that are helpful but not too onerous, which is addressed in a preliminary way in Section A.3.

A.3 Describing GEB impact pathways

This section shows how explicit impact pathways may be developed within a broader theory of change and how these impact pathways vary in complexity with different blended finance models, making it important to be clear what model is being proposed.

The literature reviewed in STAP's Information note #1 (Section 2.3) highlighted how clear theories of change for impact pathways are key to ensuring the delivery of GEBs, measuring those impacts, demonstrating environmental additionality, and enhancing learning. The theory of change logic needs to explicitly account for both finance outcomes and (especially) GEBs. This applies at the project level *and* to the more detailed impact pathways leading to different GEBs, given that many blended finance projects aggregate multiple impact pathways through different investee companies or loan targets (see Figure 3).

STAP regularly recommends clearer theories of change for GEF projects.[20] What does this mean for impact pathways in blended finance projects? The general theory of change provided for blended finance proposals that STAP has seen tends to follow the outline of "GEF funding will be injected into some form of blended finance instrument in ways that incentivize private capital to invest in nature-positive activities, achieving both financial and environmental returns that would not otherwise have occurred" and does not detail the GEB impact pathways. However, the cases illustrated in Figure 3 show the need to ask how recipients of funding (as well as the eventual GEB delivery actors, where they are not the same) will be incentivized to deliver enduring GEBs and satisfy the financial requirements to provide a return on private capital.

[18] Debt-for-nature swaps are not an automatic panacea, and their logic still needs careful appraisal for other reasons: see Standing (2023) and https://www.cffacape.org/publications-blog/gabon-debt-ocean-swap-tnc.

[19] In fact, the funds that the GEF has set aside as a guarantee of the debt swap will gradually be released as the debt decreases. If the Trusts perform well, these funds will be converted over time to an additional grant to the Trusts. However, this "convertible performance-based instrument" aspect does not involve private finance.

[20] For example, STAP's Theory of Change Primer (Stafford Smith 2020).

In simpler cases, like the Rhino Bonds project (Figure 3a), it is possible to outline the impact pathway to delivering GEBs in the project design: in this example, bonds are issued but the bondholders forgo their regular coupon payments, which are instead directed to conservation managers to protect rhinos. Increases in rhino populations trigger increased final returns on the bonds using a performance-based grant from the GEF. The theory of change should explain how conservation managers are motivated to achieve increasing rhino populations – presumably because future funding will depend on investors receiving more than minimal returns on their bonds as a result of healthy rhino numbers. The incentive for success and its measurement are built into the conditions driving the bond returns.

Model (b) in Figure 3 is more complicated: the interventions and incentives to achieve GEBs are relatively easy to define but depend on the context – the farmers could adopt a wide range of interventions to deliver GEBs. In other projects like this, the actors could be renewable energy companies or waste managers. Although the specific actors are not initially known, it should still be possible to lay out the general pathways by which GEBs are likely to be achieved (e.g. the range of SLM practices that could be adopted) and to analyse which of these are likely to deliver GEBs and financial returns fast enough. In the case of the Ecuador and Peru dry forests project (GEF ID 10852; not yet implemented), these pathways have been considered, with a plan to implement supportive technical assistance to ensure that loans will only be made to farmers who are part of a community conservation agreement that has defined suitable practices. It is possible to consider what will incentivize the end recipients (here, farmers) to take up financing (here, loans), and how to motivate them to deliver enduring GEBs, as well as improve their livelihoods enough to enable the loans to be repaid, rather than put the end recipients (here, farmers) into more debt.

Model (c) is still more complicated. For each pathway supported (through SME1, SME2, etc.)the immediate recipients of finance (the SMEs) need incentives to produce GEB-relevant products and services, and there needs to be confidence that these products and services will be purchased and eventually applied to deliver GEBs. These impact pathways can be outlined only in general terms before the funding facility is established, but there should be a clearly described process that will define each impact pathway as funding recipients are identified.

In all these cases, the overall project theory of change should explore in general terms what will motivate the actors responsible for eventual GEB delivery, and the financial intermediaries, to maintain a focus on GEBs. **Project proposals should include a plan to show how these issues will be revisited and adjusted as implementation progresses.** This may help identify where technical assistance might be helpful, as well as address the governance and incentives needed to ensure that financing managers pursue GEBs as well as financial returns.

These logics are rarely spelled out in blended finance projects; in a few cases, an implicit version of the logic may be found in how the expected GEBs are calculated. However, theories of change need to explicitly address the implications for governance, training, and monitoring. It is worth designers and reviewers unpacking the logic of proposals in the ways shown in Figure 3, since the consequences for understanding the GEB impact pathways are very different and increasingly more complicated from model (a) to (b) to (c).

Figure 4 shows the delivery logic for one set of agriculture technology (AgTech) investments, derived with some simplification from the proposal for Yield Lab Opportunity Fund I (GEF ID 11066); this outlines how GEBs were calculated for "Area of landscapes under sustainable land management in production system".[21] The project assumes that the Yield Lab Opportunity Fund will invest in 27 companies, 70% of which will deliver AgTech relevant to this GEB. Half of these companies will each reach 5,000 small farms directly; the other half will reach 20,000 farms via 10 corporate clients. The

[21] p.25 in the Project Information Form for GEF ID 11066 (see: https://www.thegef.org/projects-operations/projects/11066)

farms have a mean area of 165 hectares, 35% of which is assumed to end up under SLM, resulting in a total of ~13.6 million hectares of sustainably managed land by the end of the 10-year term (i.e. 0.7*27*(5000+20000)/2 *165*0.35). This logic is summarized in Figure 4(a). There are some heroic assumptions in this chain (that all clients will adopt the AgTech, that the use of the AgTech will qualify as SLM, and so on), but this is sufficient to identify some issues that a draft theory of change should address to maximize the likelihood of the GEBs being delivered (and to identify the assumptions that should be monitored to see if they are justified).

A simplified theory of change can target the twin goals articulated for the blended finance program of (i) delivering GEBs and (ii) engaging more private finance. Working backward in Figure 4(b), the farmers need to be motivated to apply the AgTech practices over the long term, and one way this might happen is if early adopters of the practices are supported and well monitored so that the economic and environmental benefits of practices are demonstrated, resulting in a strong movement among farmers to take up those practices (e.g. the AgTech may help farmers reduce fertilizer inputs and costs, thereby also reducing chemical run-off, while achieving the same level of production). The AgTech company involved might then market its products strongly, but only in contexts where it is known they will work well. The resulting returns to the AgTech company enable it to repay its capital injection and make the fund perform well, which, with suitable publicity, may enable the model to be repeated with more private capital. Figure 4(c) provides a (very) simplified theory of change diagram for the whole blended finance project, which could be further developed even before the specific AgTech investees are known. The theory of change pathways here are conceptualized around delivering SLM practices, but another investee company might be delivering land-use planning services or tree cultivars, with a different set of pathways.

Whether these details are right or not, this example illustrates that elaborating the impact pathway helps identify assumptions about the uptake and success of its various interventions that deserve testing through monitoring (e.g. Are the economic benefits enough to motivate farmers to buy the AgTech? Does it work everywhere? Can early trials engage the farming community's interest?). The theory of change analysis also highlights a variety of actions that might be undertaken by a technical assistance facility (e.g. monitoring and learning about successful contexts), including providing feedback to the GEF Agency in its role in the governance of the fund's choice of investments.

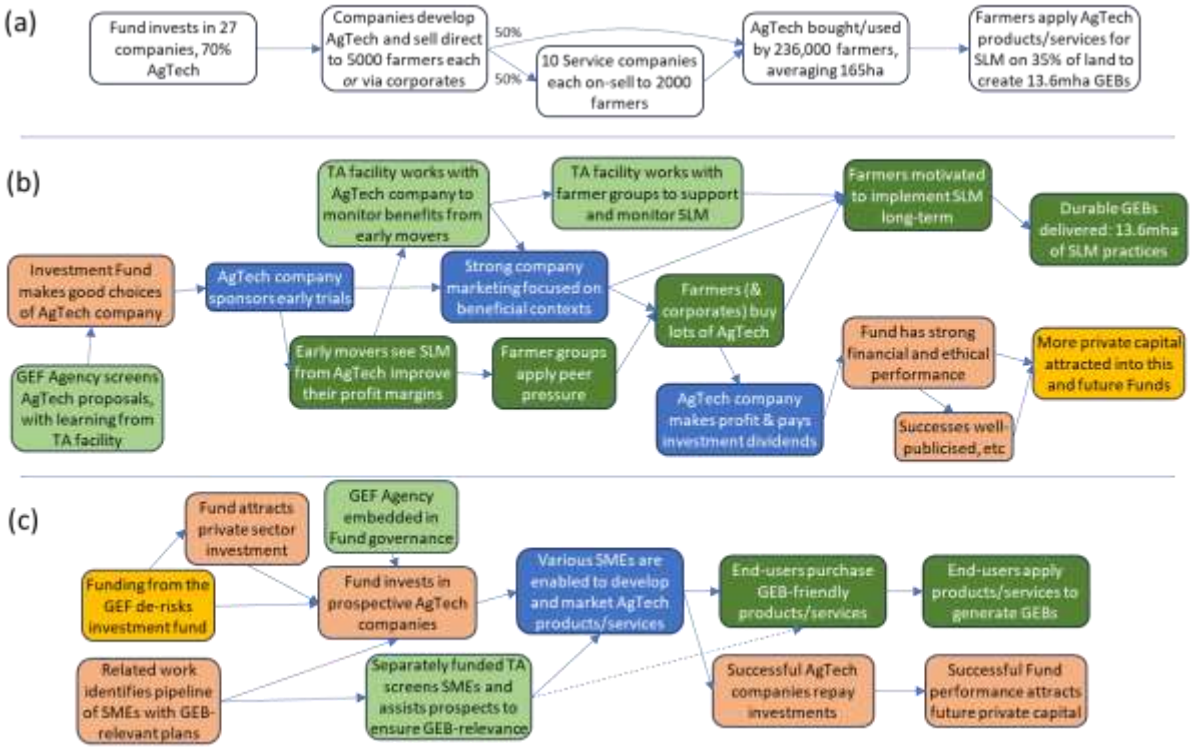

Figure 4. Analysing the logic behind an example of the blended finance model depicted in Figure 3(c): (a) the basis of calculations used by one project to assess its potential contribution to one GEB; (b) a simple but partially elaborated theory of change for this impact pathway, from a blended finance fund investing in an AgTech company that markets its products to farmers, partially identifying what might motivate them to deliver the GEBs; (c) a higher-level simple theory of change for the whole fund, working through investments in many different AgTech companies. Colours loosely characterize funding sources (orange), financing arrangements (pink), AgTech company actions (blue), actors delivering GEBs (dark green) and support by the GEF Agency and the TA facility (light green). TA= technical assistance.

A.4. Conclusions

This information note focuses on the features of the GEBs being targeted by blended finance projects and on the length and diversity of the impact pathways by which the GEBs are to be achieved. It seeks to illuminate aspects of the GEB logic that interact with the finance logic. These key influences on how the finance and GEB logics interact are not captured by either the finance-oriented criteria or the requirements for achieving GEBs that designers of GEF blended finance projects must address. As this annex has shown, the potential complexity of these interactions also varies in systematic ways; these ways are not well correlated with the usual classification of blended finance instruments, and they should be taken into account explicitly in designing blended finance projects.

Annex B: GEF blended finance selection criteria in February 2024.

The Global Environment Facility (GEF) 2020 guide to blended finance[22] contains selection (and eligibility) criteria, aspects of which are echoed in the 2022 non-grant instrument policy update.[23] These criteria have been updated somewhat in recent calls for blended finance projects. This is the latest version of such criteria from the February 2024 blended finance call:[24]

1. **Projects that support recent updates and commitments by the global environmental community** including – but not limited to – the Kunming Montreal Global Biodiversity Framework.

2. **Scalability**. Specific emphasis will be placed on financial structures or investment platforms aimed at scaling-up instead of a singular or unique project that does not scale. Examples include:

   a. Investment platforms
   b. Capital markets transactions
   c. Structured finance
   d. Crowdfunding
   e. Value chain financing
   f. Investments aligned with GEF-8 Integrated Programs.

3. **Appropriate and enhanced co-financing ratios** with special emphasis on co-financing ratio from private sector sources and in the context of each focal area and country capacity.

4. **Financial Innovation**. This criterion will be evaluated based on the information provided in the termsheet and the financial structure described in the PIF/PFD. Projects that use the techniques of blended finance to pioneer, validate, and scaleup private sector investment are encouraged. Projects seeking to mobilize investment through capital markets, through new financial instruments, structured finance vehicles, and de-risking investment will be a priority in GEF-8.

5. **High financial additionality**. In the termsheet, each proposal must clearly document minimum concessionality to avoid crowding out private sector investment with a justification on how the project cannot be fully self-financed without GEF support, and hence that there is additionality in the funding provided by the GEF.

6. **Capacity to generate reflows**. Any financial returns, gains, interest, premium or other earnings and remaining principal will be reflowed to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Agencies are required to submit the expected schedule of reflows in Annex B. Additional detailed information on reflows will be required ahead of CEO endorsement.

7. **Innovative use of proceeds**. GEF will seek to support investments which invest in new technologies, new market-based approaches or market mechanisms (certificates; credits that can be monetized) or business models that have not yet been proven to be ready for commercial finance alone.

8. **Global environmental benefits**. Proposals must be aligned with GEF-8 focal areas and Integrated Programs and will be evaluated on their capacity to generate global environmental benefits.

[22] GEF (2020), p.8
[23] GEF (2022a)
[24] See pp.3-4 of the third call for proposals of the GEF-8 blended finance global program. https://www.thegef.org/documents/third-call-proposals-gef-8-blended-finance-global-program

6. References

DFI Working Group. (2023) DFI Working Group on Blended Concessional Finance for Private Sector Projects JOINT REPORT, MARCH 2023 UPDATE. ADB. 61 p. url: https://www.adb.org/sites/default/files/institutional-document/876671/dfi-bcf-joint-report-2023-update.pdf

GEF. (2020) Guide for Understanding and Accessing Blended Finance at the Global Environment Facility. The Global Environment Facility, Washington. 36 p. url: https://www.thegef.org/publications/guide-understanding-and-accessing-blended-finance (accessed Jul 2021)

GEF. (2022a) GEF Blended Finance Global Program and Non-Grant Instruments Policy Update (Doc GEF/C.63/12). Global Environment Facility, Washington DC. 24 p. url: https://www.thegef.org/sites/default/files/documents/2022-11/EN_GEF_C.63_12_GEF%20Blended%20Finance%20Global%20Program%20and%20NGI%20Policy%20Update_%20__1.pdf

GEF. (2022b) Guidelines on the Implementation of the GEF-8 Results Measurement Framework. Global Environment Facility, Washington DC. url: (https://www.thegef.org/sites/default/files/documents/2022-09/Results_Framework_Guidelines_2022_06_30.pdf)

Kwon T, Panulo B, McCallum S, Ivankovic K, Essa Z. (2022) Blended Finance: When to use which instrument? Initiative for Blended Finance, University of Zurich, Zurich. 72 p. url: https://www.csp.uzh.ch/en/research/Practitioner-Research/Blended-Finance-When-to-use-which-instrument.html (accessed Nov 2023)

OECD. (2021) OECD DAC Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals. OECD Publishing, Paris. 12 p. url: https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf

Omukuti J. (2024) The need for a climate-resilient development-aligned framing of innovative climate finance. Current Opinion in Environmental Sustainability 66:101400. DOI https://doi.org/10.1016/j.cosust.2023.101400.

Penna CCR, Schot J, Steinmueller WE. (2023) Transformative investment: New rules for investing in sustainability transitions. Environmental Innovation and Societal Transitions 49:100782. DOI https://doi.org/10.1016/j.eist.2023.100782.

Stafford Smith M. (2020) Theory of Change Primer. Scientific and Technical Advisory Panel of the Global Environment Facility, Washington. 41 p. url: https://stapgef.org/resources/advisory-documents/theory-change-primer

Stafford Smith M, Metternicht G, Bierbaum R. (2022) Policy Coherence for the GEF. A STAP Information Brief. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC. url: https://www.stapgef.org/resources/policy-briefs/framing-policy-coherence-gef

Standing A. (2023) The Financialization of Marine Conservation: The Case of Debt-for-Ocean Swaps. Development 66(1):46-57. DOI 10.1057/s41301-023-00379-y.

STAP. (2023) Incorporating Co-benefits in the Design of GEF Projects. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC. url: https://www.stapgef.org/resources/advisory-documents/incorporating-co-benefits-design-gef-projects

STAP. (2024) STAP Information note #1 on blended finance. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC. url: https://www.stapgef.org/index.php/resources/information-note/stap-information-note-blended-finance

Thompson BS. (2022) Impact investing in biodiversity conservation with bonds: An analysis of financial and environmental risk. Business Strategy and the Environment 32(1):353-368. DOI 10.1002/bse.3135.