ASSESSING VALUE FOR MONEY IN PRE-ARRANGED FINANCING FOR DISASTERS: A PRACTICAL FRAMEWORK

CENTRE FOR DISASTER PROTECTION

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GUIDANCE NOTE

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About this document

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ACRONYMS

ADB	Asian Development Bank
ARC	African Risk Capacity
CAT	catastrophe
CBA	cost-benefit analysis
CCRIF	Caribbean Catastrophe Risk Insurance Facility
DREF	Disaster Response Emergency Fund
DRF	disaster risk finance
GAD	Government Actuary's Department
IFRC	International Federation of the Red Cross and Red Crescent Societies
IDA	International Development Association
OPM	Oxford Policy Management
PAF	pre-arranged finance
QA	quality assurance
VfM	value for money

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INTRODUCTION

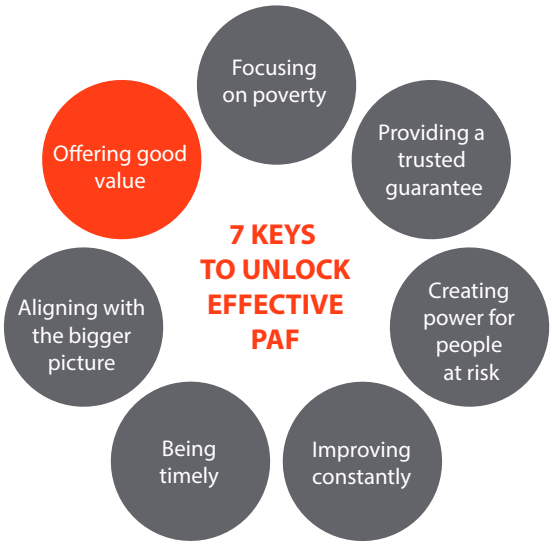
Background

Pre-arranged finance (PAF) as a discipline of international development supports countries and organisations to shift from reacting to disasters to being better prepared for them. It focuses on having financial instruments and response plans in place before disasters happen, so funding can be released at the right time and reach affected people when they need support.

The range of pre-arranged financing instruments available to countries and organisations has been growing (including contingency funds, contingent loans, insurance, catastrophe bonds, anticipatory action products, climate resilient debt clauses and so on). This is a positive development but can leave people unsure how to choose between instruments and approaches. It is a complex decision, requiring the consideration of many factors related to both how money becomes available (the 'money in' side) and how it gets distributed to those who need it (the 'money out' side).

The Centre for Disaster Protection has developed and published seven important keys to effective PAF (see Figure 1); offering good value for money (VfM) is among them. Although it makes intuitive sense to use financial products that provide the most cost-effective protection, taking into account all associated costs such as fixed costs incurred during the design phase, this does not mean that the cheapest option is necessarily the best. A broader consideration of options will be necessary to ensure that a pre-arranged financing product is chosen that can meet the needs of vulnerable communities and the objectives of those paying the costs.

Figure 1: The Centre for Disaster Protection's 7 keys to unlock effective PAF



Source: Adapted from Hill & Scott, 2020.

Purpose of this note

The Centre for Disaster Protection frequently gets requests from countries or organisations to help them understand which pre-arranged financing instrument or approach can help them to reduce the protection gap ahead of disasters while also offering the best VfM. So far, these analyses have been entirely bespoke, are highly complex and rarely published. Hence, there are few resources online that other organisations can use to answer similar questions. This Guidance Note has been developed to help the increasing number of countries and organisations that are considering or using pre-arranged financing instruments but are unsure how to approach VfM analysis.

The content is mainly based on the Centre's experience of supporting national governments and international agencies with VfM analyses over the past five years. It also captures lessons from other published VfM studies, and perspectives gathered in interviews with people who use and develop similar studies. The Guidance Note includes several case studies; unfortunately, few are publicly available, which has limited the number of examples that can be provided. More links to case studies are available in the Additional Resources section of this note.

The note aims to provide the reader with an overview of VfM and how it relates specifically to PAF, as well as presenting a flexible framework the Centre has developed to approach the process of conducting VfM analysis. This framework does not provide granular guidance on VfM analysis. Instead, it sets out seven broad steps in the process that will help in preparing for, designing, commissioning and conducting a VfM study. By the end, readers should be confident in their understanding of the dimensions of VfM and its potential to support the design and selection of pre-arranged financing approaches. Readers will also have a clear sense of the different steps required, and possible methodologies to produce useful findings in support of decision-making.

Primary audience

This Guidance Note will be of greatest use to organisations or countries looking to (1) set up new pre-arranged financing instrument(s) to respond to disasters;(2) improve the design of existing pre-arranged financing instruments; and/or (3) understand the optimal combination of financial instruments required to help manage the risks they face. It will be useful to those wanting help to understand both the qualitative and quantitative considerations to aid decision-making. The note will also be relevant reading for other audiences that have an interest in potentially funding, providing or implementing PAF in the future, for example, donors or humanitarian agencies new to the topic.

Limitations

This Guidance Note will help the reader understand an overarching process for conducting VfM analysis, especially the prior thinking and clarifications that are needed to select a methodology and commission VfM analysis. It will also help the reader to understand different VfM approaches and showcase recent examples. However, it is not an exhaustive step-by-step guide for conducting quantitative or qualitative VfM analysis – the work and analyses will still need to be commissioned. Instead, the note is more about helping the reader know why a VfM analysis is needed, what to commission, what expertise is needed, what prior work needs to be done internally by the sponsor organisation and how to use the findings.

PAF is still an emerging topic, with a growing evidence base. VfM studies are increasingly being commissioned, although they are not always consistently done or publicly shared. Very few VfM studies have been published, which has limited the practical examples and case studies that can be included in this note. The note will therefore be updated with new material as more studies are conducted and the Centre's own portfolio of work and understanding in this area evolve.

The Centre supports and encourages organisations to publish examples of VfM analysis of pre-arranged financing instruments to contribute to good practice and shared learning.

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VFM ISN'T JUST ABOUT COST

What is VfM?

There is no internationally recognised definition of VfM (King et al. 2024; NAO n.d.). The UK government Green Book defines VfM as 'finding the best way to use public resources to deliver policy objectives (optimising the value to society and maximising net improvements in social welfare)' (HM Treasury 2022). In summary, VfM focuses on making the best use of the resources you have to achieve the objectives you want to see. **VfM is not just about minimising costs, as the cheapest option will not necessarily create the greatest value for beneficiaries.**

The term is predominantly used in the public and non-profit sectors, where there is a need to demonstrate good use of resources, outside a focus on profit maximisation. Over recent years, VfM analysis has increased in the context of international development. Aid budgets have been reduced for many organisations, creating a pressing need to demonstrate effective use of resources and show accountability to donors and taxpayers, especially when new approaches are being trialled.

VfM for pre-arranged finance

VfM in relation to PAF refers to maximising the impact of each dollar spent responding to disasters. VfM analysis can help to demonstrate the potential effectiveness of new and innovative financial approaches compared to more traditional methods of financing disaster response. In particular, where pre-arranged financing products are supplied from the private sector to the public sector – for example, insurance or other capital market-based instruments – then donor agencies, NGOs and humanitarian agencies need to conduct analysis to be sure that the products on offer represent the best possible use of available funds.

However, VfM analysis can be conducted using different methodologies and metrics, each offering different conclusions. This is a clear limitation: the analysis can be manipulated to present a particular instrument favourably. For this reason, impartiality on the part of those conducting the analysis is very important. Another limitation is that the findings may not identify a clear 'winner' or 'right choice', and the organisation will have to consider priorities and trade-offs.

Defining 'value'

The concept of value is hard to quantify and measure. Value is a complex concept and different stakeholders will perceive it differently, depending on their perspective and objectives. For example, a pre-arranged financing instrument may be viewed as good value to the donor agency paying for it because it was the lowest-cost option, but if it was too slow to pay out while needs escalated, beneficiaries are unlikely to agree. Similarly, a ministry of agriculture may place great value on an instrument that would pay out regularly for smaller disasters, whereas a ministry of finance may be more concerned with finding sources of finance for larger-scale, infrequent events or place greater value on the reliability of instruments.

VfM is therefore not just about minimising costs, as the cheapest option will not necessarily create the most value for beneficiaries. We recommend using a 'value statement', which is explained below, as the first step to agree how value will be measured.

An organisation considering different pre-arranged financing instruments should consider multiple aspects of value in addition to ensuring the lowest cost possible. For example, it may want to ensure the greatest amount of coverage across the affected population, with an instrument that pays out most reliably for priority risks in a certain country context and allows for robust delivery channels (or 'money out' channels) that target the most vulnerable groups. However, these different elements of value may be in conflict with each other; for example, the cheapest option may not offer the best coverage or may not have strong 'money out' mechanisms to reach those affected by a disaster. This example demonstrates that determining VfM is much broader than just considering costs, and therefore VfM analysis incorporates more than just cost-benefit analysis (CBA). Judgement and trade-offs will likely be necessary in order to consider the overall picture and make a decision.

There is no 'right way' to perform VfM analysis; different approaches and methodologies are available (see Additional Resources section for some suggestions). Each organisation will need to embark on a process to decide what approach is most suitable for it to get the information it needs. The Centre for Disaster Protection's framework presented below has been designed to help in this process by identifying the steps that practitioners would need to take to have a multi-dimensional view of what good VfM is in the context of pre-arranged financing instruments.

When is VfM analysis useful?

VfM analysis can be used at multiple stages of a project to serve different purposes:

1. It can be used at an early stage to inform decision-making prior to selecting a pre-arranged financing instrument or help choose between options. This note is mainly focused on analysing VfM at this early stage of selection and design, which is recommended so decisions are made based on analysis rather than pre-determined outcomes or political pressures.

2. VfM analysis can also be useful part-way through implementation, to consider whether adjustments can and should be made, potentially with more information and data than were available at the outset. Similarly, VfM analysis that was done before implementation began can be repeated periodically to check that assumptions and metrics still hold true. For example, accurate information on costs may not have been available before a product's design was complete. In this way, VfM can be used for performance management and accountability. An example of this is the CBA of the African Risk Capacity (ARC): the CBA was initially commissioned before the initiative began in 2013 (Clarke and Hill 2012) and was then repeated at multiple intervals as new data and understanding emerged (see, for example, Kramer, Rusconi and Glauber 2020).

3. VfM analysis can also be done retrospectively; for example, as part of a larger ex-post evaluation to assist with wider learning objectives.

As well as supporting organisations with VfM analysis, the Centre offers a quality assurance (QA) service. QA reviews are lighter-touch, broad one-off assessments of financing products that have already been selected for implementation. They have a much quicker turnaround than VfM studies. However, they are only looking at a single solution, without comparing it to alternatives.

Who might want to consider VfM analysis?

Multiple actors stand to benefit from VfM analysis. They include:

- **National governments** that want to assess options or possible combinations of pre-arranged financing instruments for managing different risks in their countries.
- **Donor agencies** that want to understand the potential benefits of different pre-arranged financing instruments in different regions and country contexts to support effective allocation of aid or assess whether a specific initiative is worthwhile.
- **Humanitarian agencies and NGOs** that want to understand the potential costs and benefits of non-traditional or innovative approaches to financing disaster response, possibly to increase the likelihood of securing internal and external support.
- **Risk finance providers** such as insurers that want to refine their products or better understand how they could be used alongside others for maximum results.
- **Multilateral development banks or multi-donor funds** that want to build understanding around different instruments, allocate premium subsidies or support sound investment decisions (e.g. instrument provision).

These different stakeholders may all have different reasons for commissioning VfM analysis, as well as different institutional priorities when using the analysis. The reasons given above include supporting decision-making and cost-effective use of funds, but some actors may want the analysis to justify an action they have already taken, to support a particular instrument or placate a funder. Those conducting the analysis will have to navigate these different incentives to provide high-quality and impartial analysis.

What is outside the scope of VfM analysis?

VfM analysis is a useful tool for PAF design, assessment, implementation and evaluation. However, it cannot answer every question that actors may have as they select and improve pre-arranged financing instruments and approaches that are available. For example, VfM analysis is theory based, so it focuses on what is expected to happen – not necessarily reflecting the reality on the ground. This is why it can be helpful to repeat VfM analysis over time or complement it with a process evaluation that checks that internal processes are progressing as expected and highlights any variances. It may also be useful to complement VfM analysis with other types of evaluation, such as impact evaluations where change and causality are measured over a longer time period.

VfM analysis typically gives a snapshot in time rather than a view on how the situation may evolve in future or *why* the situation has evolved as it has. For example, it may include an assessment of insurance premium costs, but not an explanation of how these might change in future or why they are at current levels.

Any form of analysis is limited by the available data, time, and resources. PAF is a complex topic, involving lots of actors, instruments, parameters, and relevant contextual factors. Pre-arranged financing instruments are also most needed in low- and middle-income countries where data may be scarce. These factors mean that any VfM analysis will have its limitations, for example, it may only be possible to plausibly compare a small number of alternatives.

Finally, VfM analysis will not necessarily give you a single 'right' answer or set out a clear course of action. It may simply highlight trade-offs between scenarios that will then have to be discussed with management and prioritised. In this case, the analysis will have to be combined with additional strategic information to support decision-making.

Commissioning VfM analysis

VfM analysis is not yet a routine part of designing, selecting or evaluating a pre-arranged financing instrument and can easily be overlooked. Unfortunately, there is not yet a standardised process or clear actor that is considered responsible for paying for and commissioning VfM analysis for pre-arranged financing instruments. Sometimes donors, fund implementers or development banks take on the role, but VfM analysis does not yet have a clear home within the global landscape of actors and processes.

There is little transparency and knowledge sharing at the moment when it comes to what good PAF looks like, which means that actors needing a VfM analysis are likely to have to commission the work from an external party, rather than conduct it in-house. However, alongside the Centre, currently only a handful of other organisations and individuals have experience in applying VfM methodologies to PAF. When commissioning VfM analysis, it is important to ensure the following requirements are incorporated into the terms of reference and selection process.

Impartiality: Those conducting the VfM analysis should be independent and not stand to benefit from the selection of a particular instrument or approach. This will ensure they can be trusted to deliver unbiased findings. In rare cases, VfM analysis can be conducted in-house rather than by an external independent organisation, but if this is the case then staff should be insulated from any internal political pressure to deliver a particular outcome. It will help to consider and transparently record different stakeholder perspectives and institutional incentives throughout the process, to strengthen the impartiality of the analysis.

Collaborative and trust-based relationship: Those conducting the VfM analysis will need to work closely with the organisation considering the pre-arranged financing instrument, as well as potentially with the different providers (usually from the private sector). This is likely to involve sharing sensitive information. The findings of the VfM analysis are likely to be of most use when the work has been done in close partnership with the organisation or country that will be using the analysis, rather than at a distance.

Long time horizons: The pressure to get an instrument up and running, as well as resource constraints, may lead to short time horizons for VfM analysis. However, it is important to factor in sufficient time for consultation and working through each of the steps outlined below, as well as iteration and refining findings. The Centre's experiences have shown that having time to refine findings and potentially revise an instrument or proposed approach can lead to much more suitable final decisions regarding PAF.

3

THE CENTRE FOR DISASTER PROTECTION'S APPROACH TO VFM ANALYSIS

The Centre has worked with a number of organisations to collaboratively analyse the VfM of different pre-arranged financing instruments and approaches. A framework for approaching VfM analysis has emerged from these projects, organised into a seven-step process. It can be used by any organisation delivering or supporting PAF, and aims to ensure VfM analysis meets organisational needs, answers key questions, reflects the overall context and combines different types of information to help ensure decision makers have robust analysis.

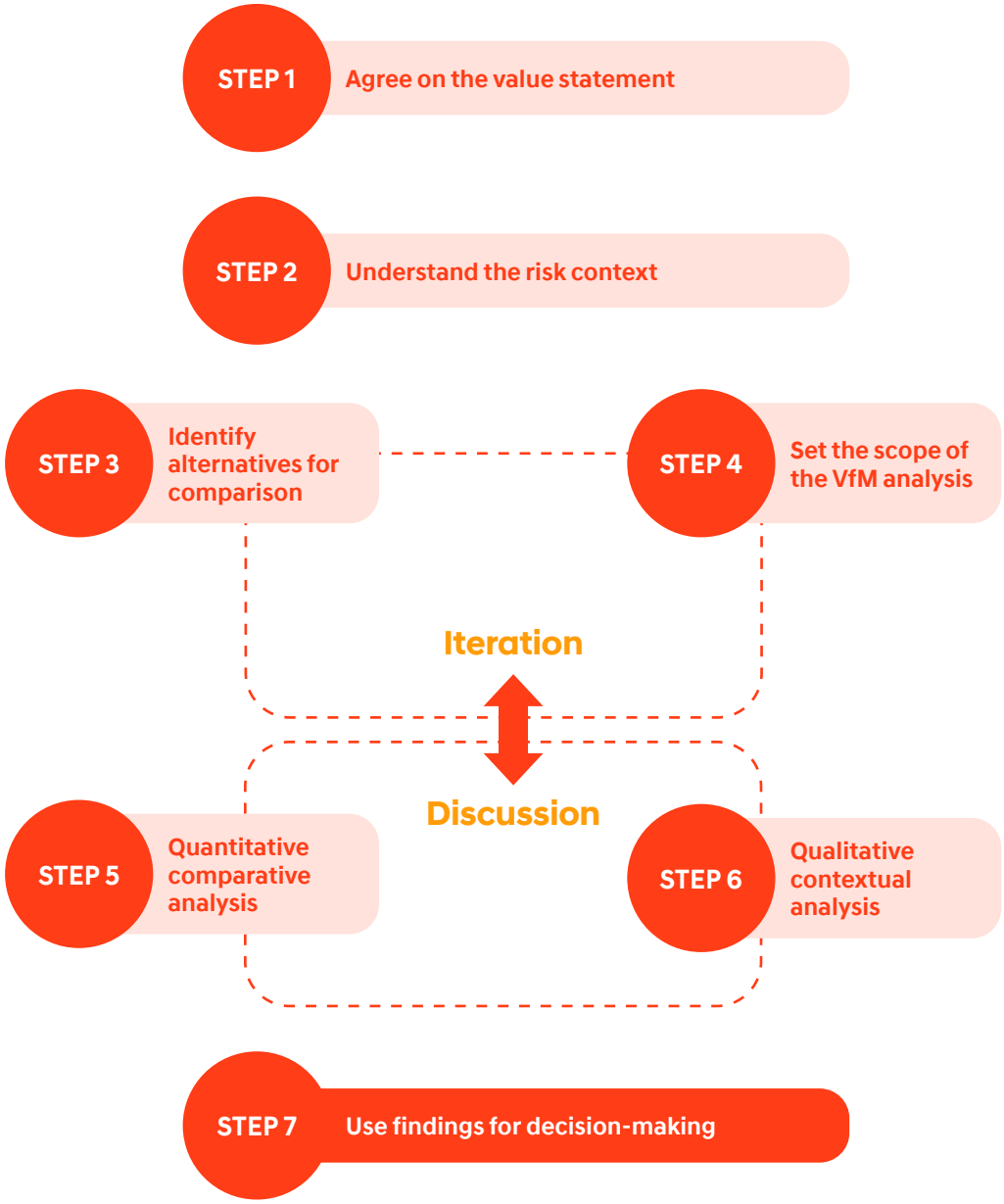
However, this framework is not intended to be a rigid, prescriptive approach, and different methodological approaches and data collection methods can be incorporated within it. The Centre views the VfM framework as a work in progress that would benefit from additional testing and welcomes feedback to further refine and shape the steps.

A framework for VfM analysis in relation to PAF

The diagram below summarises the seven steps the Centre recommends for approaching a VfM analysis. These are presented as a sequential process but there may be situations where a slightly different order to some steps is preferred. In particular, the quantitative and qualitative analytical steps are best done as part of an iterative process (shaded in red in Figure 2), where findings can be developed. The steps on 'identifying alternatives for comparison' or 'setting the scope' may need to be revisited (represented by the red arrow in Figure 2), before final conclusions can be drawn. This approach is based on the experience from the Centre's interaction with stakeholders during VfM analyses.

The use of VfM analysis for decision-making, accountability and learning is explored in Step 7, which ideally should involve the publication of the findings. The Centre advocates greater transparency in relation to PAF and publishing more VfM studies would help global learning and accountability.

Figure 2: The Centre for Disaster Protection's VfM framework



Source: Authors' own.

Step 1: Agree on the value statement

At the very beginning of the process, it is important to agree on a specific definition of the added value that the organisation or country hopes to gain from the new pre-arranged financing instrument or approach. This is the so-called 'value statement' and will build on the existing approach to disaster risk management and intended strategy and ambition. The value statement can be thought of as setting out the value proposition the analysis is ultimately seeking to investigate. Being clear on the specific value the pre-arranged financing instrument or approach under consideration is expected to create will help to shape the rest of the analysis.

The value statement will be different depending on the organisation or country's objectives and priorities in using PAF. For example, a donor agency may be considering supporting the development of a new pre-arranged-financing product because it wants to increase coverage in a region; a humanitarian agency may be considering how it can increase the predictability of or diversify its sources of emergency funding; or a national government may be keen to increase the speed and size of the support it offers to disaster-affected populations. Each of these ambitions will lead to different value statements, which in turn will inform the measurement criteria to be used in the analysis (see Box 1 for examples of value statements).

BOX 1: EXAMPLES OF VALUE STATEMENTS

The Centre for Disaster Protection worked with an African government that was looking to achieve the following specific value from its DRF strategy:

[to] improve the coverage and quality of disaster risk financial and budgetary instruments to mobilise resources (beyond historic levels) for disaster response from a more diverse range of sources.

This value statement meant that the VfM analysis focused on possible combinations of several instruments that would provide suitable coverage given the country's identified priority disaster risks.

The Centre worked with a humanitarian emergency fund and developed the following value statement:

To maximise the humanitarian impact that the fund can deliver, we seek to increase its capacity [available funds] to minimise the risk of exhaustion of the fund in extreme years using insurance in a cost-effective manner.

This value statement meant that the VfM analysis focused on how a cost-effective insurance product could best be structured in order to reliably replenish the fund in extreme years.

Ideally, multiple internal stakeholders will be involved in the process of agreeing on the value statement to ensure a broad range of perspectives are captured and that the final analysis meets the needs of all users. For example, a ministry of finance within a government may have a different perspective on the most crucial elements of added value of crop insurance compared with a ministry of agriculture. It can take some time to get full agreement across stakeholders on the value statement, but it is important not to rush this step to ensure the statement is as useful as possible, reflecting the views of all relevant stakeholders and giving them ownership over the outcome sought.

Some organisations have found a workshop to be a useful approach in developing a value statement, so different stakeholders provide input at the same time. It may be helpful to use or develop a theory of change as a starting point for these discussions.[1] This can help to identify the long-term change and associated outcomes

1 Theories of change are widely used in the development sector to aid programme design, monitoring and evaluation. For more information, see: UK Aid Connect. (n.d.).

that an initiative is expected to produce. For example, Tufts University started its VfM analysis of anticipatory insurance for the United Nations Office for the Coordination of Humanitarian Affairs by developing and testing a theory of change with stakeholders to identify critical outcomes (see Poole et al. 2024).

The value statement should be kept as clear and measurable as possible, as it is the basis for developing the specific criteria that different options will be measured against during the VfM exercise. If there are a lot of different elements to the criteria, the analysis will be more complicated. An example of a more complex, organisation-wide value statement is presented in Box 2.

On the next page are some guiding questions and points to consider when developing a value statement.

BOX 2: USING A THEORY OF CHANGE APPROACH TO IDENTIFY A VALUE STATEMENT AT ORGANISATIONAL LEVEL

ARC has been the subject of multiple VfM analyses by different stakeholders over its 10-year history. A recent VfM study by Oxford Policy Management (OPM) involved using ARC's theory of change to develop a 'theory of value creation'.[2] This essentially served as a value statement, as it aimed to define ARC's core value proposition from the perspective of countries, beneficiaries and donors.

The team identified five critical factors that underpinned ARC's ability to provide value, which could be written into a statement as follows:

In order to 'i) smooth household consumption and reduce the need for negative coping strategies and ii) provide greater predictability and smoothing of donor and sovereign humanitarian spending and iii) increase national ownership over··· risk planning, ARC will provide reliable and timely resources and support increased country capacity to effectively plan for and respond to shocks.'

Aligned with the theory of value creation, nine sub-criteria were selected based on their ability to collectively cover the most critical aspects of VfM for ARC. OPM's VfM assessment of ARC is an example of a complex VfM study, where the value statement was multi-faceted, reflecting the size of the initiative and the numerous stakeholders whose perspectives were included. Their approach illustrates the importance of taking time at the beginning of the analytical process to make the value proposition explicit, to be able to measure and evaluate it.

2 For more information, see: OPM (2022).

STEP 1 Guiding questions – Agree on the value statement

Aspect	Considerations
Stakeholders	Who should be involved in developing the value statement?
	Are different stakeholder groups adequately represented to get a broad perspective on the value of the instrument or approach?
Process	What materials exist that could provide a starting point (e.g. a concept note, a theory of change, etc.)?
	What is the best process for getting input and feedback on the value statement?
	What is the timescale? Is there sufficient time to gather feedback on and iterate the value statement?
	Who should 'hold the pen' on defining the value statement?
Content	What would be the intended benefits of the pre-arranged financing instrument(s) or approach(es)?
	What is the overarching purpose or ambition for the pre-arranged financing instrument or approach?
	What do you hope to improve on your current approach to managing disaster risk?
	What outcomes would indicate success?
	How should different aims and features be prioritised? What types of value are priorities?
	What are the humanitarian, development and fiscal benefits of using the new pre-arranged financing instrument or approach?
Approval	Who should validate the statement?
	Who should sign off the statement?
	Is there any reason to believe the value statement may need to change in the near future (e.g. change in strategy)?

Step 2: Understand the risk context

Before investigating new options for risk finance, looking at what approaches are already in place ensures that new resources and expertise are applied at the appropriate scale, reducing duplication and gaps in response. It is useful to fully understand the existing instruments (their coverage and the criteria for triggering funding), and the approaches and strategies that are currently used for disaster response, and to establish what is driving the need for alternative options to be considered. This will be specific to the organisation and the information should feed into the VfM analysis itself (in the following steps).

To build the foundations for a comprehensive VfM analysis in the context of PAF, it is important to have an assessment of the disaster risk profile of the country or organisation. Disaster risk profiling involves understanding the underlying risks that an organisation or country is exposed to, the amount of financial protection needed and that is expected to be covered by the pre-arranged financing instrument(s), and where there are funding gaps.

The disaster risk profile can be produced by looking at data on the impact of previous disaster events and their incurred emergency response costs, as well as any assessments of potential future disaster scenarios, to come up with an estimated financial loss at different likelihoods of occurrence (or return periods).[3] This helps organisations to understand the probability that financial losses will exceed a certain level, and plan and prepare for this by putting pre-arranged financing instruments in place.

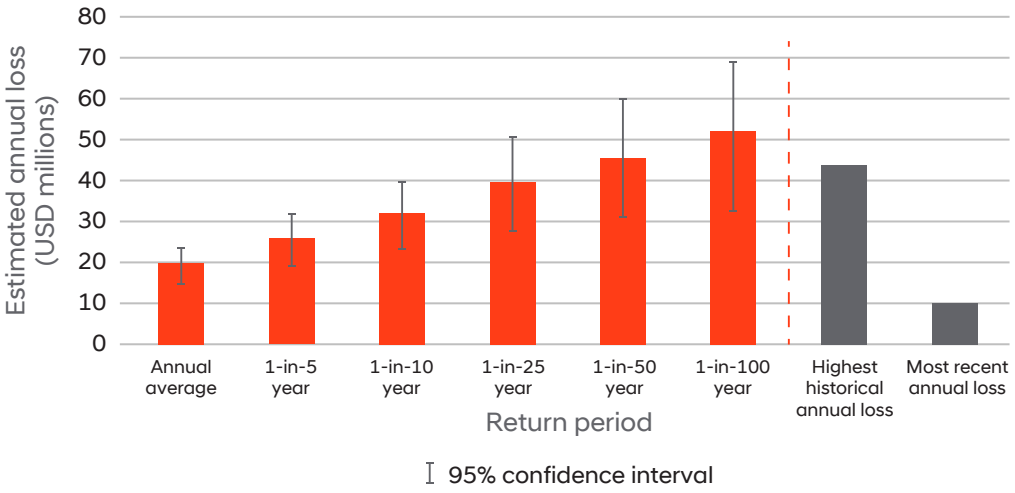
Disaster risk finance (DRF) practitioners use various tools to quantify potential future financial obligations (also called contingent liabilities) that may arise if adverse events occur. There is no single, common approach and in cases where historic data is missing or low quality, technical external support might be needed to produce the kinds of results that are useful for decision-making (see Figure 3 for an example).

Once such information is available, a decision can be taken regarding the portion of the estimated financial loss that should be covered by a new pre-arranged financing instrument or approach. Certain pre-arranged financing instruments are suited to high-frequency, low-severity risks and others are better suited to low-frequency, high-severity risks. The appropriateness of pre-arranged financing instruments in different contexts can be considered at a later stage in the VfM assessment.

Figure 3 provides an example of a risk profile for Lesotho taken from a World Bank DRF Diagnostic. In this example we can see that the annual estimated average loss from disasters has been calculated, but also the estimated average loss at different return periods. We can see that for more frequent events expected to occur with a 1-in-5 chance over the next year, annual losses could exceed approximately USD25 million, and as the likelihood of the events occurring on average decreases, the estimated severity of losses increases. There is also a range of uncertainty around these amounts, with the risk that, for example, a 1-in-100-year event may occur once in a year, but it could also occur twice or three times or more, or that it might not occur at all.

3 Return period: an indication of the likelihood of an event occurring; a recurrence interval demonstrating how frequently an event is expected to occur.

Figure 3: Example of risk profiling in the case of a country



World Bank (2019)

Once the risk profile has been established and there is an understanding of the contingent liabilities the organisation or country is exposed to, practitioners, or those in charge of conducting VfM analyses, will need to identify what governance is in place that can facilitate actions and the flow of funds when a disaster has occurred, and understand the modalities by which funding is disbursed in case of disaster to respond and reach beneficiaries.

Identifying institutional arrangements such as the mandated roles and responsibilities of different agencies (for both disaster finance and disaster management), whether financial resources are mobilised, coordinated and executed effectively, as well as the level of transparency and accountability, is essential in designing effective pre-arranged financing solutions. The VfM analysis must assess the enabling environment ensured by institutions or agencies, because a well-designed financial instrument should also ensure that timely support can be delivered where it is needed.

Finally, mapping risk ownership among key stakeholders can help define who is responsible for managing and bearing the consequences of disaster risks. For example, in a national context, governments often adopt a multi-level approach to risk ownership: central governments typically hold responsibility for risks associated with large-scale or systemic disasters that impact national infrastructure or pose significant socioeconomic challenges, while local governments or municipal bodies take responsibility for more localised risks, such as minor flooding or landslides. Looking at other actors that are expected to take responsibility for risks, such as private entities, will also help estimate properly the contingent liabilities that remain uncovered and thus form the financing gap to which the new instrument or approach can respond. Distributing risk ownership more equitably lessens the fiscal burden on central governments, which might otherwise be expected to compensate losses at meso- and micro-levels, as well as sovereign level.

One way to run such analysis can be done through so-called DRF diagnostics that are offered by several multinational development banks and experts and aim to map out the elements described above (see example in Box 3). These diagnostics can in turn be used as a building block for the VfM analysis whenever a new pre-arranged financing instrument is launched.

BOX 3: WORLD BANK DRF DIAGNOSTICS

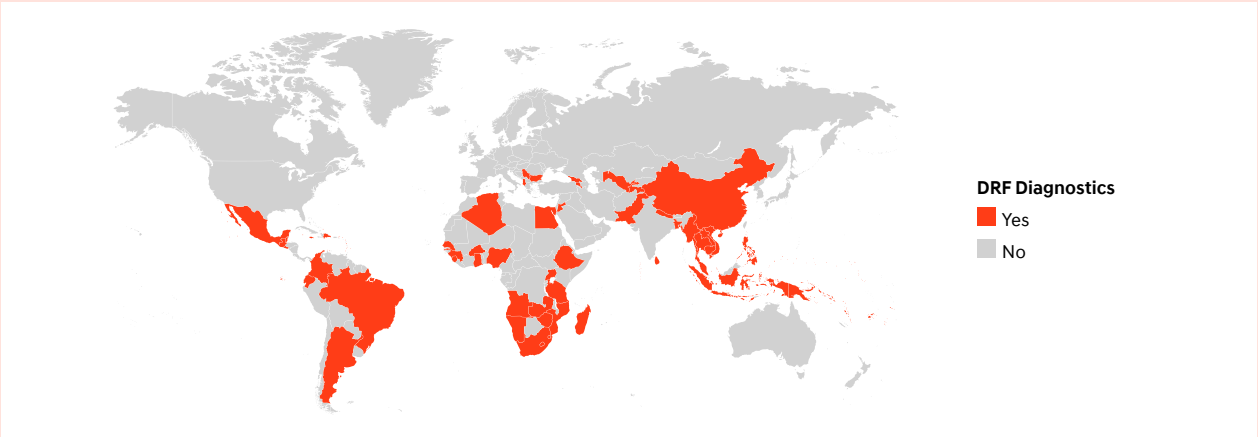
DRF diagnostics have been developed by the World Bank since 2016 to identify vulnerabilities to natural hazards and disasters and propose financial strategies to reduce national-level funding gaps for future shocks. The main dimensions that such diagnostics cover are disaster risk profile and impact of past events, legal and institutional frameworks for DRF, existing disaster risk financing instruments, the domestic insurance market, modelling of funding gap analysis at national level, and options for reducing it. The funding gap analysis estimates the need for funding for a response versus the existing instruments and can propose options to reduce the gap by adding new risk retention and risk transfer instruments to improve the timeliness of the government response for events of different severities.

The quantification of the need for funding is usually based on the contingent liabilities of the government, which are explicit (mandated by law) or implicit (not mandated by law, but which could be activated for political reasons). These are financial obligations of the government to protect the affected population in an emergency. Usually, these liabilities do not include reconstruction costs; they mostly estimate the emergency response.

While such reports are a useful initial tool to assess a country's financial resilience ahead of disasters, helping governments understand their vulnerabilities and develop strategies for managing risks, they cannot ensure that theoretically optimal financial layering of instruments represents good VfM. Often, the implementation of new instruments at sovereign level has cost implications that go beyond the risk premium for a given instrument (in terms of time, implementation, operationalisation, etc.) and those can significantly change the CBA of a given solution. Moreover, as quick stocktakes of a country's situation, they are sector agnostic, and do not include micro- or meso-level instruments that can help respond to disasters at sub-national level. They are, however, a useful resource for those carrying out VfM analysis to understand the context ahead of developing potential options for comparison and to move towards a sector-specific analysis where needed.

There are currently a total of 13 publicly available diagnostics produced by the World Bank (Financial Protection Forum 2023), but many more have been completed. Other organisations, such as the Asian Development Bank (ADB) or the United Nations Development Programme have been contributing to the list of publicly available DRF diagnostics, accounting for a total of 46 such analyses as of December 2024. Both the World Bank and ADB have also made public the methodology that is being used to produce such diagnostics, so more organisations and countries can approach these complex analyses (ADB 2017).

Figure 4: Stocktake of DRF diagnostics



Source: Centre for Disaster Protection.

STEP 2 Guiding questions – Understand the risk context

Aspect	Considerations
Risk profiling	What information and data exists on priority risks in the country?
	Has a formal risk profiling exercise been completed recently?
	Does the country or organisation have access to risk models and data on likely future risks?
	Does the country or organisation have access to data on historic disaster losses?
Contingent liabilities	Does the country or organisation usually go through a process of calculating contingent liabilities?
	Who is responsible for calculating the contingent liabilities at macro-, meso- and micro-levels?
	What are the existing financial sources to cover contingent liabilities?
	Are there any indirect or not quantifiable contingent liabilities that can arise?
Stakeholders	Who are the main actors or agencies involved in financing and managing the response to disasters?
	What is the share of the financial responsibility to respond to a shock that each agency or actor takes?
Other assumptions	What are the different legal frameworks in place to allocate funding to respond to a disaster?
	Are frameworks formalised and available to all responsible stakeholders?
	Is there flexibility or discretion in how funds are allocated following disasters? If yes, who is the ultimate decision maker in this case?

Step 3: Identify alternatives for comparison

As set out above, VfM can serve different purposes, but it is primarily used to inform decision-making and help to reduce the financial protection gap in a country or organisation if a disaster occurs.

This could be in the context of deciding between several different financial strategies or instruments or may be about deciding between the current approach (as identified in Step 2) and an alternative. These options can then be compared quantitatively and qualitatively to assess which offers the greatest added value for the money that is being spent. Step 3 may need to be repeated once the qualitative and quantitative analyses have been conducted (Step 5 and Step 6 below) if it becomes clear that a particular instrument is not feasible or available, and thus a different or refined option is necessary and should be included.

The process of identifying the options to be compared should be open and unbiased. We recommend being as open-minded as possible. Sometimes, organisations decide in advance that they want to use a particular pre-arranged financing instrument such as insurance, perhaps because they have funding available for this use. In this scenario, they may want to simply compare different types of insurance to identify the option that gives the best VfM. However, to really get optimal results, we would always recommend comparing a range of instruments, so the VfM analysis gives more robust findings and builds accurate understanding. For example, it could be worth comparing insurance with a contingent loan or line of credit. If sufficient diverse alternatives are not compared in the VfM analysis, then there is a risk that the option that offers the most promise will be missed.

It may be helpful to generate ideas of alternatives for comparison in a similar way to developing the value statement, by involving as many internal stakeholders as possible, as well as seeking support from external expertise where needed. A longlist of options could be shortlisted to a handful of feasible alternatives by discounting those options that are not in keeping with the value statement or that are immediately not viable; for example, instruments that would be impossible to implement given institutional frameworks that are in place or instruments that are currently unavailable to a country or organisation because of current legislation.[4] It is also important to ensure that options are narrowed down sufficiently to avoid 'choice overload', which can be detrimental to decision-making, but contain enough options for the VfM analysis to be robust while being mindful of time or resource constraints.

Consideration of the financial protection gap and the payout conditions of a particular instrument should be looked at when choosing which instruments to compare. While risk transfer instruments might seem appealing, they can often come with the trade-off of covering only rare, high-severity events, leaving more frequent, lower severity risks uncovered. The options should be compared against evidence of historic funding needs and future expected losses at different severities of risk (developed in Step 2). A holistic approach that combines multiple instruments of different types is essential to ensure comprehensive protection and limit significant gaps in financial need being unmet at different layers of risk.

Different instruments may be used to finance different hazards that a country or organisation may face, and it is important that the mix of funding for different hazards aligns with the risk profile and priorities outlined in the value statement, as set out in Step 1 and Step 2 above. As well as considering the different hazards the country or organisation may want to protect against, financing should attach at the appropriate level of severity. For example, if the key focus in the value statement was to meet the needs of the population in the event of a drought, then whether any proposed strategy would be likely to trigger a timely payout of sufficient funds that targets the most vulnerable in this event should be considered.

Table 1 provides a description of the different categories of pre-arranged financing instruments that could be considered as part of the longlist of options, including a description of the instrument, advantages and disadvantages, and examples. This is not an exhaustive

4 Usually, before parametric insurance or micro-insurance is launched in a given country, the insurance legal framework for the country needs to be adapted to allow for such products to be sold on national territory and this process is led by the insurance regulator and can take years.

list and, depending on the purpose of the VfM analysis, may not be applicable. However, resources such as Table 1 and the Centre's Demystifying Pre-Arranged Financing for Governments report (Mustapha and Benson 2024), which the table is based on, can provide a helpful starting point for option generation, particularly when starting from scratch. We provide additional useful resources that can support VfM option generation in the Additional Resources section of this note.

Table 1: Main pre-arranged financing instruments usually considered as possible alternatives

Product	Type of instrument or focus	Description	Examples *(non-exhaustive)*
Centralised disaster funds or reserves	**Risk retention** Usually used for most frequent low-severity events	These are budgetary funds held at national or organisation or sub-national level that have dedicated governance and eligible expenditure referring to disaster response or reconstruction. They can be automatically replenished at each budget cycle and can receive donor funding for disaster response. They are different from all-purpose contingency reserves typically set up by governments to cover any unidentified emergencies.	Indonesia's Pooling Fund Bencana, Kenya's National Drought Contingency Fund Disaster Response Emergency Fund (DREF)
Contingent loans or credit lines	**Risk retention** Usually used for frequent medium-severity events	Loans or grants usually offered by multilateral development banks with concessional terms that are prepared and approved in advance of an eligible event and made available following a disaster if pre-agreed (trigger) conditions are met.	World Bank's Catastrophic Drawdown Deferred Option, Inter-American Development Bank's Contingent Credit Facility, ADB's Contingent Disaster Finance
Parametric insurance	**Risk transfer** Usually used for less frequent high-severity events	Insurance products designed to insure an organisation or a national or sub-national entity, and which provide agreed funding if a certain (parametric) trigger condition is met. The trigger condition usually refers to a public, transparent and external index or indicator that measures the occurrence of a specific event. The funds can be used as budget support or deployed to finance specific response activities, following pre-agreed contingency plans.	Regional risk pool (ARC, Caribbean Catastrophe Risk Insurance Facility (CCRIF), Pacific Catastrophe Risk Insurance Company, Southeast Asia Disaster Risk Insurance Facility), Morrocco's Solidarity Fund against Catastrophic Events (FSEC) insurance scheme

Table 1 continued

Product	Type of instrument or focus	Description	Examples *(non-exhaustive)*
Indemnity insurance	**Risk transfer** Usually used for less frequent high-severity events	Insurance mechanism designed to compensate insured parties for actual financial losses incurred due to specific perils or events, such as disasters, accidents or other covered risks. This type of insurance relies on a claims assessment process that evaluates the magnitude of the loss against the terms of the policy, ensuring that payouts align with the verifiable damage sustained. In practice, indemnity insurance is characterised by its close ties to the insured parties' exposure and the need for accurate loss documentation, which can include repair costs, business interruption or replacement expenses.	Indemnity insurance product backstopping the Disaster Risk Emergency Fund of the International Federation of the Red Cross and Red Crescent Societies (IFRC)
Catastrophe (CAT) bonds	**Risk transfer** Usually used for least frequent extreme-severity events	Products are designed to provide protection against catastrophic events with low probability of occurrence but high economic impact, such as earthquakes or tropical cyclones. These instruments have parametric triggers, based on reported event observation data. If triggered, they will disburse a part or all of the principal to the beneficiaries impacted, most often in the form of budget support.	World Bank-intermediated CAT bonds, such as the Pandemic Emergency Financing Facility, Chile's Earthquake CAT Bond, Pacific Alliance CAT Bond, IFRC's Volcano CAT Bond

Source: Authors' own based on Mustapha and Benson (2024).

The option identification process will link closely to the purpose of the VfM analysis and value statement. For example, if the value statement is to 'identify the best combination of pre-arranged financing instruments in a country', then one will want to consider different combinations of the instruments above that could work together to cover the response cost for particular hazard types at different levels of likelihood and severity of occurrence. Alternatively, if the value statement is about how best to use one particular instrument, then you might want to compare alternative coverage levels or different product structures.

To provide some practical examples of how to develop the options for comparison, we have selected three case studies (see Boxes 4–6) to highlight the spectrum of approaches that have been used to generate comparative options for VfM analysis.

Different pathways are possible when selecting the instruments that will be used for comparison. We have provided a few guiding questions (see list on page 27) that could be useful for practitioners when selecting alternatives for comparison.

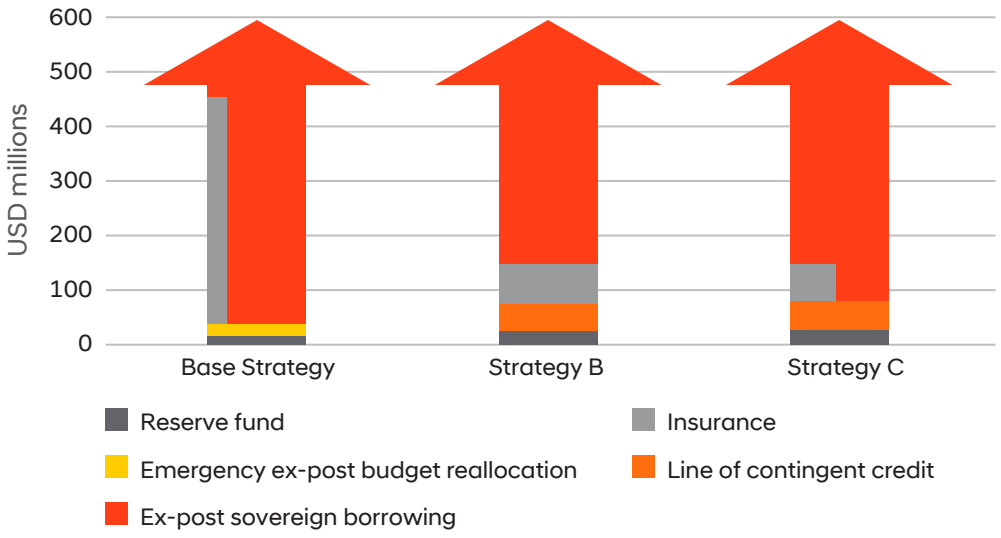
BOX 4: UGANDA CASE STUDY – OPTIONS FOR A FINANCING STRATEGY

World Bank country DRF diagnostic reports usually provide an assessment of the impact of disasters in a particular country context, a review of current approaches with a focus on determining the protection (or funding) gap in the case of disasters and proposed options for improved DRF strategies.

The risk diagnostic for Uganda compares three such strategies: Base Strategy, Strategy B and Strategy C.

The Base Strategy is an illustrative strategy based on the current financing mechanisms available to the Ugandan government, which include a combination of ex-post sovereign borrowing, insurance, a reserve fund and emergency ex-post budget reallocation. Strategy B and Strategy C include a line of contingent credit, a restructuring of insurance coverage and removal of emergency budget reallocation (World Bank 2012).

Figure 5: Risk layering strategies for Uganda



Source: World Bank (2012).

The purpose of the analysis is to consider alternative options to minimise ex-post sovereign borrowing, reduce costs, save time and strengthen financial resilience. The options are derived by looking at the costs and trade-offs the Ugandan government would need to consider, balancing risk retention and risk transfer at different layers of coverage.

BOX 5: JAMAICA CASE STUDY – RISK LAYERING IN JAMAICA

Jamaica faces significant risks from disasters, including hurricanes and earthquakes, impacting both its population and economy. In 2021, with World Bank support, the Jamaican government implemented a strategy to strengthen financial resilience against these events. The strategy assessed existing financial instruments and identified potential gaps.

Three risk layers were highlighted:

A low-risk layer, covering frequent, low-impact events through the National Contingency Fund, which held USD31 million as of 2021.

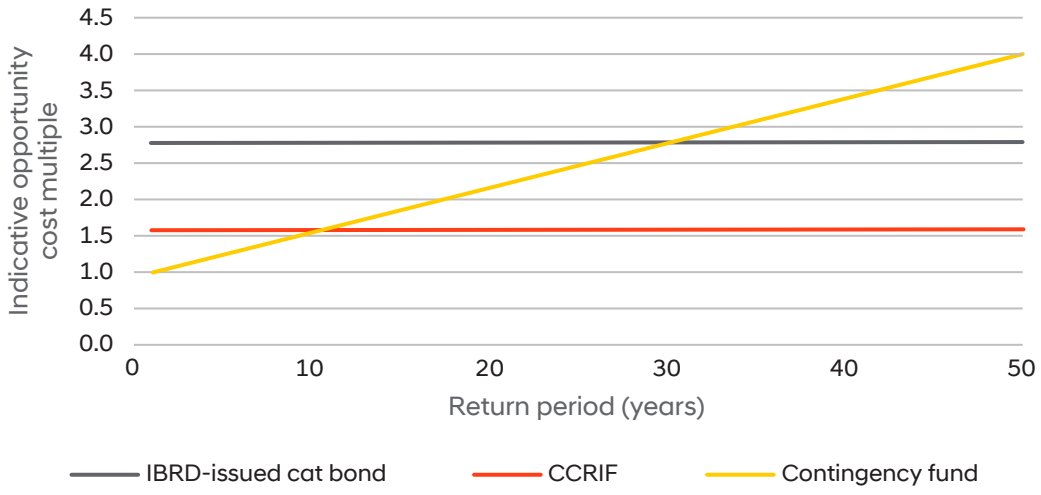
A medium-risk layer, covering less frequent but more severe disasters through a parametric-based contingent credit facility with the Inter-American Development Bank, which provides up to USD285 million in payouts based on assessments of affected populations.

A high-risk layer that addresses extreme, infrequent disasters through international capital and reinsurance markets. As of 2021, in this layer, the Jamaican government only had a parametric insurance policy through the Caribbean Catastrophe Risk Insurance Facility (CCRIF) covering earthquakes (USD125 million), excess rainfall (USD32 million) and tropical cyclones (USD94 million).

The government considered the need to further strengthen the protection for the high-risk layer, and with donor support, purchased a three-year catastrophe (CAT) bond worth USD185 million, topping up the existing coverage from the CCRIF specifically for tropical cyclone protection. This made Jamaica the first small island nation to independently sponsor a CAT bond.

A recent study commissioned by the Social Protection Technical Assistance, Advice and Resources Facility found that if using the opportunity cost (the cost of foregoing the use of a certain financial instrument in favour of an alternative financial instrument) multiple as an indicator of cost efficiency to inform the choice of the pre-arranged-financing instruments in Jamaica, based on the assumption of a marginal rate of sovereign borrowing of 6.5% for the government, then a contingency fund would be cheaper than CCRIF insurance for losses that occurred more frequently than once every 11 years, and CCRIF would be cheaper for financing lower frequency, higher severity events (Poole and Clarke 2024).

Figure 6: Indicative opportunity cost multiples for three stylised risk financing instruments at different return periods



Source: Poole and Clarke (2024).

Figure 6 demonstrates that several approaches can be possible when selecting a layering strategy of different pre-arranged-financing instruments. In this case, adding a new instrument – a CAT bond – before maximising the existing coverage from the existing instruments might not have been the optimal choice if the government had used the measure of cost efficiency described above as a criterion. However, using a stakeholder preference approach as well as other considerations, the government's preferred strategy was to add a CAT bond to its risk layering strategy.

BOX 6: OPERATIONAL INTERVENTIONS TO MANAGE COSTS AND MAXIMISE BENEFITS

OPM has conducted VfM assessments of different regional risk pools and DRF instruments in recent years. For this specific case study, OPM was contracted by a development partner to investigate the VfM implications of different changes in the operational and business models of a regional risk pool. As the financial instruments offered by the pool were already operational, the question was about considering how it could develop in future to generate greater benefits. OPM deliberately chose a broad range of alternative options and calculated the social rate of return for each to see how they would impact on costs and benefits of the existing model (see Step 5 for more information on social rate of return).

The analysis compares the risk pool's base case (current social value of benefits and costs and rate of return) to different alternatives:

- Using different distribution or 'money out' mechanisms to reach beneficiaries to see how this would change the distribution costs and benefits in terms of speed of support to affected households.
- Changing the levels of reinsurance purchased to see how this would impact the insurance premium costs, capital reserves and pricing, or the risk pool as a whole.
- Expanding the investor base able to participate in the risk pool to see how this would affect capital levels and future sustainability if premiums or costs were supported by a larger pool of donors.

STEP 3

Guiding questions – Identify alternatives for comparison

Aspect	Considerations
DRF context	What different types of pre-arranged financing instruments do the country or organisation already have in place to respond to disasters?
	What is the level of expertise within the government agency or organisation to set up and maintain complex risk financing solutions?
	What is the risk profile of the country or organisation and expected losses at different severities of risk?
Existing coverage and gaps	Does the country or organisation have pre-arranged financing instruments in place to respond to risks at different levels of frequency and severity?
	Does the country or organisation have pre-arranged financing agreements in place for which coverage can be expanded (i.e., if an insurance mechanism is in place, can the sum insured be increased to expand coverage)?
	What types of risks and severity are driving the disaster risk protection gap (i.e. fast- vs slow-onset risks, low frequency-high severity vs high frequency-low severity)?
New instruments or alternatives	What gap will a new instrument fill? Is the needed level of coverage available for this instrument?
	Can the same instrument, but with different features, be considered (i.e. an insurance instrument, but with different levels of coverage or activation)?
	Are the costs associated with each new instrument well identified for the purpose of the analysis?
	Are all alternative instruments equally feasible and available to the country or organisation?
	Are the alternatives explored in line with the value statement?
	Has a broad spectrum of options been considered?

Step 4: Set the scope of the VfM analysis

At this stage, and complementary to the selection of options for comparison, DRF practitioners or experts will want to consider what type of VfM analysis to undertake. At a high level, this can be broken down into:

- Quantitative analysis – considering factors that can be quantified such as financial cost, opportunity cost or number of people that could benefit from the instrument.
- Qualitative analysis – considering factors that may be harder to quantify or where there is little data on factors such as reliability and availability or 'money out' considerations.
- A combination of quantitative and qualitative analyses – where it is possible to use both types to support decision-making.

Ideally, the VfM analysis would be made up of a robust quantitative analysis, supplemented and supported by a qualitative analysis. The majority of VfM analyses traditionally tend to focus only on quantitative aspects. Ignoring qualitative considerations can lead to information being missed out, which may be crucial to decision-making. However, there may be reasons why the analysis is solely focused on quantitative or qualitative aspects. It may depend on availability of data and information, resources and time constraints, as well as expertise required. If external experience and expertise are required, then these will need to be procured and can come with costs attached.

Quantitative analysis may require technical expertise from specialists such as actuaries or economists. This may mean working with external partners who have experience carrying out parts of the VfM analysis. Quantitative analysis offers a high degree of objectivity in that calculations are based on a theoretical model and each instrument is likely to be treated in a similar way. Qualitative analysis may require specialist knowledge of the pre-arranged financing instruments being considered, as well as in-house knowledge of the context. Qualitative analysis can be subjective (and thus could benefit from impartial external input) but can also be useful where non-numerical judgement is required and will thus require a different set of skills compared to the quantitative analysis.

It is important to ensure the scope considers the stakeholder engagement process and therefore different stakeholder needs and levels of understanding. Outputs should be designed and delivered so unbiased decisions can be made based on the results. For example, if the results from the quantitative analysis are not easily understood there could be a risk they are misinterpreted.

We have provided an illustrative list of guiding questions below to support the process to determine the scope of the VfM analysis. This is not exhaustive but may provide a helpful starting point for those undertaking VfM for the first time. Certain criteria may determine the approach more than others; for example, if there is insufficient data to produce a useful quantitative analysis, then it would be reasonable to just consider qualitative aspects of VfM.

In the following sections we provide further detail on the process and different approaches to undertaking quantitative analysis (see Step 5) and qualitative analysis (see Step 6). Where a combination of these approaches is to be used, we recommend considering how these sets of analysis will complement each other, and how the conclusions of the quantitative and qualitative analyses will be prioritised and used in the decision-making process. Step 7 provides further guidance on how to interpret the results and use these in decision-making.

STEP 4 Guiding questions – Set the scope of the VfM analysis

Aspect	Considerations
Value statement criteria *The value statement should help provide a set of criteria to be assessed against.*	Are the criteria best expressed in quantitative or qualitative terms or both?
	How can these criteria be analysed and measured?
	What level of prioritisation is placed on each of the criteria being assessed?
Replicability *If the VfM analysis is new, consider how to make it repeatable.*	If a certain approach was used in a previous exercise, can the same method be used again? Are there changes that need to be made in a second iteration?
Data availability and accessibility *The method used may depend on the data available and any restrictions on its usage.*	Is sufficient and reliable data available for a quantitative analysis? *Quantitative analysis will rely heavily on data and its availability, sometimes going back over a number of years. Assumptions and proxy data can be used, but this can lead to simplifications, with limitations on the usefulness of results.* *Qualitative analysis may rely on information that is not readily available or public. It may require wider stakeholder or external engagement or interviews to build up a picture of the options available.*
Expertise required	Does the country or organisation have the needed in-house expertise to run quantitative or qualitative analyses?
	If not, can the right expertise be procured?
Link to the decision-making process *Consider how the outputs will be used to support decision-making.*	How could quantitative and qualitative analyses be used in the decision-making process? How could they be combined?
	How much weight should be applied to the results of the quantitative and qualitative analyses?
	Should one type of results be prioritised over the other?

Step 5: Quantitative comparative analysis

Quantitative comparative analysis, also known as CBA, can be used to look at the costs and benefits of the alternative options identified in Step 3 (e.g. the current situation vs a number of alternatives). There are different ways to do this, and each may depend on the data and expertise that are available to quantify costs and benefits (as covered in Step 4).

What is the difference between VfM and CBA?

CBA is often used to measure the value of a financial decision by assessing the cost-effectiveness of the decision being made.

As described in Step 4, VfM analyses incorporate multiple elements of value assessment, whereas CBA tends to focus only on elements of the financial attractiveness of each instrument or strategy without taking in to account wider considerations.

CBA sits within the VfM assessment process as an important tool to quantitatively compare instruments and strategies. For example, CBA can help to understand the opportunity cost of spending money now or putting money into a contingency fund in case a disaster occurs in the future. However, it doesn't consider other factors such as the resources required to set up the fund or the timeliness with which funds may be disbursed, which may be important factors for the country or organisation setting up the fund.

CBA requires a measure or metric by which to assess cost and may also require a measure or metric to assess the benefits of the proposed financial instrument or strategy. For assessing the benefits of an instrument or strategy, one could also look at the social rate of return (see Box 8) or return on investment of using the financial instrument or strategy in comparison to other options.

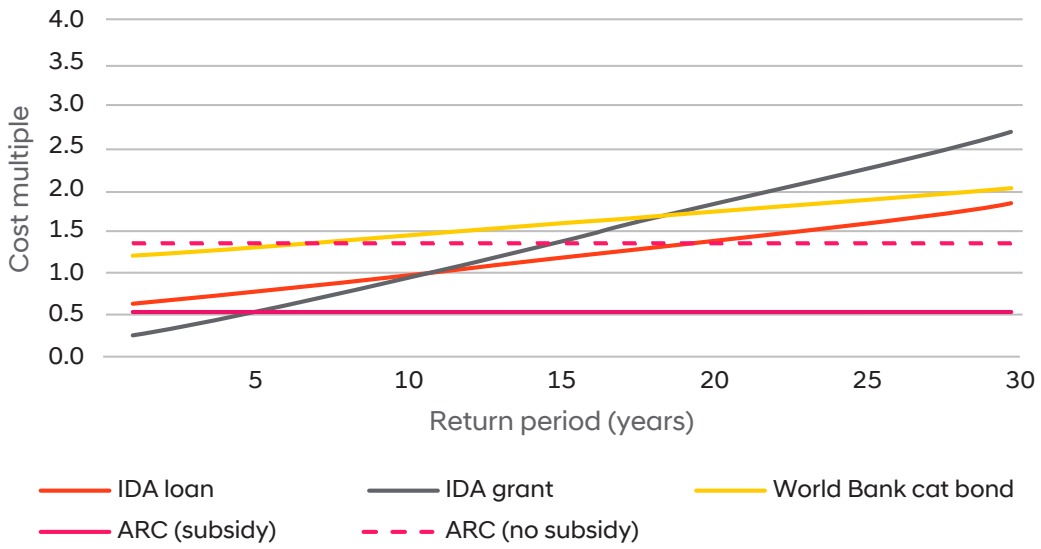
One example is the UK Government Actuary's Department (GAD) report discussed in the case study in Box 7, where the cost multiple[6] of each instrument is used to compare different options. The cost multiple is defined as the average amount one must pay to receive US$1 of payout on average from a given instrument over its lifetime (see Box 7 and the Additional Resources section).

6 Cost multiple: the expected net present value total cost of an instrument divided by the expected net present value disbursement.

BOX 7: COMPARATIVE COSTS OF INSTRUMENTS UNDER DIFFERENT SCENARIOS

A research paper produced by the GAD and sponsored by the Centre for Disaster Protection looks at how to analyse pre-arranged financing instruments available to national governments by considering the cost multiple as a metric (Haq et al. 2024). This provides a simple way to compare the relative costs of using different financial instruments, particularly when the instruments differ considerably in terms of structure. The cost multiple *shows the average amount a government has to pay to receive USD1 of payout on average from an instrument over its lifetime*. The paper looks at a variety of instruments offered by international institutions from contingent loans to catastrophe bonds. The cost multiple for those instruments is calculated and compared by return period (an indication of the likelihood of an event occurring).

Figure 7: Comparing cost multiples of potential pre-arranged financing instruments in Africa



Source: Mustapha et al. (2024).

The cost multiple is likely to increase as return periods increase (for the less frequent, more severe shocks), but by calculating the cost multiple over return periods it is possible to see which instruments may be more attractive for more frequent shocks and which may be more attractive for less frequent shocks. In the example above, for a low-income African country, an IDA grant is more attractive up to the 1-in-5-year return period (20% probability of occurrence in any given year), then ARC insurance (with premium subsidy) is the most cost-effective thereafter. The analysis can also be considered in relation to the underlying risk profile of the country or organisation that may have been quantified during Step 2.

Another approach that is commonly used is comparing the opportunity cost of different pre-arranged financing instruments or DRF strategies under the same scenario. In this case the strategy or instrument with the lowest opportunity cost is likely to be the most cost-effective.

BOX 8: SOCIAL RATE OF RETURN

While the previous case study focused on the financial costs and benefits associated with different options, it can be helpful to also think about the social impact. One way to look at this is to consider:

- The social costs (C) (e.g. operational costs and/or costs associated with distributing funds); and
- The social benefits (B) (e.g. whether funds are targeting the most vulnerable people, or the timeliness of receiving the payouts).

The total social costs and benefits can then be combined into a social rate of return. This rate of return can be calculated as (B – C)/C (because we can assume that benefits may arrive after upfront costs). This social rate of return can then be compared across different instrument options or strategies to see which produces the highest value and therefore the largest social impact for the costs incurred. It provides a simple metric by which options can be compared, similar to the cost multiple above. This type of analytical approach also considers both the social cost and benefit of the options being considered, and therefore has a direct line of sight to those most affected by disasters too.

This approach has been used to make recommendations on the best operational interventions for a regional risk pool.

The types of analysis set out above are intended as a guide to the kind of information that can be produced, and which underpin decision-making when carrying out quantitative VfM analysis. These are not the only approaches available and there may be alternative ways to approach quantitative analysis – sometimes a bespoke approach may be needed depending on the context. These quantitative approaches could be undertaken internally, but there are many options to use expertise within the international landscape to produce or provide support in creating these types of analysis. For example, we have referenced case studies by the Centre, GAD and the World Bank that sit within a wider range of organisations that have produced these types of analysis previously, including think tanks, academic organisations and consultancy firms.

While technical expertise may be required to produce a quantitative VfM analysis, we believe the most crucial aspect is the availability of granular and reliable underlying data to describe the current level of risk exposure (as described in Step 2) and an understanding of the features of the options to be considered (as described in Step 3), including the instruments' structures and related costs. For example, when the quantitative analysis aims to compare different combinations of pre-arranged financing instruments in relation to shocks of different severities (and likelihood of occurrence), analysis needs to describe which of the instruments is used and in what proportion, given a shock of a specific magnitude; and where there are funding gaps observed that have to be covered with other sources of funding. This means that several features of the instruments analysed need to be known or assumed, on top of other, broader economic assumptions.

The minimum detailed information needed for each instrument analysed includes:

- Target coverage – types of disasters, geographical scope and total beneficiaries.
- Event and trigger definitions are crucial in creating effective financial instruments, as it affects likelihood of payouts in practice.
- Annual limits of coverage, triggers, etc.
- Cost of transfer products and their attachment or exhaustion points.
- Any other fixed cost linked to the design or launch of the instrument (e.g. legal fees)

To evaluate the opportunity cost of using one instrument over another, economic assumptions are needed, including, but not limited to:

- Response cost per person or household impacted by a shock.
- Rate of social return of interventions (see Box 8).
- Annual interest and discount rates.
- Interest rates applying in case of borrowing funds (e.g. for issuances of government bonds).

Quantitative analysis provides a transparent assessment of the cost-effectiveness of different options. However, it is important to understand how to interpret the results of this type of analysis in the context they are being applied, as well as any simplifications and limitations of the analysis itself. For example, while CBA may predict payouts for certain events, operational aspects from financial agreements might differ, impacting the likelihood of actual disbursement of funds from these instruments.

Sensitivity testing to assess the impact of different scenarios on the results of the quantitative analysis can help with understanding the range of possible outcomes, particularly if there is uncertainty in the underlying data and assumptions. Qualitative analysis can help complement quantitative analysis in capturing factors that may be important but not as easy to quantify (e.g. legal requirements, reputational risk, etc.). Expert judgement should be applied when interpreting the results of the quantitative analysis, as well as its application in a real-world context. Clear, transparent communication between the government or organisation and coverage providers is essential to ensure mutual understanding of an instrument's scope and limitations.

On the next page, we present a brief list of guiding questions that can help define the scope of the quantitative (CBA) analysis.

STEP 5

Guiding questions – Quantitative comparative analysis

Aspect	Considerations
Description of instrument	For what kind of events should the instrument activate funds (i.e., types of disasters and targeted magnitude of these disasters)?
	What is the target coverage of the instrument (i.e., micro-, meso- or national level)?
	What are the activation criteria of the instrument? Can they be modelled?
	Are there any discretionary criteria for activation?
	What is the average annual payout expected from the instrument?
	What is the payout per impacted beneficiary?
	What is the maximum amount that can be disbursed from the instrument (i.e. exhaustion point)?
	Is the instrument annually replenished? If so, under what conditions?
Cost of instrument	What is the cost of the instrument? If insurance or anticipatory action, what is the insurance premium? If contingent line of credit, what are the interest rate and fees? If a CAT bond, what is the coupon?
	Are any other fixed costs linked to the instrument (i.e. legal fees)?
	What is the cost of replenishment of instrument upon exhaustion of funds?
Risk profile	What is the modelled distribution of risk and losses for which the instrument is intended?
Other assumptions	What is the social rate of return that is foregone if the instrument does not sufficiently cover the disaster response needs and reallocations, and last-minute restructuring is needed?
	What is the market interest rate for borrowing funds following a disaster for the country or organisation?
	Where does the instrument sit in the DRF strategy of the country or organisation? Can other instruments activate before or after to cover the same kinds of events?

Step 6: Qualitative contextual analysis

Once the costs and benefits of the various options have been calculated in the quantitative analysis step, the next stage of the VfM framework is to examine the wider considerations or product and implementation risks, as they could significantly affect the findings of the quantitative analysis. There is no exhaustive list of such factors to consider, but rather they should be derived from the priorities outlined in the value statement. Qualitative assessment and risk factors to be considered can be split into a few categories, as described below.

Legal requirements and compliance

Pre-arranged-financing instruments may be required to comply with multilateral or local processes that can vary in level of complexity. These requirements may dictate the effort required in establishing different pre-arranged financing instruments and may mean that a phased introduction needs to be considered.

Some instruments require extensive regulatory approval, which can impact feasibility, slow down the implementation process or trigger additional costs. Aligning with complex legal or compliance requirements can entail high initial costs and also require allocating significant time and human resources to accompany transactions.

Risk and consequences of non-performance

For pre-arranged-financing instruments that are parametric (i.e. they rely on an index to trigger payouts), in environments where local data is lacking or is unavailable, basis risk can manifest (i.e. the risk that a policyholder's actual loss differs from the payout triggered by a predefined event index, leading to potential underpayment or overpayment relative to the actual damage experienced). Aligning expectations of stakeholders in this case is key to ensure they understand the product and its limitations well.

Non-alignment of expectations can also lead to reputational risk, as poorly performing instruments can erode public trust in disaster response systems and stakeholders' credibility. If an instrument is perceived as unreliable or unfair, it could hinder cooperation, impact future funding and even exacerbate a crisis by undermining trust.

Sustainability of the instrument

The costs associated with any individual pre-arranged financing instrument or its availability in the future may be impacted by changes in market conditions or donors' willingness to subsidise the instrument in the future. There is clear pressure on insurance companies regarding increasingly frequent claims arising from climate change events; in the coming years, we could see natural hazard coverage becoming increasingly expensive or not being offered in certain areas. A rise in interest rates may increase the opportunity costs of certain instruments more than others. The increased cost element can be tested in the quantitative part of the VfM analysis through sensitivity testing, which should consider the factors that could impact the costs and benefits of each instrument over time. Vulnerability to market conditions could be reduced by signing multi-year agreements or diversifying the instruments used to cover different risk severities.

Incentivising risk reduction and preparedness actions

Ideally, pre-arranged financing instruments should actively encourage increased risk reduction; for example, by being tied to response preparedness plans or additional funding to pay for risk reduction activities. Any pre-arranged financing instrument considered should not create perverse incentives that reduce the resilience of vulnerable populations. For example, if people were incentivised to reduce their strategy of stockpiling food during times of surplus because of an insurance policy taken out to fund food security in the event of a drought, this would be considered a perverse incentive that should be avoided. Another perverse incentive would be the moral hazard[7] that a humanitarian organisation had the discretion to decide to pay higher allocations to its national societies to respond to disasters on the ground once they had an insurance policy.

Impact on regular response activities and timing are other critical considerations, as some financial tools may inadvertently disrupt or delay standard disaster responses. At a minimum, a new instrument should work without adding complexity to existing plans or response activities. A qualitative assessment can reveal whether an instrument complements existing systems or creates logistical hurdles, thereby affecting response efficiency.

7 Moral hazard: where people or organisations may be more willing to engage in riskier behaviour or reduce their efforts to manage the underlying risk because they feel safe in the knowledge that someone else will cover the disaster's cost.

BOX 9: DREF CASE STUDY

Between 2021 and 2023, the Centre for Disaster Protection worked with the International Federation of Red Cross and Red Crescent Societies (IFRC) and its centralised Disaster Response Emergency Fund (DREF) team on an innovative financing project exploring how to support the DREF's scaling ambition using risk transfer and the private insurance market (IFRC n.d.). The Centre carried out an independent VfM assessment at the request of IFRC.

The DREF presents a unique model for using insurance. Firstly, from an insurance perspective, as a global emergency fund, the DREF functions as a pre-diversified risk pool operating across all humanitarian emergencies in all regions and risk types. Secondly, the DREF has records going back more than 10 years, showing how the fund has been used, which provides a robust loss history. It also has transparent allocation rules and an established governance structure. Finally, the DREF's standard and consistent fund management process creates predictability and confidence for risk carriers (the insurance market) to build an insurance product for the DREF.

Early on in the design process, both parametric and indemnity insurances were tested as options. Parametric insurance policies are more widespread, but they usually focus on a single risk or single geography, and they have an inherent basis risk. In the case of the DREF, the mix of multiple risks and global exposure made it very challenging to design an index that would have been a good trigger for disbursements, and the basis risk was assessed to be significantly higher than in a normal parametric policy. With support from the (re)insurance market and given the historic records and governance of the DREF, an indemnity insurance policy was chosen as the structure that would react in a timely way and provide funding when there was insufficient liquidity within the DREF to react to crises.

On top of these design considerations, as part of the analysis, the Centre produced both a quantitative analysis of the proposed insurance option to IFRC (by looking at the reduced likelihood of fund exhaustion with an insurance solution in place given the DREF's risk profile), and a detailed qualitative assessment to identify other risk factors that cannot be quantified, but which could impact the VfM of the insurance solution being proposed. The factors analysed were insurance capacity (sum insured), coverage of risks and event definition, trigger definition, legal aspects, impact to the ongoing operations of IFRC's national societies, moral hazard, reputational risk and risk of insufficient funds for emergencies not covered by insurance.

The findings of the quantitative and qualitative analyses were then used internally to align stakeholder's expectations regarding the insurance solution proposed with its operational implications, as well as to further adapt the design of the insurance policy, so that IFRC can negotiate insurance terms with its providers. Several consultations were also organised between the reinsurance market and internal stakeholders to make sure the more complex features of the policy were well understood, and that the implementation of this product did not in any way impact the timeliness of the response operations delivered by IFRC's national societies. A monitoring and evaluation process was also put in place to analyse the product after the pilot period, to understand if the design needed to be adapted and if the payouts were aligned with needs and expectations. All these actions were meant to ensure sustainability and continuity of insurance coverage after the initial insurance period.

On the next page are some guiding questions that may help you think through the wider considerations and risk factors for performing a qualitative assessment.

STEP 6

Guiding questions – Qualitative contextual analysis

Aspect	Considerations
Structure of the instrument	Does the definition of the event(s) covered align with what is needed from the instrument or approach in terms of speed, predictability and beneficiaries of funds?
	Have all the features and specification of the instrument or approach been communicated to stakeholders and do they understand them?
Legal and compliance	Have the legal and regulatory requirements been assessed and addressed?
	Are any compliance issues potentially blocking the implementation of the solution?
	Is dedicated legal expertise available for the duration of the product's implementation?
Risk of non-performance of the instrument	Has the basis risk been quantified? If so, what mitigation measures are in place?
	Has any risk of the poor performance of the instrument been identified?
	How will any reputational risk of the non-performance of the instrument be mitigated?
Sustainability of the instrument	Has vulnerability to future market conditions been assessed? Is there any risk that the instrument could become unaffordable or unavailable in the future?
	What are the costs and level of effort needed to renew the instrument?
Preparedness and risk reduction	Could the instrument lead to any moral hazard or adverse behaviour from policyholders or beneficiaries?
	Could the timing or efficiency of normal response operations be negatively impacted by the payout conditions of the pre-arranged financing instrument?
	Could the instrument lead to any other unwanted disruptions in risk reduction activities by the country or organisation?

Step 7: Use findings for decision-making

The final step in the process is to use the VfM analysis for decision-making, accountability and learning. Those commissioning the analysis will use the findings to make decisions on what types of PAF to take forward, but the analysis will also be useful more widely if it is published, including to support accountability. The Centre's Guidance Note on making DRF work for disaster-affected people discusses the need to improve the accountability of PAF in different directions: 'downwards' to risk-affected people, 'upwards' to those paying, and 'outwards' to sources of public scrutiny or oversight (Swithern 2023). Publishing VfM analysis can help with all three types.

Informing decisions

It may seem obvious to state that VfM analysis should be used for decision-making, but efforts must be made to ensure that the analysis is well-communicated to all stakeholders and used to inform relevant decisions about the selection and design of instruments and approaches. This means ensuring that the findings are both understandable and made accessible to all relevant stakeholders on a timely basis.

Stakeholders will need to clearly understand any limitations of the analysis and underlying assumptions. For example, users will need to know how pricing information may change or how the availability of instruments may evolve, so they can factor this into their decision-making. It may be useful to include key findings from the sensitivity testing undertaken in Step 5. To add maximum value to the decision-making process, it may be necessary to have more than one final presentation of results and instead consider presenting iterations of the findings throughout the process; for example, initial findings on a wide set of options and then more detailed revised findings on a narrower range. It may be possible to revise the instrument or approach following the analysis to improve VfM, meaning that parts of the analysis may need to be reperformed.

Managing politics

Stakeholders often assume that VfM analysis will present a clear 'winner' or identify the 'right answer'. However, in reality, the findings are likely to be less clear-cut, with approaches adding value in different ways and considerable nuance in the recommendations. VfM analysis may suggest a range of possible decisions, identifying the pros and cons of and trade-offs between different options. Different stakeholders may even draw different conclusions from the same analysis, depending on their institutional perspective and political factors. These political economy factors can make the process of using VfM analysis for decision-making messy. It can help to:

- **Be transparent about different institutional perspectives**, including clearly recording in the final report the viewpoints of different actors, their incentives and how these will likely shape their interpretation of the findings.
- **Refer back to the value statement.** If Step 1 ('Agree on the value statement') has been well-executed, then this can be used for framing the findings and highlighting the contribution of different options to the specific types of value the organisation wishes to create. This will help to balance different stakeholder perspectives, as well as the findings from the quantitative and qualitative analytical components. For example, if speed of response is the key value that was identified in Step 1, an organisation may focus more on qualitative findings in relation to the speed and timeliness of instrument payouts than on quantitative analysis about cost-effectiveness. The value statement can act as the guiding principle in using the VfM analysis for decision-making.
- **Publish the findings.** Sometimes, an organisation will choose a pre-arranged financing instrument or approach that does not represent the best possible VfM, but meets other political priorities. VfM analysis can help to shape decision-making, but politics will still always play a role. It is useful if VfM analysis is publicly available as it can help to hold organisations accountable for the decisions they make, especially if using public funds for PAF.

Monitoring and learning

It is important to monitor and potentially reperform elements of the VfM analysis over time as more information becomes available. When VfM analysis is undertaken before an instrument or approach is launched, it will necessarily include many assumptions. These may not hold true once the initiative has been rolled out; for example, costs may be higher or lower than anticipated, or contextual factors may affect implementation in ways that were not foreseen. It is useful to create an expectation from the beginning that VfM analysis is not a one-off procedure but should be revisited periodically to ensure the data, assumptions and findings hold, to support the organisation's ongoing effective decision-making, facilitate accountability and support global learning.

Publishing findings

Unfortunately, very few VfM studies are published and shared publicly, limiting accountability and learning. Ideally, organisations would publish their findings to help other organisations, build the global evidence base on pre-arranged financing instruments and approaches, and help support international policymaking. Some studies may contain sensitive information, but this could be removed, or summary findings could be published.

On the next page are some guiding questions that may help you to consider how to use the findings from the VfM analysis.

STEP 7

Guiding questions – Use findings for decision-making

Aspect	Considerations
Stakeholders	Which stakeholder groups should receive the findings of the VfM analysis?
	Do stakeholders have different needs and levels of understanding? Do the planned outputs of the analysis meet these needs?
Communicating findings (internally and externally)	What are the different political and institutional perspectives that may shape decision-making based on the findings?
	How can the findings be presented so they are well understood by and accessible to each of the stakeholder groups?
	Will the analysis be published? How will it be shared?
Decision-making process	Who is responsible for making the final decision? What further information or support do they need?
	Are the decision-making criteria clear?
	What governance is needed around the decision-making process? Does the governance ensure that decisions are made without bias or subjectivity?
	How do the findings impact different groups?
	Can beneficiaries' views be included in the decision-making process?
	Is there a key decision point (e.g. a meeting or deadline)? How far in advance of this can findings be shared?
	Would subsequent rounds of analysis be helpful?
Monitoring and learning	When should the VfM analysis be revisited to check it still holds? Can it be improved?
	Are there feedback loops to ensure decisions are appropriate and align with the value statement?

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