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Technical Discussion Paper on Concessional Insurance



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**Disaster Risk Financing
& Insurance Program**



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Abbreviations

AAL	Average annual loss
CARICOM	Caribbean Community
CAT	Catastrophe
CCRIF SPC	Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company
CERC	contingent emergency response component
CIW	Concessional Insurance Window
CMU	Country Management Unit
CPF	Country Partnership Framework
CSO	civil society organization
DC	Donors Committee
DFID	Department for International Development
DP	development partner
DPL	Development Policy Loan
DRF	disaster risk financing
DRM	disaster risk management
EC	Executive Committee
GIIF	Global Index Insurance Facility
GPSA	Global Partnership for Social Accountability
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IPC	Integrated Food Security Phase Classification
IPF	Investment Project Financing
IRB	Investment Review Board
M&E	monitoring and evaluation
MDTF	Multi-donor Trust Fund
NPV	net present value
NUSAF	Northern Uganda Social Action Fund
ODA	official development assistance
P4R	Program-for-Results
PA	Preparation Advance
PAD	Project Appraisal Document
PC	Partnership Council
PCN	Project Concept Note
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PDO	project development objective
PM&A	program management and administration
PMR	Partnership for Market Readiness
PREP	Pacific Resilience Project
NGO	nongovernmental organization
RE	recipient executed
SC	Steering Committee
SUF	Scale-Up Facility
TA	technical assistance
TC	Technical Committee
TF	trust fund
UFGE	Umbrella Facility for Gender Equality

All dollar amounts are U.S. dollars

Executive Summary

Climate change, weather-related disasters, and slow-onset changes such as rising sea levels threaten sustainable development and force some 26 million people into poverty every year. Sovereign disaster risk insurance and other forms of risk finance, as part of a broader financial protection strategy, can help countries increase their financial resilience to disaster and climate shocks.

This discussion paper aims to contribute to the ongoing discussions among development partners about the operationalization of premium subsidies for sovereign disaster risk insurance, the context of increasing interest among development partners in providing concessional finance, including premium subsidies. The paper draws on lessons from past and existing premium subsidy schemes, and from the World Bank's operational experience on disaster risk financing and insurance (DRFI), including regional catastrophe risk pools. It aims to inform the dialogue on how to operationalize concessional insurance. The objective of the paper is not to provide specific recommendations, but rather to highlight key issues and options to be considered when operationalizing concessional insurance.

This discussion paper builds on the World Bank Group's cascade approach, which aims to crowd in private sector capital and markets to address the development challenges posed by disaster and climate shocks. Sovereign disaster risk insurance uses the capital of (re)insurance companies to transfer the financial cost of disaster response from client countries to the private investors. Furthermore, it utilizes private sector experience in designing appropriate risk financing solutions for clients.

The role of subsidies

Governments use subsidies to achieve wide-ranging economic, social, and political objectives, and frequently justify them as correcting market failures and/or behavioral biases. International experience offers several key lessons on the use of subsidies. In particular, it is important to insulate programs from political influences, carefully target intended recipients, and account for administrative costs.

International experience with public subsidies offers several insights into the design of subsidies themselves, but mainly at the household level. Household-level evidence suggests that high or full initial subsidies can have desirable properties for a new technology (e.g., insurance) that requires learning (Cohen and Dupas 2010; Dupas 2014; Cai, de Janvry, and Sadoulet 2016). Unfortunately, there is no evidence yet on the behavioral implications of different subsidy designs for sovereign level insurance.

Project development objective

The following is proposed as a project development objective (PDO): to enhance the financial capacity of governments to respond to disasters. It is suggested that this be achieved by *increasing government access to rapid post-disaster finance* and by *increasing financial resilience of vulnerable households to disasters through rapid response*. PDO indicators and intermediate indicators are given in Table 1 of the main text.

Risks and mitigating actions

The provision of sovereign insurance subsidies entails several risks that can be mitigated with appropriate measures:

- **Reputational risk for development partners as well as potential implementing agencies.** The key reputational risk is related to a small payout, or to no payout, in the case of a disaster. This could be the result of basis risk,¹ which is present for parametric insurance. However, basis risk can be mitigated through sound risk financing systems, technical scrutiny of products, and clear communication of products' upsides as well as limitations. A rules-based and transparent subsidy application and approval process, as well as clear communication of criteria, can further mitigate reputational risk.
- **Lack of resources available to provide needed technical assistance to develop proposals.** This can be mitigated by formally linking premium subsidies to other DRF initiatives.
- **Priority from World Bank Country Management Units (CMUs) when premium subsidies are implemented by the World Bank.** This can be mitigated by focusing on countries where there is demand for low-cost resources, which could include countries that are oversubscribed for IDA18 and/or countries that do not wish to take on additional debt.
- **Imperfect understanding of insurance.** This can be mitigated through capacity building and clear communication about the product.
- **Misspending of payouts.** This can be mitigated by requiring countries to have adequate contingency plans and to publish expenditure information.

Key factors to consider when designing a concessional insurance program

Country context should be considered when allocating subsidies, including a country's level of development, its

level of stability/fragility, the quality of its wider governance systems, and its ability to diversify risks spatially and across time (for instance, debt level, tax base). Its technical capacity for understanding the financial instrument being offered and the quality of potential delivery channels for post-disaster funds are also important to consider. Finally, the wider political economy of the country and how it might affect disaster risk finance and its effectiveness are key factors.

A premium subsidy scheme should promote comprehensive risk financing strategies that include a mix of financial and budgetary instruments to improve a country's financial resilience to climate and disaster shocks. To ensure countries are financially prepared to cost-effectively address disasters of different sizes and frequencies, insurance should complement other financial and budgetary instruments. It is important to use the appropriate instruments for each layer of risk, both because doing so is cost-efficient and because stand-alone insurance can create perverse incentives for risk carriers (through encouraging lower attachment points and thereby increasing the likelihood of payouts that demonstrate the effectiveness of the insurance). Proposals for premium subsidies should therefore align with other DRF initiatives in a country. Experience suggests that sovereign insurance is primarily used to rapidly mobilize resources in disaster scenarios, so other mechanisms should be in place to provide finance for rehabilitation and/or reconstruction. In the medium term, investments should be made in local insurance markets to facilitate further transfer of risk from the public to the private sector.

The provision of a financial package (including a mix of insurance, contingency funds, and contingent credit) can improve the sustainability of sovereign risk insurance schemes and mitigate the inherent limitations of insurance. Without financial capacity to respond to more frequent disasters or noninsured perils, governments are exposed to political/reputational risks when a disaster occurs but insurance does not pay out. This can undermine faith in insurance products and weaken political support for up-front premium financing. In addition, a financial package simplifies financial response for client countries by offering one comprehensive risk financing strategy to meet their needs (as opposed to multiple, sometimes overlapping, instruments). For this reason, contingency funds and contingent loans are critical not only to sovereign financial protection but also to the sustainability of sovereign risk insurance. The provision of premium subsidies could be aligned with the provision of concessional contingent credit and contingency funds.

Contingency plans can increase speed of disaster response and protect the lives and livelihoods of the vulnerable. There is a body of evidence showing that rapid liquidity

¹ Basis risk is the risk that an index insurance product does not fully reflect the loss incurred by the insured. For example, a sovereign earthquake risk transfer policy might not pay if an earthquake occurs but the location of the quake is too far from key exposures to generate a large loss. If basis risk is low, then the product will offer reliable protection. If it is high, protection will be unreliable.

is most useful if systems are in place to deliver livelihood support, basic services, and public infrastructure quickly and efficiently post-disaster. There should also be protocols in place that ensure quick needs assessment and prioritization, as well as procedures for effective emergency procurement. These will help expedite rehabilitation and reconstruction activities after disasters.

Increasing transparency and accountability of post-disaster spending is important, but the World Bank faces strict limitations regarding the audits it can require from governments. Where auditing capacity is scarce, post-disaster expenditure would ideally be specifically targeted by recipient countries for auditing, given heightened risks of misappropriation. For the World Bank, only auditing of eligible expenditure items is possible. Therefore, if premium subsidies are channeled through the World Bank, it could only require audits of the funds intended to pay for the premium itself.

Given World Bank limitations on requiring detailed audits of payouts from subsidized insurance, one option is to require the submission of expenditure reports to risk carriers. An arrangement could be established where beneficiary countries that receive payouts for budget support provide a generic report on expenditure in response to the event for which the payout was received. This is the approach adopted in the Caribbean and Central America: member countries of the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC) that benefit from World Bank financial assistance for purchasing sovereign insurance have agreed to submit generic reports on disaster response efforts to CCRIF SPC.

The cost of sovereign disaster risk insurance should be quoted in a standardized manner. For example, it could be quoted as a percentage of the average annual loss (AAL). This would (i) support client countries' in developing DRF capacity by increasing their understanding of insurance products and the key drivers of their cost; (ii) ease comparisons of concessional insurance across countries by using the same index/metric, and thereby increase understanding of value for money; and (iii) increase transparency of pricing.

Phased approach to implementation

Given the evolving nature of concessional risk finance, a two-phase approach to implementation is proposed. Concessional risk finance is a complex, sensitive and rapidly growing subject area. Thus, it is important to adopt a flexible, evidence-based approach to implementation that enables

adjustments over time, and that takes stock of lessons from implementation to refine and improve the implementation model. This approach also enables improved risk management, as risks from implementation can be identified early in the process and mitigation actions can be taken. A two-phase approach could be adopted; an initial pilot phase implemented at small scale would if successful be followed by a scale-up phase implemented at larger scale. If moving to the scale-up phase, wider engagement across the World Bank would be required, including with World Bank Treasury, Development Finance, Legal and relevant global practices to develop consensus on the implementation modality of a concessional insurance fund.

Country allocations of subsidies

Rules determining the allocation of subsidies to countries should be transparent and could consider performance indicators and country needs. Performance criteria could be a factor in determining the allocation of subsidies, in a way analogous to how International Development Association (IDA) resources are allocated.² In addition, country needs determined on the basis of GDP per capita and the number of absolute poor could be considered. While following clear rules for allocating subsidies will be crucial during the scale-up phase of the program, this may not be practical during the pilot phase, when available resources will be limited. Instead, a pilot could allocate resources on a first-come-first-serve basis and identify countries where concessional risk finance has the strongest potential to contribute to the World Bank Group's twin goals.

Once a country's allocation is defined, there must be clear and transparent rules that determine the proportion of the premium that will be subsidized and co-paid by the country. One potential rule is that countries pay at least some fixed proportion of the AAL, with subsidies financing the rest of the premium (GAD 2017). The premium subsidy structure should be as simple and transparent as possible and apply to all countries. Countries should easily understand what percentage of the average annual loss they are expected to co-pay, both in the first year they receive subsidies and in following years, when their co-pay might increase depending on what kind of graduation rule is adopted.

When determining the proportion of premium to be subsidized, competitiveness with other low-cost sources of finance should be considered. IDA countries have access to

² The main factor determining a country's IDA allocation is its performance, as measured by the Country Policy and Institutional Assessment (CPIA) and Portfolio Performance Rating (PPR).

low-cost finance. This is particularly true in the context of IDA18, and subsidy levels should be set to incentivize countries to apply.

The criteria determining when a country “graduates” from eligibility for premium subsidies need to be transparent and reward achieved developmental milestones. Such milestones could include a country’s GDP per capita rising above the IDA threshold; or its proportion of absolute poor falling below a specified threshold. Further potential criteria are discussed in the main text, which also notes that the development and graduation criteria will be critical for the scale-up phase of a sovereign insurance subsidy program. During the pilot phase, the small amount of available resources will automatically limit the potential length of time during which countries can receive subsidies.

There should be transparent and valid criteria and rules, applicable to all countries, that determine (i) eligibility for subsidies, (ii) the allocation of subsidies to countries, (iii) the proportion of premiums that can be subsidized, and (iv) when a country graduates from subsidies. These criteria and rules would also apply to countries that already pay for sovereign insurance premiums with their own funds. Such countries might revert to a situation where they pay only a proportion of premiums until they graduate. The risk that this is perceived as a step backward needs to be weighed against the reputational risk and political difficulty of excluding countries if they already pay for premiums.

Should the premium subsidy program be implemented by the World Bank, it would initially develop criteria for a pilot phase in an operations manual. Should the pilot be successful and the program scale up, all the above criteria and rules should be developed as part of a more comprehensive operations manual for a premium subsidy program reviewed and endorsed by World Bank management. This manual should ensure that subsidies for insurance do not encourage strategic behavior by countries.

Given the suggested PDO, concessional insurance could be offered to International Bank for Reconstruction and Development (IBRD) countries in which a significant proportion of the population is vulnerable. In such cases, a grant could be offered to IBRD countries to reduce their cost of borrowing. This could result in a significant reduction in the interest rates on loans to recipient countries, thus incentivizing IBRD countries to develop disaster response plans that target their vulnerable populations.³ However, should subsidies be offered to IBRD countries, the indicators determining which IBRD countries could access them would have to be transparent and independently verifiable,

to ensure that decisions on eligibility are immune to political pressures.

Early payouts could support sustainability of sovereign risk insurance, through demonstrating how insurance operates in practice. There are multiple factors to consider in seeking to increase the likelihood of early payouts, including (i) the diversification of risk between countries, and (ii) the conditions under which insurance contracts make payouts. Insurance is usually best used for less frequent, larger losses. The greater the diversification of the portfolio, and the more conditions under which the insurance is expected to pay out for individual contracts, the greater the likelihood of a payout in a given year.

Any premium subsidy project implemented by the World Bank must align with World Bank Country Partnership Frameworks (CPFs), and ideally should be integrated into World Bank lending operations. Alignment to CPFs not only is a World Bank operational requirement, it also increases country buy-in, as CPFs are developed in close consultation with client countries. Linking sovereign insurance to lending operations (for both IDA and IBRD countries) will enable the premium subsidy project to piggyback on existing, and tested, implementation processes, including procurement guidelines, fiduciary requirements, environmental and social safeguards, and audit procedures. It will also lower the transaction costs of implementation, ease the administrative burden on clients, and reduce the risks of misappropriation, as well as leverage a larger resource base.

The eligibility criteria in the table below could be considered for accessing premium subsidies.

The governance model involving the World Bank and the donor partners should reflect the trade-off between joint ownership of decisions and associated (reputational) risks, and the operational agility of how any premium subsidy program is managed. The rationale for having donor partners and the World Bank jointly decide on which proposals to approve for subsidies rests on the fact that providing premium subsidies can be complex, as sovereign catastrophe insurance is a complicated product. However, a case can also be made for a model where donor partners cannot approve or reject individual proposals, but have an endorsing role on strategic priorities, annual work plans, and budgets of the program. World Bank experience suggests that such a model ensures more agile operations of trust funds and avoids delays in approval processes. The initial model chosen for the program could be revisited after a pre-determined pilot phase. After the initial pilot phase, the governance model could be adapted to reflect lessons and operational experience gained as well as the evolution of risks associated with the program.

³ This rule is applied by the Global Concessional Financing Facility.

Table ES.1. Potential Eligibility Criteria for Accessing Premium Subsidies

Criteria for accessing concessional insurance	Means of verification
1. Demand for technical and financial assistance from the client and World Bank CMU.	Letter of request for technical and financial assistance from client to the World Bank CMU Approval of Mission Announcement Letter from CMU stating that project team will engage in risk transfer solutions
2. Countries have access to IDA funds or have a poverty head count ratio above a pre-defined threshold (TBD) or are a member of the Small Island States Forum. (If subsidy is for regional government, the relevant regional figure applies.)	<ul style="list-style-type: none"> ▪ Official World Bank country classification ▪ Official World Bank poverty data
3. Disaster Risk Finance Strategy developed, which details the role of insurance and other financial instruments in a financial package and includes an adequate contingency plan for how funds will be spent.	Draft of Risk Finance Strategy with contingency plan shared with World Bank
4. Budget published in the last fiscal year.	Data from International Budget Partnership's Open Budget Survey; ^a for countries not covered by the survey, this information will be obtained from CMUs
5. Commitment to publishing data on post-disaster expenditures as part of the government reporting process.	Government letter stating such commitment
6. Development of a product summary report with the following information: <ul style="list-style-type: none"> a. Policy objective government seeks to achieve with the insurance product b. Basic risk profile/loss data, with justification for selection of risk insured c. Clear articulation of index used to capture losses if parametric; this could include explanation of the risk the index seeks to capture, the limitations of the index, proposed studies to strengthen index moving forward, and historical loss information of the index d. Key information on the structure of the insurance product and how it fits within the broader DRF strategy 	Report transmitted to the World Bank
7. CMU clearance to execute the transaction for the proposed insurance product.	Decision meeting chaired by CMU on technical proposal to move to implementation

a. International Budget Partnership, "Open Budget Survey," <https://www.internationalbudget.org/opening-budgets/open-budget-initiative/open-budget-survey/>.

An Investment Review Board (IRB) could be established to review investment proposals and provide technical recommendations to the program's Steering Committee. The key responsibilities of the IRB would include mobilizing expertise to conduct technical analyses that assure the quality of proposed insurance products; presenting final proposals

for concessional insurance to the program's Steering Committee (SC) for approval; and elaborating the criteria for accessing concessional insurance.

The application and selection process for concessional insurance could be organized as shown in the table below

Table ES.2. Concessional Insurance Application and Selection Process

Step	Description								
1	<p>Initial CMU approval and application submission</p> <p>Countries / task teams submit applications to the Program Implementing Unit, including documentation verifying countries' eligibility based on criteria 1–5 [see Table ES.1].</p> <p>There are two types of applications, requiring the following types of documentation:</p> <table border="1"> <thead> <tr> <th>Type A projects:</th> <th>Type B projects:</th> </tr> </thead> <tbody> <tr> <td>Stand-alone insurance premium project</td> <td>Integration of insurance premium component into World Bank operation under preparation</td> </tr> <tr> <td>Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU</td> <td>Project Concept Note (PCN), developed with CMU's approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met</td> </tr> <tr> <td colspan="2">Documentation that country meets eligibility criteria 1–5</td> </tr> </tbody> </table> <p>As part of the application, the countries / task teams will develop supplemental document which will detail:</p> <ul style="list-style-type: none"> ▪ The financial structure of the insurance product, including how it sits within the DRF strategy ▪ Indicative numbers on results / number of beneficiaries reached ▪ Indicative approach to engage with cat risk carriers ▪ Methodology to coordination with InsuResilience partners 	Type A projects:	Type B projects:	Stand-alone insurance premium project	Integration of insurance premium component into World Bank operation under preparation	Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU	Project Concept Note (PCN), developed with CMU's approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met	Documentation that country meets eligibility criteria 1–5	
Type A projects:	Type B projects:								
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Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU	Project Concept Note (PCN), developed with CMU's approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met								
Documentation that country meets eligibility criteria 1–5									
2	<p>Review and approval of funding application</p> <p>The SC evaluates countries' applications against eligibility criteria 1–6, accounting for:</p> <ul style="list-style-type: none"> ▪ Availability of funds in the Multi-Donor Trust Fund (MDTF) to finance premium subsidies; ▪ Availability of resources (in the MDTF or elsewhere) to provide technical assistance for the development of a financial package, including insurance <p>If the above conditions are met, the SC approves the funding request. The World Bank team begin preparing Project Appraisal Document (PAD), with funds committed from the MDTF, in accordance with World Bank operational procedures.</p>								
3	<p>Preparation of financial package</p> <p><i>Type A (stand-alone) projects:</i> The PAD must be approved by the Country Director / Regional Vice President. After approval, the recipient country develops the financial package with World Bank technical assistance as required. The financial package is submitted to the IRB.</p> <p><i>Type B (World Bank operations under preparation) projects:</i> Once the project becomes effective (e.g., six months to two years from PCN approval), the World Bank team will support the recipient country in preparing the financial package, including design of the insurance product. The proposal for financial package is then shared with the IRB.</p>								
4	<p>Technical review of financial package</p> <p>IRB reviews the financial package based on its ToR as a quality assurer. The IRB provide their professional judgment on the financial package. The IRB prepares a summary report for the SC. In the event where improvements can be made to the insurance product, the IRB prepares a response to the client with recommended actions to improve product quality. The IRB will prepare a summary report to the SC on the technical review and product design for their endorsement on a no objection basis.</p>								
5	<p>SC endorse summary report on a no objection basis</p>								
6	<p>Placement process</p> <p>The recipient country decides on how the product will be placed on the market, depending on [1] the insurance capacity in country; [2] the availability of risk pools in its region; and [3] its preferences for how the insurance product and premium payment are structured. Competitive and transparent placement should prevail.</p>								
7	<p>Final CMU approval</p> <p>The financial package including placement process is presented to CMU through a decision meeting chaired by the country director (or delegated person). The CMU provides input and a decision on whether to bring the product to market.</p>								

Step	Description
8	Insurance transaction is executed
9	Monitoring and evaluation (M&E) Including the assessment premium subsidies against proposed results indicators, documenting of lessons learnt from implementation to refine modalities moving forward and the conducting of impact evaluations on potential payouts, to gather evidence of the development impact of premium subsidies.



Background

Climate- and weather-related events—both sudden disasters and slow-onset changes such as rising sea levels—impair socioeconomic development, threaten sustainable development more broadly, and exacerbate poverty across the globe; according to one estimate, they force some 26 million people into poverty every year (Hallegatte et al. 2017). Sovereign disaster risk insurance, as part of a broader financial protection strategy, can help countries increase their financial resilience to disaster and climate risks: it allows them to secure access to rapid post-disaster financing for emergency response and early recovery needs; smooths the budget volatility that arises from unexpected disaster-related expenses; and incentivizes investments in risk mitigation and preparedness through the pricing of risk. More broadly, sovereign financial protection strategies complement other investments that increase resilience to natural disasters, such as investments in risk reduction and in preparedness. Finally, a risk-based approach to development increases countries' resilience to the shocks arising at the nexus of natural disasters, fragility, and conflict—which a growing consensus at the World Bank and among the international community sees as an important development challenge for both International Development Association (IDA) countries and International Bank for Reconstruction and Development (IBRD) countries.

Several recent studies have recommended concessional insurance to mitigate the impact of increasing climate and disaster risks faced by developing countries. For example, a recent World Bank report for the G20 encourages the development of innovative concessional financing for catastrophe risk transfer instruments, especially for low-income, highly vulnerable countries (World Bank 2017b). Similarly, a recent report submitted to the InsuResilience working group on concessional insurance highlights several potential benefits of sovereign insurance: it speeds up governments' response to shocks and increases their ability to credibly commit to pre-agreed response plans (GAD 2017). These benefits support government efforts to reduce both the impact of natural disasters on vulnerable populations and dependence on aid.

Building on lessons from past and existing premium subsidy schemes, and drawing on the World Bank's operational experience with disaster risk financing (DRF) instruments and approaches, this technical discussion paper seeks to inform the dialogue on operationalizing and scaling up concessional sovereign insurance. It provides guidance on the criteria for

determining who is eligible for concessional sovereign insurance; on the technical analysis needed before granting such financing; and on options for the governance structure of a Concessional Insurance Window (CIW), including a proposed process for accessing and granting its resources. It also identifies the key risks a CIW could face and discusses ways to mitigate these risks. While the report squarely focuses on concessional insurance, section 5 also discusses ways to provide concessional risk finance using other financial instruments.

Ultimately, this technical discussion paper could inform the design of an effective and sustainable CIW, one offering value for money and encouraging ownership of risk and accountability.

The Role of Public Subsidies in Achieving Policy Objectives

This section provides an overview of the role of public subsidies in achieving policy objectives. It is based on a review of relevant international experience with subsidies—primarily consumption subsidies—and to the extent possible draws on lessons from intergovernmental subsidy programs.⁴ Further key takeaways from the literature review are presented in annex 1.

Governments use subsidies to achieve wide-ranging economic, social, and political objectives. From an economic perspective, there are policy rationales for governments to intervene in private markets when they fail to operate efficiently (e.g., externalities, asymmetric information, imperfect competition, etc.) or when individuals fail to behave optimally due to behavioral biases (e.g., hyperbolic discounting⁵). Even if private markets are efficient and individuals behave optimally, governments often have a social rationale for intervening with subsidies to achieve desired distributional outcomes. Finally, subsidies are also commonly used as tools to achieve political objectives, although politically motivated or influenced subsidies often have perverse or unintended consequences.

4 Most rigorous analyses of subsidy programs, however, are of subsidies for households, farmers, and individuals; these micro-level programs are considered to the extent that they provide insight into dynamics relevant at the macro level.

5 "Hyperbolic discounting" is a term used in behavioral economics to describe inconsistent discounting of the future. In hyperbolic discounting, small delays are heavily reweighted downward, while longer delays are less heavily reweighted downward. In the standard economic framework, these delays would be discounted at the same rate.

International experience points to several subsidy program features that consistently contribute to success. Successful subsidy programs have clearly defined policy objectives based on economic or social rationales for intervention. They consider how providing subsidies to a target recipient group could affect this group's incentives (e.g., by creating moral hazard or through adverse selection) as well as the incentives of other stakeholders. To ensure sustainability, they also account for the costs of subsidies themselves and of program administration. In addition, they are insulated from political influences that erode their effectiveness.

The sections below go into more detail on the design of an effective concessional sovereign insurance CIW.

General considerations

A CIW should adopt clearly defined policy objectives for which there are economic and/or social rationales for intervention in the sovereign insurance market. The target recipients, criteria for eligibility, and terms and conditions for concessional sovereign insurance should reflect these policy objectives and economic and/or social rationales.

A CIW should provide concessional sovereign insurance to support recipient governments' implementation of broader policy agendas, such as disaster risk management (DRM), social protection, or public financial management. As part of broader disaster risk financing strategies, concessional sovereign insurance complements policies and investments in other areas of these agendas. To the extent possible, resources should be leveraged to help improve countries' preparedness for and resilience to disasters, especially if subsidies are provided over multiple years.

It is important to assess how concessional sovereign insurance may affect the incentives of target governments, other governments (donors and other developing countries), reinsurers, and other market participants. Depending on the program's design, concessional sovereign insurance could crowd in or crowd out demand for and/or supply of sovereign insurance. It could also affect donors' incentives to provide post-disaster aid for developing countries.⁶ In principle, subsidies for sovereign catastrophe insurance could encourage moral hazard for recipient governments because any potential loss resulting from their actions is partially covered by the insurance payout. However, given that sovereign insurance

payouts typically cover a small percentage of losses from an event, in practice this effect is likely to be small or negligible.

A CIW's governance structure should bring objectivity and transparency to the allocation of subsidies. The design and allocation of subsidies have a critical influence on whether a CIW achieves its policy objectives and whether it is considered legitimate by stakeholders. Governance principles that can help to prevent political influence on a CIW include the following:

- Technical analysis of subsidy proposals, based on predetermined technical criteria, must be part of the decision-making process and should cover both financial and policy areas.
- The decision-making process must be transparent and make publicly available the reasons for approval or denial of applications.
- Concessional insurance should meet a sovereign's needs, but all sovereigns should be subject to the same set of programmatic requirements to access it (i.e., there should be no country-specific exceptions to requirements for accessing concessional insurance).

Further general considerations are discussed in annex 1.

Subsidy design considerations

In addition to these general lessons, international experience with publicly provided subsidies provides several insights into the design of subsidies themselves. Relevant here are recent experiences of "smart" consumption subsidy programs, which aim to enhance take-up while offering an exit option if demand objectives have been met or minimizing fiscal costs if they need to be sustained (Cohen and Dupas 2010; Cai, de Janvry, and Sadoulet 2016).

- **High or full initial subsidies can have desirable properties for a new (financial) "technology" that requires learning.** Specifically, micro-level evidence shows that such subsidies increase initial take-up of the product as well as longer-term demand after subsidies have been removed or lessened (Cohen and Dupas 2010; Dupas 2014; Cai, de Janvry, and Sadoulet 2016). To the extent that learning is considered important for sovereign insurance products, the benefits of increased take-up and learning from higher initial subsidies should be considered against risks of aid dependency and/or moral hazard (GAD 2017).
- **For insurance, high initial subsidies appear to increase future demand by increasing the likelihood that the insured experiences a payout; it is the experience**

⁶ While this effect may increase incentives for countries to invest in DRM, it may adversely affect the populations of developing countries if not coupled with increased support for ex ante DRM instruments and disaster risk financing and insurance—that is, even with premium subsidies, countries may be underinsured [EOD 2016].

Table 1. Project Development Objectives (PDOs)

PDO	PDO indicators (outcomes)	Intermediate indicators (outputs)
Enhance the financial capacity of governments to respond to disasters		
Sub-PDO 1: Increase government access to rapid post-disaster finance	Governments supported by the project have received payment within a month of occurrence of a covered (insured) event [Y/N]	<ol style="list-style-type: none"> 1. Decision-making process to submit claim to risk carrier finalized and documented [Y/N] 2. Insurance report format agreed and finalized [Y/N]
Sub-PDO 2: Increase financial resilience of vulnerable households to disasters through rapid response	Governments supported by the project implement a rules-based approach for [1] delivering assistance to vulnerable households; [2] restoring critical transport infrastructure; and [3] restoring basic services [education, health, water & sanitation] [Y/N]	<ol style="list-style-type: none"> 3. Number of households with access to post-disaster financial assistance, by gender 4. Number of households with access to restored critical transport infrastructure, by gender 5. Number of households with access to restored education, health, or water & sanitation services, by gender

with a payout that matters. Specifically, an agricultural insurance study in China finds that a high initial subsidy increases the take-up of insurance, which increases the likelihood of experiencing a payout (Cai, de Janvry, and Sadoulet 2016). Symmetrically, the study finds evidence that not receiving a payout reduces demand for insurance. While evidence is limited at the sovereign level, anecdotal evidence suggests that countries’ experiences with payouts are indeed critical to future insurance demand.⁷

- **Full subsidies are not necessarily associated with reduced future willingness to pay for the technology (i.e., with price anchoring at zero).** The two rigorous “smart” subsidy studies reviewed (Cohen and Dupas 2010; Cai, de Janvry, and Sadoulet 2016) find that an initial price of zero does not result in unwillingness to pay a positive price in the future. These findings are consistent with the experience of Pacific Island Countries’ participation in the Pacific Catastrophe Risk Insurance Pilot.
- **Premium subsidies can impact future demand for insurance—not only from the insured subsidy recipients, but also from others in their network.** Cai de Janvry, and Sadoulet (2016) find that it is the opportunity to observe payouts in one’s network that increases demand. If subsidies increase take-up of sovereign insurance among some countries, other countries (in particular, their neighbors or peers) may learn from their experience and increase

their own take-up in the future, in particular if the insured country experiences payouts.

- **Premium subsidies that respond dynamically to an insured’s experience may be optimal for maintaining take-up after subsidies are removed.** A country that has received subsidized insurance for several years with no payout may be less inclined to purchase unsubsidized coverage, in particular if it has experienced loss events for which the insurance did not pay out (e.g., the Solomon Islands in the Pacific in 2014). A country that has received subsidized insurance and has experienced a payout, however, may be more inclined to purchase insurance.

Additional considerations are discussed in annex 1.

Policy Development Objectives and Results Indicators

The policy objectives that concessional risk finance seeks to achieve will be the key driver for the design of a CIW, its instruments, and the risks faced (with associated mitigating actions). To give just one example: if the policy objective is to reduce fiscal risks of government rather than protect the most vulnerable households within countries, the criteria for accessing finance will likely take account only of fiscal risk that disasters pose to government budgets, without regard to the poverty level and how it interacts with disasters within a country. Annex 2 illustrates how the design of a disaster risk finance intervention in Uganda was determined by the specific policy objective being pursued there.

In the past, disaster risk finance interventions have pursued a variety of objectives, such as reducing the impact of disasters on poor households, reducing government’s budget volatility, developing domestic private insurance markets, enabling rapid emergency

⁷ Vanuatu’s minister of finance and economic development, for example, explains the country’s commitment to the Pacific Catastrophe Risk Assessment and Financing (PCRAFI) Initiative, which includes an insurance facility: “In the Pacific we are extremely vulnerable to natural disasters. The PCRAFI facility will enable us to receive fast cash injections for emergency response and to sustain essential services in times of crisis. Following the devastation Cyclone Pam wreaked on Vanuatu in 2015, we are acutely aware of the value insurance programs like this bring in supporting our ability to respond quickly to disasters” (World Bank 2017a).

response and/or rapid rehabilitation, improving transparency and discipline in government budget allocation and execution, increasing the transparency of the response decision-making processes, improving cost-effectiveness, and strengthening coordination between different stakeholders in disaster response.

Table 1 shows the proposed PDO indicator and intermediate indicators.

Risks and Mitigating Actions

Stakeholders of a CIW, who include policyholders (i.e., beneficiary governments), donors, the CIW itself/the World Bank, risk carriers, and nongovernmental organizations (NGOs) and humanitarian organizations, face a variety of risks. Table 2 identifies possible risks by stakeholder and suggests possible mitigating actions for each one.

Table 2. Risks Faced by CIW Stakeholders and Mitigating Actions

Risk	Description of risk	Client governments	Beneficiaries
Significant risks			
Reputational risk to countries and/or Country Management Unit (CMU) due to (1) rejection of proposal, (2) ineligibility for CIW support, or (3) inability to access CIW due to its limited initial resources	<ol style="list-style-type: none"> Some countries may see their application for subsidies rejected and not accept/understand the reasons for the rejection. Countries that are not eligible for CIW support based on eligibility criteria may perceive these criteria to be unfair. If the initial CIW is drawn down completely or to a level below an applicant countries' proposed subsidy amount, countries may perceive a CIW as unfairly excluding them. 		
Lack of resources for technical assistance (TA)	If a CIW is to disburse grants, resources must be available to provide clients with needed TA for developing capacity on DRF, and ultimately for developing proposals for premium subsidies.		
Timing risk	The IDA18 replenishment is the largest replenishment in the 56-year history of IDA. It increases available IDA resources by about 50 percent. It will be challenging to get CMUs and regional teams to work on premium subsidy engagements, as they will be focused on their defined role of programming and disbursing their allocated IDA envelopes.		
Imperfect understanding of insurance product—e.g., failure to realize that funds might not be large enough to cover needs	Sovereign insurance products will not cover all the needs arising from a disaster: the sum insured could be partial, there could be exclusions, or the underlying risk model could be flawed.	X	X
Misspending of payouts	Many potential client countries are likely to have weak governance and public financial management systems. This leads to a heightened risk of leakage of funds and misappropriation.	X	X

Donors	Premium-financing CIW/World Bank	Risk carriers	NGOs/ humanitarians	Potential mitigating actions
X	X			<ul style="list-style-type: none"> ▪ Institute rules-based and transparent mechanism for subsidy application and allocation. ▪ Ensure criteria for subsidies are well communicated. ▪ Manage expectations and communicate pilot nature of CIW and limitations of funds. ▪ Clearly communicate with World Bank regional operational teams to ensure that all regions are aware of CIW pilot and have information on eligibility, application process, and limitations on funds.
X	X			<ul style="list-style-type: none"> ▪ Formally link the CIW to other DRF initiatives and trust funds to mobilize resources from these sources.
X	X			<p>Focus on:</p> <ul style="list-style-type: none"> ▪ Countries where there is demand for low-cost resources, which could include countries that are oversubscribed for IDA18 and/or countries that do not wish to take on additional debt ▪ Countries where existing engagements on DRF are strong, and/or where DRF is a priority for the CMU ▪ Offer countries large block grants to increase leverage of CIW resources.
				<ul style="list-style-type: none"> ▪ Offer countries a package of financial instruments, including contingency funds and contingent credit, to disburse when insurance will not pay out. ▪ Develop capacity to understand insurance products and their inherent limitations; draw on technical review of concessional insurance products in capacity-building efforts with government. ▪ Clearly communicate to both governments and the public that insurance is not a silver bullet. ▪ Explain to governments the advantages and disadvantages of insurance as part of a broader set of instruments.
X	X		X	<ul style="list-style-type: none"> ▪ For obtaining concessional insurance, ask governments to develop adequate contingency plans. ▪ Support governments with TA to improve their post-disaster expenditure frameworks. ▪ Offer World Bank TA to help governments produce reports on post-disaster spending; publish reports on official websites for increased transparency to citizens (e.g., process audits described in subsection 4.4.1 could be published). ▪ Choose insurance providers on the condition that they require countries benefitting from premium subsidies to report on expenditure; consider reducing subsidy eligibility of countries that do not meet the requirements.

Risk	Description of risk	Client governments	Beneficiaries
Basis risk and associated reputational risk	A country's experience with sovereign insurance may be perceived as bad by authorities and/or the population—e.g., in the aftermath of a basis risk event or if payments are small relative to total losses but large payments were expected. This could result in negative press coverage and/or political pressure on the insurance provider/donors to make ex gratia payments.	X	X
Creation of monopoly power/erosion of competitive pressures on insurance providers	Sophisticated service providers may capture [part of] the premium subsidy by offering uncompetitive pricing. This risk is greater if the catastrophe risk information used to determine pricing is not transparent.	X	
Politicization of CIW	CIW becomes driven by political objectives in addition or opposition to the project development objective		
Moderate risks			
Inability to channel funds to beneficiaries in a rapid manner	One of the benefits of parametric insurance is the fast payout after a triggering event. There is a risk, however, that funds do not reach intended beneficiaries in due time because of inadequate delivery systems.	X	X
Lack of country demand for premium subsidies	It is possible that only a very few countries are interested in premium subsidies.		
Too few business transactions	A CIW may deliver poorly—e.g., because of a market turn following large disaster losses in the United States or a lack of practical expertise in the placement phase.		
Other risks			
The risk insured against is not the most important one facing the country	Insurance may be taken out against risks associated with a hazard that is not responsible for most losses, on average. This could lead to reputational risk, e.g., if a country buys insurance against excess rainfall but is then struck by a significant earthquake against which no insurance was bought.	X	X
Adverse change in market conditions	A change in insurance market conditions could lead to higher premium prices in the future, which could reduce demand from governments and/or confound financial planning.	X	

Donors	Premium-financing CIW/World Bank	Risk carriers	NGOs/ humanitarians	Potential mitigating actions
X	X	X		<ul style="list-style-type: none"> Ensure that concessional disaster insurance products are part of actuarially sound insurance systems able to respond to both large and small disasters, such as a financial package which combines various financial and budgetary instruments to cover different risk layers. Increase technical scrutiny of products to reduce likelihood of basis risk events, where basis risk is relative to what the government believes the product will do. Publicly post the risk information underlying the average annual loss (AAL) used to determine the premium to be paid by the policyholder government. Ensure limitations on indexes are well understood by government. Require governments to clearly articulate what risks the index does, and does not, cover, and to highlight key shortfalls in the index. Publicly post and communicate claim payment rules to the authorities and to the public.
X	X			<ul style="list-style-type: none"> Require competitive selection of insurance providers for products secured with support from a CIW. Maintain transparency requirements for catastrophe risk information used in pricing (while respecting confidentiality concerns).
X	X			<ul style="list-style-type: none"> Have clear eligibility criteria that are well communicated to stakeholders. Ensure transparent application and decision-making process for grant approval.
				<ul style="list-style-type: none"> Prioritize countries with strong delivery systems. Invest in systems to enable rapid disbursement of resources. Vet contingency plans to increase certainty that the government will be able to disburse resources in the event of a disaster.
	X			<ul style="list-style-type: none"> Inform countries of the existence of a CIW in World Bank client engagements on DRM and DRF. Continue to build capacity on DRF and make the case for risk transfer as part of a broader DRF strategy where appropriate. Ensure subsidies are set at a level to encourage demand. Increase value proposition by offering a financial package, not just insurance.
	X			<ul style="list-style-type: none"> Clearly define realistic objectives up front, and ensure that relevant expertise, mandate, and resources (including staff) are in place to achieve those objectives. Maintain close interactions/communications with markets.
				<ul style="list-style-type: none"> Conduct basic risk assessment to understand risk. Ensure that the insurance product and its limitations are clearly understood by authorities and communicated to the public. Promote a financial package approach, where insurance is complemented by other financial and budgetary instruments to finance disaster response.
X	X			<ul style="list-style-type: none"> Build government capacity to understand insurance pricing and drivers of potential future price changes. Publish multiples charged for insurance, to increase transparency of pricing. Charge countries a fixed proportion of the AAL (in which case a CIW and not countries would bear the risk).

Risk	Description of risk	Client governments	Beneficiaries
Change in government budget priorities that reduces demand for sovereign insurance	Government's policy and budget priorities can change with changes in the administration and/or shocks unrelated to natural disasters. Changes in government priorities may suddenly reduce a country's demand for sovereign insurance and, in cases of regional risk pools, impact pricing faced by other countries.	X	
Default of risk carrier	If the insurance company from which the insurance policy was bought goes out of business, the country is exposed to the risk it insured against and loses the money for the premium.	X (If counterparty risk is not transferred)	
Legal and regulatory impediments/risks	Legal and/or regulatory requirements of client countries could delay and even impede sovereign insurance transactions. For example, some governments can buy insurance only through a national insurance company, which might lead to increased transaction costs/time.	X	
Fiduciary risk	The grant provided to the government for the insurance payment may be misappropriated.		
Taxes apply to premiums	Premium payments may be subject to national taxes, lowering the amount of coverage that can be purchased with a given subsidy.	X	
Targeting error	It is possible that the poorest households do not benefit from post-disaster transfers to select households because they have not been properly identified.	X	X
Placement/transaction risk	The policy may not operate as intended, e.g., due to exclusions, litigious claims, etc.	X	

Key Factors to Consider in Program Design

This section discusses some key factors to consider in designing a concessional insurance program: country context, the role of a comprehensive risk financing strategy, contingency planning, transparency and accountability, risk-based pricing, country allocation of subsidies, level of subsidies, and subsidy exit strategies.

Note that in an ideal world, a CIW's process for reviewing proposals and the evaluation criteria would comprehensively reflect the issues raised in this section. However, due to legal, operational, and political constraints, only select points will explicitly feed into the design of a CIW. This fact, and the reasons for choosing some issues and not others, will be further discussed in section 5, which addresses CIW implementation.

Country context

Taking country context into consideration is crucial for successful development interventions. In the case of sovereign concessional insurance, this includes political (economy) considerations. Specifically, the following need to be accounted for:

Level of development. Given a CIW's objective to reach the most vulnerable households, the selection of beneficiary countries should consider both a country's financial capacity to provide assistance (whether in the form of financial transfers or restored infrastructure and services) and the proportion of its people living in absolute poverty. More developed countries (as proxied by GDP per capita) tend to be better able to assist their populations (including the vulnerable) after disasters and to have a lower share of vulnerable households. Still, large concentrations of vulnerable households persist in several middle-income countries. In some cases,

Donors	Premium-financing CIW/World Bank	Risk carriers	NGOs/humanitarians	Potential mitigating actions
	X			<ul style="list-style-type: none"> Ensure “fit” of sovereign catastrophe insurance with government’s broader policy objectives. For countries that seek to access sovereign insurance through regional risk pools, consider how the pricing they face will be affected if some countries withdraw from the pool.
	X (If counterparty risk is transferred to the World Bank)			<ul style="list-style-type: none"> Ensure minimum credit rating of risk carrier. Subject to competitive pricing, promote diversification of number and type of risk carriers (private, public, risk pools, etc.). Transfer counterparty risk.
	X			<ul style="list-style-type: none"> Ensure potential legal and regulatory impediments to buying sovereign insurance are discussed with client governments from the beginning.
	X			<ul style="list-style-type: none"> Ensure that proper accounting standards are applied to any transaction from a CIW. Direct payments by a CIW to the risk carrier.
X	X			<ul style="list-style-type: none"> Find out what, if any, taxes apply to purchase of sovereign premiums. Clarify from the outset that governments are responsible for any domestic taxes and that subsidies are based on the premium price net of taxes. Manage expectations accordingly.
X	X			<ul style="list-style-type: none"> Prioritize countries that have well-established contingency plans with clear targeting methodology.
X	X	X		<ul style="list-style-type: none"> Hire a skilled insurance intermediary as well as brokers with wording and claims management expertise to vet any transactions. Conduct large market consultations. Ensure open and transparent placements.

the vulnerable households are geographically concentrated in areas with low-capacity regional governments. Selection criteria for subsidies could be devised so that such populations can also benefit from a CIW.

Level of stability (status as CFV [conflict, fragility, and violence] state) and quality of governance. Any recent history of (internal) conflict could be considered in a country’s funding proposals and the design of its DRF solutions. Fragility can undermine the implementation of DRF solutions insofar as it leads to weakened government systems, lessens the legitimacy of the government in the eyes of (segments) of the population, or promotes active conflict. At the same time, fragility may be compounded by natural disasters, which increase economic and societal stress. Given a CIW’s specific objectives, as well as the general objective of DRF interventions to better manage and reduce risk, a case can be made for prioritizing fragile countries for premium subsidies. While this paper does not suggest fragility as an explicit

criterion for evaluating subsidy request, the issue could be reconsidered when reviewing the access criteria after a pilot phase of the program.

The country’s ability to diversify risks spatially and across time (for instance, debt level, tax base). Catastrophe insurance is a means to smooth the costs of potential disasters across time. A country’s ability to spread costs across time and across regions affects how much it can benefit from insurance. In general, countries can spread disaster costs across time through debt, and across space through interregional transfers. The ability to take on debt to finance disaster expenditure in a cost-effective way depends on a variety of factors, such as the debt-to-GDP ratio, fiscal rules that may limit a country’s ability to contract the required amounts of debt, access to international capital markets, etc. The ability to spread risk across space depends on the system of interregional transfers and, crucially, on a country’s size and distribution of economic activity. A small country widely exposed

to disaster, or a larger one where most economic activity is concentrated in disaster-prone areas, may be unable to significantly spread disaster costs spatially. Such factors could be taken into account when preparing and evaluating proposals for subsidized risk transfer. That being said, relatively large and diversified countries can also benefit from insurance even if they have limited needs for risk transfer; this is because insurance offers other benefits, notably support for fiscal discipline and sound public financial management.

The technical capacity for understanding the financial instrument being offered. This is a prerequisite for taking ownership of the instrument, which in turn is an important condition for a successful and sustainable intervention. Furthermore, the capacity to properly understand risk transfer instruments, including their drawbacks and risks, is important both in order to minimize reputational risk to the World Bank and the CIW donors, and in order to safeguard the relationships between the World Bank and client governments. Requirements for capacity building before and after a risk transfer transaction could therefore be considered when selecting country proposals. In many countries, prior capacity building may be a prerequisite for entering a sovereign insurance contract.

The quality of potential delivery channels for post-disaster funds. A sound framework for disaster risk finance requires channels to deliver pre-arranged funds to intended beneficiaries.⁸ Systems to channel funds to beneficiaries after disasters include social protection systems, agricultural insurance, reserve funds, and public investment systems, among others. In principle, funds for post-disaster assistance could also bypass government systems and be channeled directly to private service providers (such as construction companies or payment system providers who are tasked with making social protection payments to pre-identified beneficiaries). The type and quality of arrangements for delivering insurance payout funds could therefore be considered when evaluating proposals.

The wider political economy of the country (i.e., the politics and formal as well as informal institutions), and how it might affect disaster risk finance and its effectiveness. It is widely acknowledged that political economy factors are central to development and a key determinant of the effectiveness of projects and other interventions.⁹ For instance, the coordination between agencies required for effective post-disaster response may be hampered by political competition between the heads of the agencies. Such risks could be

acknowledged when developing and considering proposals for concessional risk finance, and measures to mitigate them could be proposed.

The importance of comprehensive risk financing strategies

The importance of incorporating risk transfer into wider disaster risk finance strategies has been treated extensively elsewhere; see for example World Bank (2014) and Clarke et al. (2016). The discussion here is therefore brief.

The financing strategy for disaster response needs to support client countries in achieving their policy objectives. This involves clarifying the policy objectives (rapid access to liquidity, protection of the vulnerable from shocks, etc.) and identifying the target beneficiaries (government, households, subnational governments) and the perils to be covered. Only after this step can a financing strategy be developed to meet the identified objectives.

A CIW must align with other DRF initiatives and funding sources to deliver on its project development objectives (PDOs). Identifying DRF-related policy objectives is a nontrivial undertaking by client countries that can require years of technical assistance (TA). A CIW must rely on the activities of other initiatives to develop capacity, and ultimately proposals for concessional finance, up to the point at which it can review proposals. It is therefore critical that a CIW aligns with other TA initiatives that have the resources to finance the initial—and substantive—preparation work.

It is important to use the appropriate financial instruments for each layer of risk, as documented in the World Bank (2017b, section 1.5) report on risk pooling for the G20. This is particularly true for insurance. Numerous stand-alone sovereign insurance schemes have collapsed in the past, due to a combination of two factors: (1) the insurance product was poorly explained to the insured (governments), and (2) the disaster events were not severe enough to trigger a payout. These issues have been extensively documented (see for example EOD [2016]).

Stand-alone insurance (versus a comprehensive financial package) can also create perverse incentives for risk carriers. Stand-alone insurance providers may be tempted to offer insurance for more frequent events, since these events are more likely to generate payouts and therefore “prove” insurance is an effective financial risk management tool. In extreme cases, insurance protection for very frequent (less than 1-in-2-year) events may lead to “cash swapping,” where yearly premiums are paid to the insurer, and payouts are made to

⁸ See World Bank [2014].

⁹ Explicit recognition of this point by institutions such as the World Bank has been increasing since 1996, when then World Bank president Wolfensohn spoke of the “cancer of corruption.” For a recent example of World Bank research on the role of politics in development, see World Bank [2016b]. Clarke and Dercon [2016] discuss the politics of credible disaster plans and of post-disaster intervention more widely.

the insured nearly as often. Since insurance is expensive, this represents poor value for money for clients (and donors).

Experience suggests that sovereign insurance is primarily used to rapidly mobilize resources after a disaster. Governments use this rapid injection of liquidity to finance immediate response plans. Two recent examples from the Pacific are relevant here: Vanuatu and Tonga used payouts from PCRAFI (\$1.8 million and \$1.3 million, respectively) to provide essential liquidity for first responders. Payouts can also be used to rapidly scale up safety nets in response to shocks, providing much-needed resources to maintain household welfare. An example here is Uganda, where in 2016 \$4 million was rapidly mobilized through contingent Investment Project Financing (IPF) in response to a drought.

In the medium term, investments should be made in local insurance markets to facilitate further transfer of risk from the public to the private sector. In many developed nations, insurance companies are effectively used as risk carriers that transfer contingent liabilities (both explicit and implicit) from government to the private sector. Insurance markets in many IDA countries—and some IBRD countries—remain underdeveloped. Recognizing that donor countries will remain insurers of last resort for major humanitarian crises, and thus are likely to have a role to play in disaster response for many years to come, CIW-related TA could be linked to the insurance market development activities of multiple initiatives¹⁰ to promote local market development.

Contingency planning

Without contingency plans in place, disaster response will be delayed, and lives and livelihoods will be lost. The following factors can contribute to delays: (1) donors might have incentives to wait and see how much other donors pledge in assistance before committing funds; (2) time might be wasted by unnecessarily long needs assessments; (3) negotiations over the amounts of financing donors will provide, and for what purpose, take time; and (4) developing post-disaster plans takes further time. In addition, coordination failures can further delay disaster response, and can also render it less effective. These scenarios can be avoided, or at least mitigated, with pre-disaster planning and exercises to put developed plans into practice.

Ideally, plans would focus on outputs rather than inputs and would support the policy objectives of client countries. They should specify what will be protected and against

what; what the conditions for protection are; how protection will be implemented; and who will pay for what (Clarke and Dercon 2016). In turn, these plans need to be informed by the country's policy objectives: if a country seeks premium subsidies from a CIW, its policy objectives should be broadly aligned with those of a CIW.

Quick liquidity is most useful if systems are in place for quick and efficient post-disaster delivery of livelihood support, basic services, and public infrastructure. After disasters, governments need to provide both private and public goods. The former can include in-kind support to individuals and households such as food rations, housing (or support to rebuild housing), or cash payments, whereas the latter includes public infrastructure reconstruction, debris removal, and the provision of education and health services. Effective post-disaster delivery of private goods requires shock-responsive safety nets (to disburse cash) and effective logistics systems (to deliver in-kind disaster relief such as food). Whether aid is provided in cash or in kind, transparent targeting mechanisms are important to ensure that those with the greatest needs are reached. It is also worth noting that for countries new to sovereign insurance, products that result in more frequent payouts provide resources to test contingency plans and delivery systems. These small but more frequent tests enable government agencies to learn how to effectively disburse resources and to coordinate their activities in the aftermath of a disaster. In this way, the government builds its financial management capacity for larger events.

For quicker delivery of critical infrastructure, the possibility of payouts bypassing government accounts could be considered. For example, preselected service providers such as construction companies could be paid directly. Similarly, payouts could be made directly to payment system providers tasked with making social protection payments to pre-identified beneficiaries. This approach could be particularly relevant for small island states, where getting supplies into the country (or to remote parts of the country) may depend on the rehabilitation/reconstruction of critical infrastructure. To expedite rehabilitation and reconstruction activities after disasters, protocols should be in place that ensure quick needs assessment and prioritization as well as effective emergency procurement.

Transparency and accountability

A CIW's criteria for accessing funds could be designed to increase transparency and accountability in post-disaster spending. While there is still little evidence on what works to combat corruption, some research suggests that auditing and citizen monitoring can be effective in mitigating the risk of corruption. These steps are discussed below.

¹⁰ Relevant initiatives include the London based Centre for Global Disaster Protection, Consultative Group to Assist the Poor (CGAP), Access to Insurance Initiative (A2ii), Microinsurance Network, Impact Insurance Facility, and others.

Auditing

Where auditing capacity is limited and there is a heightened risk of misappropriating funds, post-disaster expenditure would ideally be specifically targeted for auditing by recipient governments. Audits are an important control function and can reveal outright corruption as well as expenditure inefficiencies. Audits that detect misappropriation of funds can lead to the prosecution of public officials, and therefore the credible threat of audits and prosecution can in principle lead to better public expenditure outcomes. Whether such threats are credible depends on the political independence of both public audit institutions and the judiciary, which may not be given in some countries

Evidence suggests that audits can improve expenditure efficiency if their results are publicized, thus allowing voters to “punish” officials who perform poorly (Ferraz and Finan 2008). Thus, the possibility of linking premium subsidies with minimum audit requirements and the publication of audit results could be explored. If the threat of audits could be credibly increased for post-disaster expenditure, and assistance in publishing the results could be provided, expenditure efficiency could be improved. Audits would have to be carried out by national audit institutions and follow existing legal frameworks. The focus of potentially scarce auditing capacity and resources on post-disaster expenditure can be justified both by its typically higher-than-average rate of return, and by the particularly high risk of corruption in post-disaster situations.

If the World Bank provides grants to subsidize insurance premiums, it cannot require recipient countries to provide audits of insurance payouts. Under the its legal and operational framework, the World Bank can ensure that recipients use the finance it provides as intended, and only on eligible expenditures. If finance is provided to purchase or subsidize insurance, the World Bank’s statutory obligation is to ensure that the funds were indeed used for the purchase of insurance, and it is entitled to ask recipients to present evidence to that effect. However, it is neither obliged (by its own rules) nor legally able to demand that recipients of the subsidy account for how they used potential insurance payouts.

This constraint applies regardless of the mechanism through which payouts are channeled to the ultimate beneficiaries. Imagine the case of a CIW that subsidized premiums for insurance that would backstop the increased financing needed to scale up, or add financing to, an existing World Bank IPF operation. The payouts would be channeled through established delivery mechanisms—but the constraint still holds. After all, the World Bank is not the financier of the insurance payouts, the risk carrier is; it therefore has no legal right to request that the payouts be audited. However,

given that the mechanisms to account for such funds are already in place (as required by standard IPF financial management practices), it might be possible, on a case-by-case basis, to have recipient countries report on payouts in the same way as on other IPF spending.

In other instances, recipient countries that receive payouts for budget support could be required to provide a generic report on how the funds have been used. This is the approach currently being adopted in Central America, where (potential) member countries of the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC) need to commit to submitting generic reports to CCRIF SPC—i.e., to the risk carrier itself—if they are to receive World Bank financial assistance with their CCRIF SPC participation fee. While the implementation details of this approach are still being elaborated, it has two advantages. First, it is not hampered by the World Bank’s inability to require audits of government spending not directly financed by the World Bank. Second, the generated reports would cover all expenditure in response to a particular disaster, rather than spending financed with the payout as such—which would probably not reveal much about post-disaster expenditure efficiency, given that money is fungible.

Before establishing a CIW, potential beneficiaries and donors should clearly understand the scope and requirements of potential reports on expenditure. This step is important to manage the expectations of all involved parties regarding the scope and type of reporting requirements that can be applied, and to provide clear guidance on the scope, objectives, and content of expenditure reports to potential CIW beneficiary countries. The approach adopted for CCRIF SPC member countries could serve as a model for potential reporting arrangements between the beneficiaries of CIW grants and the World Bank. However, the details of what each country can be expected to report might depend on its systems for tracking disaster response spending. Task teams may need to provide parallel TA to countries to improve their systems for recording and tracking disaster-related expenditure.

A CIW (rather than the risk carrier) could consider requiring process audits to inform and improve processes for the implementation of post-disaster contingency plans. Given the constraints to requiring detailed financial audits facing the World Bank, a CIW could consider requiring countries to complete process audits, following the model of the African Risk Capacity. Such audits could examine the quality of the contingency plan implementation, and thus examine various associated systems and processes. They could include field visits and, where beneficiaries are households, could survey a statistically significant proportion of households to assess the responses’ quality, impact, and consistency with pre-agreed response plans. The ultimate purpose of

process audits would be to identify strengths and weaknesses, provide feedback to all relevant stakeholders, learn lessons, and provide suggestion for improvements.

Beyond audits

Civil society has a role to play in monitoring post-disaster projects and activities. Civil society's involvement in monitoring of post-disaster expenditure can complement formal control mechanisms and may be especially useful in contexts where formal control mechanisms are weak (whether for political economy or capacity reasons). Civil society organizations (CSOs) will often monitor government interventions on their own initiative. However, their monitoring role could be enhanced if it is formally acknowledged by government agencies, and if channels are established for them to provide feedback to public officials. Preparing response plans before disasters will help civil society organizations carry out monitoring. A CIW could explore the option of involving CSOs in monitoring post-disaster expenditure and could approach the World Bank's Global Partnership for Social Accountability for this effort.

Countries could be encouraged and enabled to publish expenditure information online. The most basic ingredient for transparency and accountability is citizens' access to relevant information. While formal audits can help hold public officials accountable for misspending, in many contexts there are political alliances between those charged with holding officials accountable and those who have misspent funds. In many cases, moreover, donor pressure after reports of misspending is likely to have limited effect. Providing citizens and CSOs with information on what services and projects they can benefit from should lead to increased demands that those services and projects be provided as planned. At a minimum, keeping citizens informed in this way requires that expenditure information is publicly available, easily accessible, and available in forms that are user-friendly and/or amenable to analysis. Where possible, a CIW could encourage publication of such information and could assist counterparts in developing the necessary technical capacity, procedures, and online tools to do so.

Communication campaigns centered around plans and their implementation are important (not least to get political buy-in). Research on the politics of disasters points to a political premium gained by politicians who are seen to raise funds after disasters (as compared to receiving pre-arranged payouts). To increase the incentive of politicians to arrange disaster risk finance solutions *ex ante*, a CIW could encourage project teams to develop and implement strategies for clearly communicating the role and benefits of sovereign insurance (and other DRF instruments) in disaster response.

Monitoring and evaluation (M&E) and impact evaluations

Monitoring and evaluation arrangements should be built into a CIW to improve processes and products based on regular feedback from the implementation of individual projects. Thus, CIW M&E should cover the placement of the recipient country's insurance product and the recipient country's subsequent experience with the product, and it should feed into the CIW's results framework. Ideally, the results indicators of the CIW will be integrated where appropriate into the results framework of lending operations, which are developed in collaboration with client governments. This arrangement would enable a CIW to systematically gather M&E data as part of regular data collection for M&E of the lending operation, thus minimizing the reporting burden on government officials.

Rigorous impact evaluations could be commissioned where possible to establish the poverty impact (or lack thereof) of insurance schemes supported by subsidies; additional evidence could greatly influence ongoing discussions about sovereign risk insurance, given the product's novelty. The establishment of a CIW would represent a unique opportunity to gather further evidence on how its interventions affect a variety of relevant indicators, including poverty and shared prosperity outcomes. Given the rapid pace with which this agenda is advancing and the growing yet still small evidence base for sovereign insurance, a CIW should commit to gathering new evidence and expanding global learning. For example, for each insurance scheme it subsidizes, a CIW could agree to seek to mobilize \$200,000 to \$400,000 for impact evaluations of payouts. Upon its establishment, a CIW could also conduct a baseline assessment of measures established by CIW-eligible IDA and IBRD countries for financial protection against natural disasters, which would provide a reference point against which a CIW could measure its impact. Collaborations with the World Bank's Development Impact Evaluation (DIME) team, the Abdul Latif Jameel Poverty Action Lab, or Innovations for Poverty Action, among others, could be sought for that purpose.

Risk-based pricing

Risk-based pricing sends an important signal on the price of the risk. The higher the risk, the costlier it is to insure. It is important that beneficiaries of sovereign risk insurance are informed of and understand the underlying price of any risk that is transferred through fully or partially subsidized insurance. The advantages of risk-based pricing have been documented at length (see for example Cummins and Mahul [2009]).

The cost of sovereign insurance should be quoted in a standardized manner. Building on the GAD (2017) note

Example:

The AAL a country will finance using financial instruments is \$150. Of this \$150, \$100 is financed using insurance and \$50 is financed using contingent credit. Thus, the AAL for the insurance product is \$100 and in this example the premium charged by the market is \$150. The country pays \$25 and a CIW pays \$125. Thus, the total premium is 150 percent of AAL, with the country paying 25 percent of AAL and the CIW paying 125 percent of AAL.



Subsidy levels should be dependent on multiple context-specific factors, which are discussed further in the section 5.

“Concessional Sovereign Disaster Insurance,” the cost of insurance (composed of the level of subsidy and cost paid by the policyholder) could be quoted as a percentage of the average annual loss (AAL). This approach has three key advantages: (1) it would support developing DRF capacity of client governments through increased understanding of insurance products and the key drivers of their cost; (2) it would allow concessional insurance to be compared across countries using the same index or metric, making it possible to understand value for money; and (3) it would increase transparency of pricing in what has been traditionally an opaque market, and enable comparison of loadings across policies.

Allocation of subsidies to countries

Rules determining the allocation of subsidies to countries should be transparent and could consider country need and performance. It is important to note that the total amount of funds a CIW has available for a given time frame, e.g., three years, caps the total amount of subsidies it can allocate to countries. Once total available subsidies are determined and the countries with an interest in subsidies have been identified, the available resources need to be allocated across these countries in a transparent and rules-bound manner. Performance criteria could be a factor in determining the allocation of subsidies; this approach is analogous to how IDA resources are allocated.¹¹ Such performance criteria

could reflect wider development-related performance, such as the World Bank’s Country Policy and Institutional Assessment, or more specifically measure performance with respect to disaster risk management. In addition to performance, country needs—determined on the basis of GDP per capita and the number of absolute poor—could be considered when devising a formula for country allocations. A country’s AAL from natural disasters could also be considered as a basis to determine country needs. However, a rules-based allocation mechanism for available concessional insurance financing may not be practical in an initial pilot phase of a CIW. Initially, available finances may be allocated to countries that express an interest in CIW subsidies early on and/or countries that have longstanding DRF programs and are therefore readier for insurance transactions than others. But when a CIW scales up, a rules-based allocation mechanism will have to be developed.

Once a country allocation is determined, clear and transparent rules are required to determine the necessary co-payments for premiums; these ultimately determine the proportion of the premium that will be subsidized by a CIW.

Level of subsidy

International experience suggests that premium subsidies can be an important incentive for IDA countries to purchase sovereign risk insurance. Broadly, experience from successful sovereign risk transfer products for low-income countries demonstrates that subsidy provision can play an important role for insurance take-up. For example:

¹¹ The main factor determining a country’s IDA allocation is its performance, as measured by the Country Policy and Institutional Assessment (CPIA) and Portfolio Performance Rating (PPR).

- Haiti's purchase of sovereign insurance from the Caribbean Catastrophe Insurance CIW is subsidized 100 percent by the Caribbean Development Bank.
- Nicaragua paid for its CCRIF SPC policies with an IDA loan.
- Subsidies for policies purchased under PCRAFI range from 84 percent to 100 percent. The government of Japan financed 100 percent of the premiums in 2013. In 2014, participating Pacific Island Countries contributed approximately 5 percent of the total premium cost, a share that increased to around 16 percent in 2015. Currently, insured countries pay approximately 10 percent of premium out-right with the remainder being financed with IDA credits and grants (World Bank 2015).
- A counterpoint exists in Africa, where no country in the African Risk Capacity currently receives premium subsidies (EOD, 2016); instead countries finance sovereign risk insurance premiums from their budgets.

For middle-income countries, which can have access to financial markets, premium subsidies play a less important role. The recent Philippines transaction, with about a \$20 million premium, was fully paid by the Philippine Department of Finance, demonstrating that some IBRD countries have the willingness and capacity to pay for sovereign risk insurance. It should be noted, however, that such transactions can take years to materialize; this one occurred after about three years of a technical DRF engagement with the Department of Finance.

There is little evidence on the link between size of payouts (and therefore amount of premium) that governments receive from insurance and behavioral change of sovereigns. It is often claimed that paying a higher proportion of insurance premiums leads to greater risk ownership, and that the prospect of reduced premium prices associated with reduced levels of risk could incentivize governments to take risk reduction measures. To the knowledge of the authors, no empirical analysis exists that establishes a relationship between premium payments of governments and risk reduction behavior. Efforts to evaluate the effectiveness and impact of premium subsidies provided by a CIW should seek to shed further light on this link.

High premium subsidies could be important in the initial years of sovereign risk insurance schemes. World Bank operational experience suggests that governments focus on the amount they must pay for insurance and how that affects budgets, as opposed to the relationship between the premium and the financial impact of disasters. This is particularly true in the initial years of sovereign risk insurance programs,

when policyholders have limited trust in and experience with insurance as a risk management tool. Furthermore, an argument could be made for high subsidies as a way to support countries in learning the advantages of risk transfer (see annex 1). Increased take-up can increase the impact of a CIW by allowing it to leverage provision of concessional insurance to work with client countries on broader DRF goals.

Finally, subsidy levels should be considered in light of the potential political costs of meeting the criteria for applying to a CIW (suggested criteria are discussed in subsection 5.2). Applications for premium subsidies would require recipient countries to meet the criteria of applying to a CIW. In instances where countries need to increase transparency of post-disaster expenditure to meet CIW criteria, this requirement will carry a political cost. Countries may prefer to make use of a disaster response reserve fund with limited conditionality for when to disburse, and with no reporting requirements. In such instances, subsidy levels need to be large enough to incentivize decision makers to incur the political cost of meeting the CIW criteria.

Length of subsidy provision and CIW graduation criteria

Exit strategies have been a key concern of donors who have financed premium subsidies in the past. Donors seek sustainability for the interventions they finance, and subsidies for sovereign insurance premiums are no exception. Ensuring the financial sustainability of the insurance scheme once subsidies are withdrawn is a common donor objective—one that requires beneficiary countries to take over full responsibility for premium payments.

Two reasons for donors' emphasis on sustainability stand out. First, sustainability is a proxy for a results indicator. If a country is willing to finance premiums entirely with its own resources, it indicates true ownership of the scheme, which in turn suggests that the country deems sovereign insurance to be beneficial. Second, short-term premium subsidies are easier to justify to domestic audiences than longer-term schemes. Ultimately, donors' stance on the length of premium subsidy schemes will depend on the policy objective(s) they try to achieve with subsidies. For instance, if the objective is to shift from ex post finance to ex ante finance, promote greater risk ownership by countries, and eventually reduce dependency on humanitarian assistance, then they might deem a graduation point necessary.

Experience with premium subsidy schemes provides a mixed picture of countries achieving self-financed sovereign insurance coverage. Except for the Cook Islands, all PCRAFI participating countries could count on concessional IDA funds

through the Pacific Resilience Project (PREP) to finance premiums, estimated to amount to \$0.5 million per country per year. However, the countries have contributed \$20,000 in counterpart financing in the first season of the scheme, \$30,000 in the second, \$40,000 in the third (World Bank 2015) and \$50,000 in the fourth. CCRIF SPC—which was initially set up with donor funding—offers parametric disaster insurance to members of the Caribbean Community (CARICOM) and of COSEFIN (which comprises Central American countries plus Panama and the Dominican Republic). Currently, 14 CARICOM members as well as Nicaragua participate in CCRIF SPC. Haiti’s premium is fully subsidized by the Caribbean Development Bank. Nicaragua’s premium was financed with an IDA loan. According to CCRIF SPC’s most recent strategic plan, “some 61% of respondents indicated that in a situation of fiscal constraint, the country may reduce its coverage or possibly opt for no coverage” (CCRIF SPC 2015, 29). While this finding should be interpreted with caution, it indicates that sovereign insurance premiums could be vulnerable to short-term fiscal constraints. Overall, experience suggests that IDA countries and/or small island developing states find it difficult to finance sovereign insurance premiums with their own resources on a sustained basis.

One possible decision rule for premium subsidies could be that the marginal benefit of funds spent on them is greater than the marginal benefit of spending such funds on other investments/activities. From an economic point of view, financial self-sustainability should not feature prominently as a criterion in allocation of premium subsidies. Conceptually, premium subsidies are not more of a subsidy than many other forms of official development assistance (ODA). ODA is limited, meaning that both donors and recipient countries face difficult allocation decisions. Ideally, these decisions would be based on cost-benefit analyses that ranked different investment opportunities by their economic (i.e., social) rate of return.¹² In practice, projects are rarely, if ever, compared to each other across sectors. However, it is standard practice for multilateral development banks to conduct cost-benefit analyses of individual (investment) projects,¹³ since these projects need to be justified economically. If cost-benefit analyses are not conducted, narrative accounts of why particular investments are justified economically are still presented. Following this logic, premium subsidies at any point in time are justified if they provide a greater social return to marginal ODA funds than potential alternative investments. For countries that are likely to receive ODA for decades to come, premium subsidies could therefore be provided based on their own merits (and on how

they compare to the merits of other projects), insofar as the political economy of donor countries allows this. While this discussion outlines a clear rule for deciding how long ODA recipient countries could obtain subsidies, the formula is very information intensive and—if the number of potential recipient countries is large—might not be practical for determining which countries should obtain subsidies and for how long.

Premium subsidies can overcome recipient countries’ domestic political economy constraints on financing insurance, which might be binding even in cases where insurance is a high-return investment. Anecdotal evidence and experience suggest that, regardless of the underlying welfare benefits of buying insurance, premium payments are more difficult for governments to justify to parliaments and the public than spending on activities with more immediate and/or visible returns. This might be even more true in countries with low financial literacy. Premium subsidies are a powerful way to alleviate this constraint.

Behavioral considerations could justify a planned and gradual phaseout of premium subsidies. If a credible commitment to gradually withdraw premium subsidies can induce client countries to ramp up investments in risk reduction, a scheduled withdrawal of subsidies could be economically beneficial. Even in such a case, however, the benefits from additional risk reduction investments would have to be compared with the economic cost of losing rapid liquidity injections from insurance should client governments cease insurance coverage without subsidies.

To the extent possible, the provision of premium subsidies (and the length thereof) should be based on a mix of economic, political economy, and behavioral considerations. If the political economy of donor countries allows, and if subsidy withdrawal is unlikely to induce significant beneficial behavior by client governments, subsidies could in principle be provided for longer periods of time. However, the rationale for subsidies should be reviewed periodically.

Implementation Guidance

This section seeks to provide indicative guidance on the key considerations to be addressed in establishing a CIW, with the objective of furthering the discussion on operationalizing concessional risk finance. In practice, any decisions about establishing a CIW would have to be discussed at length with the key stakeholders and agreed upon.

Given the evolving nature of concessional risk finance, a phased approach to implementation is proposed. Concessional risk finance is a complex, sensitive and rapidly growing

12 In an ideal world this analysis would look at the global social return of investments, i.e., take account of externalities of investments. For example, if a particular investment helps avoid cross-border refugee flows, the benefits to neighboring countries of such investments should be taken into account.

13 The Inter-American Development Bank also requires economic analyses for policy lending operations.

subject area. It is therefore important to adopt a flexible approach to implementation that enables evolution over time, and that takes stock of lessons from implementation to refine and improve the implementation model. This approach also enables improved risk management, as risks from implementation can be identified early in the process and mitigation actions can be taken. A two-phase approach could be adopted; an initial pilot phase implemented at small scale would if successful be followed by a scale-up phase implemented at larger scale. Note that some aspects discussed in the following subsections may become relevant only during the scale-up phase of the program, since they may not be practical to implement during the pilot phase. Nonetheless, lessons learned during a pilot phase could inform all aspects of a scaled-up CIW.

Guidance on operational aspects of a CIW

Level of subsidies

For IDA countries, high subsidies through grants and/or concessional loans for sovereign insurance are likely appropriate, for the following reasons:

- **IDA countries have access to low-cost finance, so subsidy levels need to be high to be competitive.** Building on a recent research paper by the World Bank and other disaster risk financing and insurance experts (Clarke et al. 2016), a technical analysis was carried out to compare the value for money for governments offered by premium subsidies from a CIW versus other financing sources. The analysis is detailed in Box 1.
- **High subsidies will incentivize more countries to apply, which is important for early successes for a CIW.** As detailed in subsection 4.7, the larger the number of countries a CIW provides subsidies to, the greater the probability that there will be payouts, which will support sustainability.
- **High subsidies can help overcome the imperfect information on insurance among IDA countries, which is a function of their limited exposure to it.** As explained in subsection 1.2, in initial years of insurance programs high subsidies can be justified because they allow countries to learn about the benefits of insurance for the target group. There is limited, if any, exposure to risk transfer in many IDA countries; thus, an argument can be made that there will be limited appreciation of its advantages. This would reduce willingness to pay, and thereby increase the need for higher subsidy levels.
- **High subsidies will also incentivize IDA countries to complete the subsidy application process.** With

multiple and competing demands on the time of civil servants in IDA countries, the level of subsidy needs to be sufficiently high to incentivize them to spend the time preparing and submitting proposals to a CIW. Low(er) levels of premium subsidies will inevitably generate less interest due to the administrative work of applying to a CIW.

Available IDA resources will increase by roughly 50 percent under IDA18,¹⁴ so establishing a CIW in the current environment may present a challenge. IDA18 represents the largest replenishment in IDA's 56-year history. This surge in available IDA resources could have multiple impacts on a CIW:

- IDA resources are cheap. Thus a CIW will need to offer a competitive financial package consisting of subsidies and/or concessional loans to compete.
- IDA resources are deployed in large tranches, following a standardized set of administrative processes (see annex 4). For example, the safety net project loan sizes are \$130 million in Uganda, \$250 million in Kenya, \$400 million in the Philippines, and \$80 million in Niger. Thus, with a view to minimizing administrative cost, countries may prefer to request additional financing from their IDA envelope to finance disaster response (whether through a safety net or transport/education/agriculture sector project), instead of applying for subsidies through a CIW.
- The focus of regional teams and Country Management Units (CMUs) will be on programming and disbursing IDA18; thus to engage the CMUs, it will be important to align a CIW with relevant lending operations. To give two examples: in Uganda, as of March 2017, the World Bank's portfolio stood at \$2.46 billion (credits and grants), and it was recently allocated \$500 million from the sub-window for refugees under IDA18. In Laos, the World Bank expects to provide \$240–\$270 million over the next three years for new programs, in addition to an ongoing portfolio of about \$400 million. The focus of CMUs and regional teams will be on programming and disbursing these resources.

The amount of resources available from a CIW determines the extent to which it can drive policy change. If a CIW offered premiums for three years to target countries, with a premium amount of \$1 million per year, the total insurance protection a CIW could provide would be around \$10 million.¹⁵ Considering the increase in IDA resources, and the volume of development finance (including World

14 IDA18 total replenishment was equal to \$75.0 billion. IDA 2016.

15 It is assumed that the insurance policy mirrors that used in the Philippines, which provides a full payout for a 1-in-30-year disaster, and a partial payout [40 percent of full payout] for a 1-in-10-year disaster. The insurance multiple is assumed to be 1.4.

Box 1 Comparison of Financing Sources for Disaster Response in IDA Countries

A hypothetical country is chosen to represent a medium-size diversified economy heavily reliant on agriculture for employment. The country is exposed to recurrent disaster risk with mid-sized shocks every three to five years. The risk has a relatively short tail; thus, the probable maximum loss (PML) 100 is approximately 10 times the average annual loss. The country is eligible for IDA lending, and has limited access to capital markets, which lend at high interest rates [about 12 percent]. As the amount of IDA lending is limited, the country is assumed to have used its full allowance of concessional loans; thus, a risk financing strategy that includes the use of IDA credit would reduce the amount of concessional loans that can be used to finance other investments. A full list of assumptions are given in annex 3.

The formula from Clarke et al. [2016] is used to calculate the financial cost of different instruments to meet the marginal cost for each layer of risk in the risk profile. This approach enables a comparison of risk financing instruments for each incremental layer of risk, and therefore identifies the most cost-effective instrument for each layer. The cost of using a single financing instrument for the entire risk profile is also calculated, to enable comparisons between instruments.

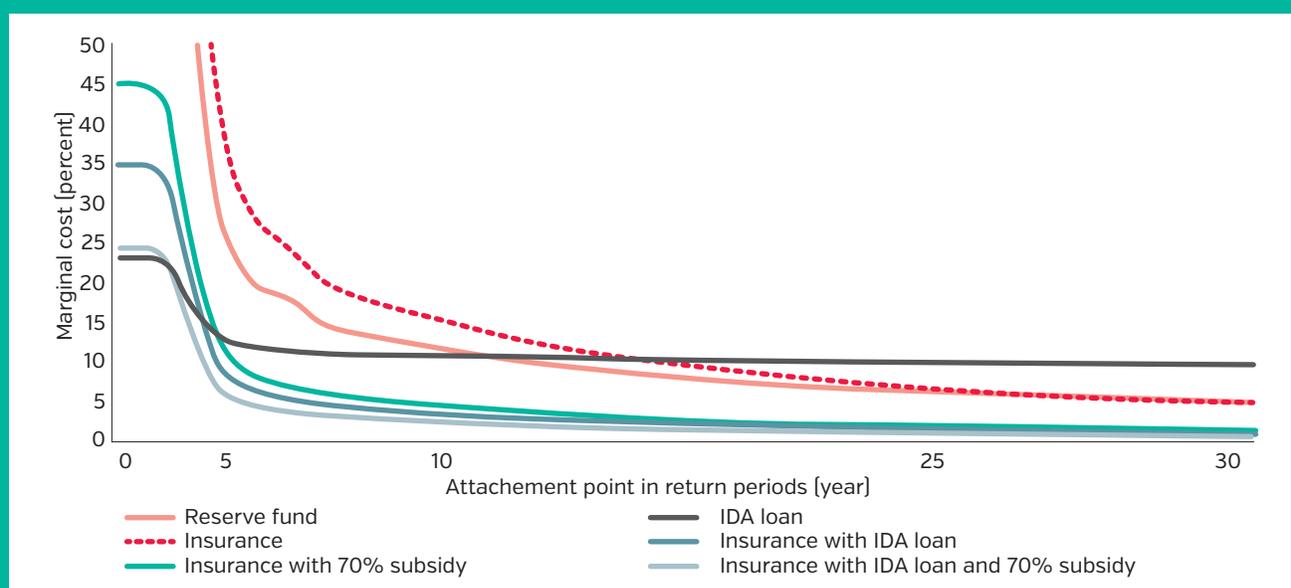
Two potential financing instruments are assumed to be available to meet post-disaster losses: [1] a loan borrowed at IDA terms, and [2] market-rate sovereign insurance, which can be paid from the budget of the client or with concessional IDA credit.

Six options for financing response were analyzed:

1. Using a reserve fund
2. An IDA loan
3. Insurance, paid by the government at market rates
4. Insurance, paid by the government with an IDA loan
5. Insurance, paid by the government with a 70 percent premium subsidy
6. Insurance, paid by IDA loan with a 30 percent premium subsidy

The results are given in Figure 1.

Figure 1. The Marginal Cost of Financing Instruments



Results

The country will use the lowest-cost financial tool to meet post-disaster needs, so for a given return period loss on the x-axis, a country should use the line closest to the x-axis.

For low-frequency events (< 1-in-3-year loss), the IDA loan provides the best value for money with the lowest marginal cost of risk. This result makes intuitive sense, given that insurance is expensive for low-layer risks and IDA loans are cheap. However, as the severity of loss increases, the cost of insurance for the marginal layer of risk decreases. This again makes intuitive sense, as insurance can be an effective tool to manage the cost of low-frequency/high-severity events. When the IDA loan is compared to the insurance at market rates, the insurance becomes better value for events with a return period greater than approximately 13 years.

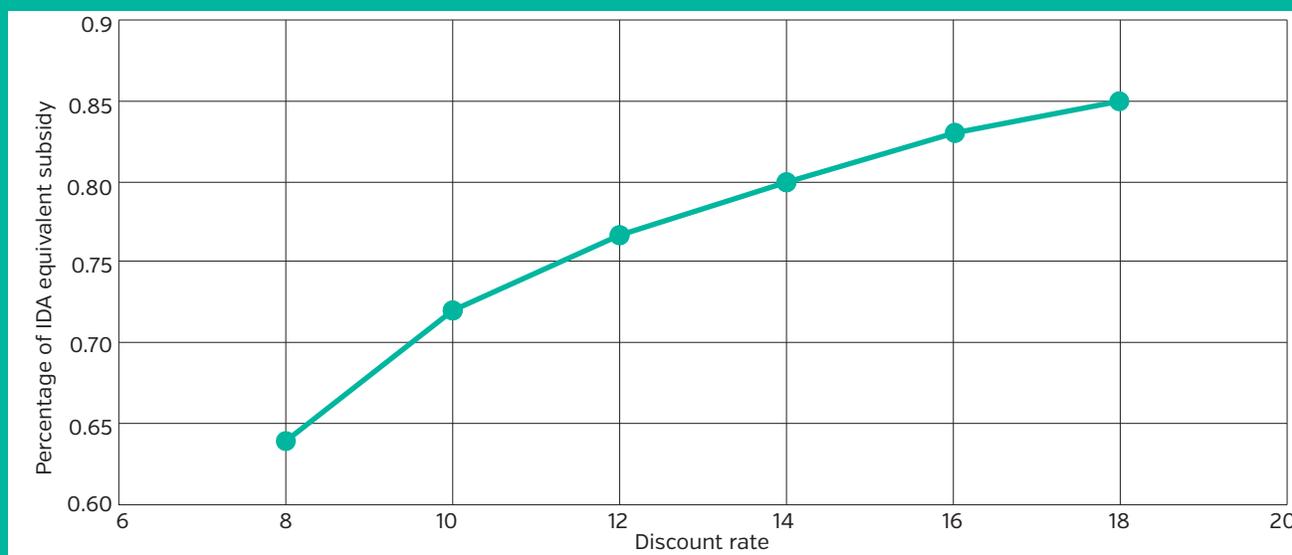
Option 3 uses an IDA loan to pay for insurance, which dramatically decreases the cost. This is primarily driven by the fact that IDA lending rates are low [assumed to be 1.45 percent] and that discount rates for IDA countries tend to be high [assumed to be 12 percent]. This lowers the net present value (NPV) of this option.

Comparing option 3 to option 4 shows that using IDA to pay for insurance costs less than a 70 percent premium subsidy. This result is again driven by the low NPV of the repayments of the IDA loan used to pay for insurance. The point at which premium subsidies become cheaper than IDA is when they reach 77 percent of premium. Therefore, for subsidies to be the lowest-cost option, the subsidy level needs to be greater than 77 percent [assuming that the nonsubsidized portion of premium is paid from the budget]. Finally, option 5 is the best value option for the country, as it avails itself of both low-cost IDA lending and premium subsidies.

Sensitivity analysis

A critical assumption in the above analysis is the discount rate used to calculate the NPV of the IDA loan repayments. A sensitivity analysis was conducted, which investigated the impact of changing the discount rate on the percentage of the insurance premiums which is subsidized, and investigating where subsidized insurance becomes better value than IDA to pay for insurance. The results of this sensitivity analysis are given in Figure 2.

Figure 2. Level of Premium Subsidy Required versus Discount Rate



As expected, the greater the discount rate used to calculate the NPV of the IDA loan, the lower the cost of the IDA loan. With low-cost IDA available to countries, subsidies must be increased to provide equivalent value.

Please see annex 3 for more information on the analysis presented in this box.

Bank credits and grants) countries can access, a CIW should adopt policy change objectives commensurate with the leverage provided by the volume of resources it can deploy. For instance, it might be unrealistic to expect countries to undertake major public financial management reforms (often politically difficult or costly) in return for subsidies that are small compared to the policy lending operation amounts that the World Bank usually leverages for policy reforms.

Expanding access to IDA lending

Although available IDA resources have significantly increased, countries ultimately have a limited amount of low-cost credit they can access. Once a country's IDA envelope is programmed, through IPFs, Program-for-Results (P4R) instruments, and Development Policy Loans (DPLs), the country has exhausted its access to low-cost credit from the World Bank. This can be a binding constraint for some IDA countries.¹⁶

Select IDA countries can access credit at below-market rates through the Scale-Up Facility (SUF). The SUF offers loans at 4.5–5.0 percent to eligible countries.¹⁷ IDA countries that are at low or medium risk of debt distress are eligible to access the SUF. This arrangement expands access to concessional credit for IDA countries. However, the loans are still more expensive than IDA loans.

A CIW could offer countries financial support that would extend their access to IDA credit. A CIW could provide concessional finance to target countries, lowering the rate of borrowing to be in line with IDA terms if given preconditions were met. This approach is adopted by the Global Concessional Financing Facility,¹⁸ whose financial package for IBRD countries affected by the refugee crisis in the Middle East is provided at a rate equivalent to IDA's. A similar approach could enable a CIW to provide concessional credit for IDA countries that have exhausted their IDA envelope and for IBRD countries with disaster-affected vulnerable households.

This approach would involve providing the recipient country with a financial package to subsidize a loan that brought the borrowing terms in line with IDA's. Under this approach, a grant would be provided to the borrowing IDA/IBRD country upon finalization of an IBRD loan (for an IDA country, the loan would be through the SUF). In line with the approach adopted by the Global Concessional Financing

Facility, the value of the grant would equal the NPV of the difference between the repayments of the loan at IBRD and IDA lending rates. The cost of this approach to a CIW would be approximately 15–30 percent of the total premium (see box 2).

Target countries could use the additional credit to invest in financial preparedness for disasters. Specifically, the additional credit could be used to (1) pay for insurance premiums, where the insurance product would be designed in line with the guidelines of a CIW, and/or (2) act as a contingent line of investment credit, which could be drawn down under pre-agreed conditions to finance disaster response. For number (1), the triggers, delivery mechanism, and monitoring of the resources would be the same as for standard insurance products approved by a CIW. A more detailed discussion of contingent credit is given in the next subsection (5.1.3).

A CIW could consider offering this financial support to an IBRD country if a significant proportion of its populations is vulnerable. With many of the world's vulnerable living in IBRD countries, a CIW could provide subsidies to a country that has a credible response plan targeting vulnerable populations. An example is the Philippines, which in response to Typhoon Haiyan scaled up the support provided through its safety net program to the country's vulnerable households. A CIW could therefore incentivize IBRD countries to develop disaster response plans that target their vulnerable populations.

A key challenge of this approach is the increased debt burden on the target country. Despite the fact that this approach gives target countries access to low-cost borrowing, it is still borrowing, which the country must repay. There is likely to be low demand by countries with high debt levels and/or an unwillingness to borrow (because of a conservative fiscal policy stance or borrowing limits imposed by fiscal rules). For such countries, using insurance as opposed to contingent credit to finance part of a disaster response is likely preferable, as this would not add to a country's debt after disasters.

Financial package for financial resilience

This subsection explores some key considerations should a CIW offer countries a financial package, including insurance and concessional contingent loans, to finance disaster response.

Such a package can improve the sustainability of sovereign risk insurance schemes. Parametric risk insurance products are exposed to the risk that the insurance does not trigger a payout when a disaster response is required. Careful design of the insurance product, and building of users'

¹⁶ The timeline for programming IDA envelopes tends to vary from country to country.

¹⁷ Further details about the SUF are in World Bank Treasury [2017].

¹⁸ The Global Concessional Financing Facility supports middle-income countries impacted by the influx of refugees by providing concessional financing and improved coordination for development projects that address the impact of the refugee influx. See the organization's website at <http://globalcff.org/>.

Box 2. Concessional Finance to Enable Expansion of IDA Lending Terms for Target Countries

The analysis undertaken here assumes a grant is given to a country to lower the cost of borrowing from IBRD to IDA lending rates. It further assumes the grant is equal to the difference between the NPV of the loan repayments under IBRD and IDA lending terms.

The amount of this grant depends on multiple assumptions, including the term of the loan, the spread between IDA and IBRD interest rates, and the discount rate to calculate NPVs. The two key assumptions that have the largest influence on the NPVs are the term of the loan and the discount rate used to calculate the NPV.

Given the sensitivity of the results to these assumptions, the amount of the grant was calculated under two scenarios (shown in table 3):

1. The term of the loans (both IBRD and IDA) is 20 years, and the discount rate is 10 percent.
2. The term of the loans (both IBRD and IDA) is 30 years, and the discount rate is 5 percent.

Both options make the following assumptions:

- Insurance premium (financed through credit): \$1 million
- IBRD fixed interest rate: 4.09 percent
- IDA fixed interest rate: 1.25 percent

Table 3. Comparison of Loan Scenarios

	Term of loan (years)	NPV discount rate	Subsidy amount (difference between NPV of IDA & IBRD loans)
Option 1	20	10 percent	\$147,000 [15 percent of premium]
Option 2	30	5 percent	\$281,000 [28 percent of premium]

Discussion with reference to market interest rates

Should a CIW wish to lower the cost of borrowing for a target country from market rates to IDA lending rates for that country, the cost dramatically increases. For example, if the country can borrow from the market at 12 percent, the grant needs to be approximately 66 percent of the loan amount.

financial awareness, can reduce but not eliminate this risk. Ensuring countries have access to other sources of finance, like contingency funds and contingent lines of credit, is critical to address this inherent limitation of parametric insurance. Examples of situations where parametric insurance could fail to trigger a payout include the following:

- **Disaster events within the deductible of the insurance product.** These events impact governments/vulnerable households but are not large enough to trigger an insurance payout.
- **Basis risk events.** These disaster events cause large financial losses, but are not captured by the index. There are multiple examples of sovereign risk transfer products (in Malawi, Ethiopia, Kenya, Solomon Islands, etc.) that have not triggered due to these issues.
- **Perils that are not covered by the insurance.** These situations lead to very high reputational risk for development partners, multilateral development banks, and clients (see

table 2), and pose a threat to the sustainability of sovereign risk insurance schemes.

A financial package, with instruments to disburse resources under these scenarios, helps clients manage the limitations of parametric risk transfer and thus improves sustainability.

As part of a financial package including insurance, a CIW could consider providing concessional contingent finance to target countries to support financial resilience. In this case, grants from a CIW could be used to increase the size of an IDA loan, enabling a recipient country to mobilize further resources in the event of a disaster. The resources could be disbursed by a CIW as a grant, with no obligation to repay, or used to buy down additional IDA investment credit as described in subsection 5.1.2, with an obligation of repayment.

The discussion below assumes that CIW resources are added to a component within an IPF or a contingent emergency response component (CERC) of a World Bank lending

Table 4. Options for CIW Subsidy Provision

Modality of subsidy provision	Situation where instrument is applicable
Grant premium subsidy	IDA/IBRD country has limited willingness and/or ability to pay for insurance.
IDA loan	IDA country has limited willingness and/or ability to pay for insurance, but has an investment project with a DRF component, and is willing to use its IDA resources to finance insurance premiums.
Subsidized SUF loan	IDA country has limited willingness and/or ability to pay for insurance, has programmed all its IDA resources, and/or is unwilling to use its IDA resources to pay for insurance premiums.
Subsidized IBRD loan	IBRD country is unwilling to pay for insurance with budgetary resources and is unwilling to finance insurance premiums at IBRD rates.

operation, given the growing development partner demand for transparency of post-disaster spending and the limited ability to track resources disbursed through DPLs.

The rules for disbursement of the concessional contingent finance would be detailed in an operations manual, which the World Bank would have to approve, as dictated by World Bank Group standard operating procedures. The operations manual could clearly state the conditions under which the resources are mobilized. The scope of these conditions could range from hard triggers (for example, the Uganda NUSAF project has satellite-based triggers for disbursing resources from its DRF component; see annex 2) to soft triggers (for example, CERCs can be disbursed with a letter from a ministry stating a disaster has occurred).

As the concessional contingent finance is disbursed through an IPF, funds would be monitored and reported on according to IPF reporting procedures. As discussed in subsection 4.4.1, the World Bank can ensure the finance it provides is used as intended by the recipient. In this case, the resources used to finance the disaster response would come from the World Bank (as opposed to the risk carrier of a sovereign risk insurance product), so the concessional contingent finance would be subject to standard IPF reporting procedures. This approach increases the visibility and transparency of expenditure. An example here is the NUSAF III project in Uganda, where the government of Uganda reports to the World Bank on all resources mobilized through the concessional contingent finance component (called the “Disaster Risk Finance” component). This component contains a contingent line of credit that is disbursed based on a combination of hard and soft triggers (more details are in annex 2).

Table 4 outlines the different situations under which each of the instruments described above could be applicable.

Insurance product selection

The recipient country and its unique needs will determine the selection of an insurance product. For a CIW,

the overarching objective will be to ensure that the country, and donors, get the best value for their money from a product. A CIW should remain agnostic as to the selection of the specific risk carrier to manage the financial product (conditional on the risk carrier meeting the technical and financial requirements to provide the service). By having an open and fair competitive bidding process for products sought by applicant countries, a CIW can ensure that countries receive value for money for risk transferred to risk carriers.¹⁹ This approach also ensures that the applicant country has access to a variety of product options. Independent technical and financial experts will evaluate all applications to a CIW and assess the value for money they represent (see subsection 5.2.1 below).

Benefits of certain risk carriers beyond value for money could also be considered. Sovereign catastrophe risk pools could provide additional benefits for countries beyond low-cost products, including political ownership, the ability to mobilize donor support and operational efficiencies, and transparency in use of payouts; these are discussed in detail in the World Bank (2017) technical report for the G20. Using public sector (re)insurance companies as risk carriers can support development of insurance capacity in local markets, an important objective in itself.

The recipient country should take the lead in deciding how to take sovereign risk insurance to the market. Operational experience in executing sovereign risk insurance transactions shows that the needs of client countries vary. As clients face different financial, political, regulatory, and capacity constraints, the process for how the product will be taken to market will vary country to country, and will be determined by the client. Options include transferring the risk through regional risk pools, identifying a local/international broker, and using the World Bank Treasury to execute the transactions.

¹⁹ Selection of an insurance product requires competitive reinsurance markets. If at any time it is determined that these markets are not competitive, then the selection process will need to be amended.

Box 3. Likelihood of Payout

The number of countries insured and the frequency of payout both influence the likelihood of a payout being triggered: Three different scenarios were analyzed looking to achieve a 65 percent chance of a payout in a given year, assuming payouts are statistically independent. As the number of countries insured decreases, the attachment point of the insurance must be reduced to achieve the same likelihood of payout [assuming zero correlation of risk between countries].

1. If a CIW insures 10 countries, each with a 1-in-10-year attachment point, there is a 65 percent of payout in given year.
2. If five countries are insured, each country must have a 1-in-5-year attachment point to maintain the same probability of a payout in a given year.
3. If three countries are insured, each country must have a 1-in-3-year attachment point to maintain the same probability of a payout in a given year.

Sustainability of insurance and graduation from a CIW

International experience suggests that a CIW might need to provide subsidies for 5–10 years before insurance is sustained by client countries themselves. There is limited if any international experience showing early (1- to 4-year) exit of subsidies for insurance programs by IDA countries. At least for low-income countries, the continued provision of subsidies over a 5- to 10-year time horizon might be necessary to ensure sustainability of the product. Some evidence (see section 1) Role of Public Subsidies in Achieving Policy Objectives on household-level insurance suggests that insured beneficiaries are more likely to pay themselves once payouts have been made, but there is no sovereign-level behavioral evidence to that effect.

Early sovereign insurance payouts will support sustainability of a CIW. This is supported by the evidence presented in subsection 1.2, which shows that both receiving payouts and seeing neighbors and peers receive payouts can increase recipient countries' understanding and appreciation of insurance, and thereby stimulate demand.

There are multiple factors to consider should a CIW wish to increase the likelihood of early payouts and thereby demonstrate the product's success.²⁰ The likelihood of having a payout will depend on (1) diversification of risk between countries, which will be driven by the perils insured and the geographical spread of risk, and (2) the conditions under which an insurance contract will make a payout for a given country (e.g., if an insurance contract makes payouts for both droughts and floods, it would make payouts more frequently, on average, than a contract that just makes payouts for

drought). The greater the diversification of the portfolio, the more frequently the insurance is expected to payout, increasing the likelihood of a payout in a given year. Box 3 discusses the likelihood of payout in more detail.

The criteria determining when a country “graduates” from CIW eligibility need to be transparent and could reflect the reaching of relevant developmental and/or poverty reduction milestones. Developmental milestones could include a country's GDP per capita rising above the IDA threshold; or the proportion of its absolute poor falling below a specified threshold. Other relevant milestones could reflect general needs for concessional finance in terms of access to debt capital markets; or they could include specific milestones in insurance market development, such as a specified non-life insurance penetration rate (although this would have to be weighed against the potential risk of disincentivizing countries from building their insurance markets).

While graduation criteria focused on relevant development and market indicators have clear advantages in terms of transparency, they might be hard to justify politically in some instances.²¹ For example, if persisting low per capita GDP and/or low levels of market development give countries access to insurance subsidies over many years (possibly decades), both CIW donors and their constituents might raise questions about countries' ownership of the insurance scheme or about sustainability. Experience suggests that increased contributions to premium payments by client countries are viewed as a sign of increased ownership of insurance schemes and of sustainability. If a gradual phaseout of subsidies is preferred to an indicator-based graduation from a CIW, a schedule of subsidies could be developed up front and be applied to all countries equally. Alternatively,

²⁰ As a CIW intends to support recipient countries in accessing international insurance markets, it is assumed that insurance principals will be applied to the products supported by a CIW, and therefore that only legitimate payouts will be made [i.e., there will be no ex gratia payouts].

²¹ Applying adequate graduation criteria might not be relevant for the pilot phase of a subsidy program. However, when the operations manual for a CIW is developed, it might include these criteria for discussion and to set expectations at the outset on when countries lose access to a CIW.

several subsidy schedules could be developed and applied to different groups of countries, e.g., one for IDA countries and one for IBRD countries. One major drawback of such a schedule would be that it decouples the length of subsidy provision from any developmental or performance-related criteria.

Key criteria and rules should be transparent and valid for all countries, specifically rules determining (1) eligibility for subsidies, (2) the allocation of subsidies to countries, (3) the proportion of premiums that can be subsidized, and (4) the point at which a country graduates from subsidies. These rules and criteria would also apply to countries that already pay for sovereign insurance premiums with their own funds. Such countries might revert to a situation where they pay only a proportion of premiums until they graduate. The risk that this is perceived as a step backward needs to be weighed against the reputational risk and political difficulty of excluding countries if they already pay for premiums.

Should a premium subsidy program be implemented by the World Bank, it would initially develop criteria for a pilot phase in an operations manual for the program. Should the pilot be successful and scale up, the criteria and rules listed above should be developed as part of a more comprehensive operations manual for a program reviewed and endorsed by World Bank management. The World Bank could implement a pilot phase of a premium subsidy program without (fully) developed rules for determining the allocation of subsidies across countries, the proportion of premiums that can be subsidized, or the point at which a country graduates from subsidies. In fact, the pilot phase could serve to provide lessons that would inform the development of such criteria. While a pilot phase would require eligibility criteria, these could also be refined and/or amended based on lessons learned, before being recommended for adoption by a scaled-up premium subsidy program.

Link to lending operations

Linking to lending operations (for both IDA and IBRD countries) will enable a CIW to piggyback on existing, and tested, implementation processes. The World Bank and other development banks have developed a complex set of implementation processes, including but not limited to technical, procurement, fiduciary, and auditing issues, in addition to government-led monitoring and evaluation. These processes have enabled the World Bank to implement projects at scale. Aligning subsidies provided through a CIW to lending operations allows a CIW to build on these existing systems and checks, without need to duplicate them or create their own. There is growing experience in the World Bank Group in developing DRF-related components in lending operations, where the objective of the component is to finance

trainings, capacity development, and investments in DRF-related activities.

Linking insurance to lending operations would lower the administrative burden on clients, in addition to reducing risks of misappropriation. Aligning with the processes of such operations would limit additional work for recipient countries. For investment lending operations (IPFs), all funds spent by clients must be tracked and reported to the World Bank. This reduces (but does not eliminate) the risk of misuse of funds. In the case of development policy lending operations, where resources are provided as budget support, the client does not report to the World Bank on how funds are spent. However, certain macroeconomic and fiduciary requirements need to be met to obtain budget support from the World Bank.

Potential criteria for accessing concessional financing

Taking into account the limited financing available for concessional insurance and the proposed policy objectives for a potential CIW, some criteria are suggested here to identify target countries for concessional premium finance during the pilot phase. The criteria listed in table 5 are not meant as definite recommendations, but rather as potential criteria to inform discussion.

Rationales for the suggested criteria:

Criteria 1 and 7: The World Bank implements its country programs according to Country Partnership Frameworks (CPFs), which are agreed on with the client country and then implemented by the CMU. The CMU is the gatekeeper for all operational work in target countries, and therefore must approve of any sovereign risk transfer products financed with World Bank resources, along with linked technical assistance. The letter of request from the client country demonstrates a level of buy-in from decision makers in government, and a minimum level of commitment to the risk financing agenda.

Criterion 2: This criterion seeks to ensure that a CIW reaches the most vulnerable countries as well as households.

While the overarching goal of a CIW is to enhance the financial capacity of governments to respond to disasters, a CIW seeks to ensure that it is the most vulnerable households that ultimately benefit. Countries with access to IDA funds are either the world's poorest countries or countries with other characteristics that make them particularly vulnerable to shocks (e.g., various small island states that are blend countries). Hence it is suggested that all countries eligible for

Table 5. Potential Eligibility Criteria for Accessing Concessional Finance from a CIW

Criteria for accessing concessional risk finance	Means of verification
1. Demand for technical and financial assistance from the client and World Bank CMU	Letter of request for technical and financial assistance from client to the World Bank CMU Approval of Mission Announcement Letter from CMU stating that project team will engage on risk transfer solutions
2. Countries have access to IDA funds or have a poverty head count ratio above a pre-defined threshold (TBD) or are a member of the Small Island States Forum. [If subsidy is for regional government, the relevant regional figure applies.]	<ul style="list-style-type: none"> ▪ Official World Bank country classification ▪ Official World Bank poverty data
3. Disaster Risk Finance Strategy adopted or being drafted, which details the role of insurance and other financial instruments in a financial package and includes an adequate contingency plan for how funds will be spent.	Draft of Risk Finance Strategy with contingency plan shared with World Bank
4. Budget published in the last fiscal year.	Data from International Budget Partnership's Open Budget Survey; a for countries not covered by the survey, this information will be obtained from CMUs.
5. Commitment to publishing data on post-disaster expenditures as part of the government reporting process.	Government letter stating such commitment
6. Development of a product summary report with the following information: <ul style="list-style-type: none"> a. Policy objective government seeks to achieve with the insurance product b. Basic risk profile/loss data, with justification for selection of risk insured c. Clear articulation of index used to capture losses if parametric; this could include explanation of the risk the index seeks to capture, the limitations of the index, proposed studies to strengthen index moving forward, and historical loss information of the index d. Key information on the structure of the insurance product and how it fits within the broader DRF strategy 	Report transmitted to the World Bank
7. CMU clearance to execute the transaction for the proposed insurance product	Decision meeting chaired by CMU on technical proposal to move to implementation

a. International Budget Partnership, "Open Budget Survey," <https://www.internationalbudget.org/opening-budgets/open-budget-initiative/open-budget-survey/>.

IDA funds and all members of the Small Island States Forum could have access to a CIW.

However, a very large proportion of people in absolute poverty live in middle-income countries (as defined by the World Bank). To effectively target the most vulnerable, a CIW could therefore also be made accessible to countries with a poverty head count ratio above a pre-defined threshold.²²

However, it can be argued that concessional insurance, like IDA funding, should be available to low-income countries and blend countries only. Such an approach would have the following advantages.

- It would be in line with the established World Bank framework for providing concessional finance.
- It can be easily explained and justified to external stakeholders, including client countries and donors.
- There would be a clear per capita GDP threshold limiting eligibility.
- A dedicated World Bank unit exists that establishes which countries fall under this category, so no new methodology or effort is required to establish eligibility.

However, there are also advantages to including IBRD countries with significant shares of poor people:

- This approach would help increase shared prosperity.

²² The agreed ratio should be validated with poverty specialists before being adopted. Guidance from a poverty specialist should also be sought on a case-by-case basis if necessary data are not available for an applicant country.

- It would be in line with the suggested PDO of increasing vulnerable households' financial resilience to disasters through rapid response, and with similar objectives of key development partners.
- It would include countries with greater technical capacity, thus facilitating transactions that might lead to valuable demonstrations of the benefits of insurance against disaster risk.

Should a premium subsidy program be implemented by the World Bank, the World Bank would have to decide which approach to take. Before scaling up the program, it would have to review the approach chosen for the pilot phase and then choose an approach for the scaled-up program after adequate internal and external consultations.

Criterion 3: This criterion seeks to ensure that only countries that have (or currently are developing) a comprehensive policy and financial framework for disaster risk finance are eligible for concessional insurance. Moving toward effective financial protection against disasters can entail an array of policy reforms or measures to improve systems for risk identification and risk assessment, guidelines on the use of available funds, coordination between relevant government units, business continuity, etc. Insurance is most effective as a financial risk management instrument if embedded in a larger framework of financial protection. As mentioned in the discussion of the relative cost-effectiveness of different financial instruments for different risks (box 1), insurance is most cost-effective for low-frequency and high-impact events, and should be complemented by other instruments to decrease the impact of disasters on public finances and to smooth costs over time (hence the need for a financial package, discussed in subsection 5.1.3).

Contingency planning for how to spend resources is important for effectively and promptly utilizing funds for disaster response, including insurance payouts. Ideally, plans should define the following: which people and public assets will be prioritized in disaster response; how much funding is likely to be allocated to pre-defined groups of people and public assets; how and by whom such response measures will be implemented, and through which delivery channels; and how the response measures will be financed.

Criteria 4 and 5: Additional financial resources received after disasters are only useful for mitigating their economic and social impact if not wasted or misappropriated for illegitimate purposes. Greater transparency of government spending can minimize the risk of corruption by enabling greater citizen and civil society oversight. Criteria 4 and 5 would ensure that access to premium subsidies is granted only to countries that at a minimum publish their budgets and commit

to publishing post-disaster expenditure data. Such data could be published on a government website, which would allow citizens to understand what activities and/or projects were financed after disasters. It could be made available in machine-readable formats (e.g., Excel) so that citizens, CSOs, think tanks, etc. can analyze it.

Criterion 6: A key challenge of past sovereign risk transfer programs has been that recipient countries often lack awareness of the product. In combination with basis risk events, this drawback has led to the discontinuation of multiple sovereign risk transfer pilots. By clearly articulating what index the product is tied to, what its drawbacks are, and how it supports policy objectives, governments will be required to develop a sound understanding of the insurance product and the underlying risk data that drive it.

Technical analysis to support country implementation

This subsection discusses a proposed technical analysis of the insurance package (more information is in subsection 5.3), which could be conducted in parallel to the CIW decision-making process for providing subsidies and could ultimately be used to inform the recipient country about the design of the sovereign risk insurance.

Recognizing the capacity limitations in client countries, it is proposed that independent expert(s) perform a technical analysis of the risk information and risk transfer product.²³ These independent experts could form an Investment Review Board (more in subsection 5.3.3), which could develop a report to be shared with the Steering Committee of a CIW to increase global knowledge on sovereign risk insurance, and with the recipient country to inform product design and build the recipient country's technical capacity. Note that certain sensitive aspects of the analysis (for example, exposure data of key government assets, or proprietary loss models) cannot be shared publicly. In these instances, the findings could be presented in way that enables easy sharing of information that is not sensitive. This work would most likely be a desk-based review of available information and models, primarily provided by the recipient country.

The analysis could focus on two areas: (1) risk information/catastrophe (CAT) risk model, and (2) financial product. Each is summarized here, and further details are given in annex 5

²³ If a CIW maintains the view that it will provide resources only for subsidies, additional resources will need to be mobilized to pay for this work. This possibility further strengthens the need for a CIW to align with other DRF-related initiatives to provide complementary financing.

Risk information/CAT risk model

This section of the analysis should seek to provide assurance to the recipient country and the CIW that the risk information/CAT risk model used to calculate losses is fit for purpose. The tests that the independent expert could conduct include the following:

- Precision analysis, which varies one and many parameter(s) at a time
- Accuracy analysis, which calculates the probability of catastrophic basis risk and the catastrophic performance ratio²⁴ for the product
 - Probability of catastrophic basis risk describes the probability of not receiving a claim payment when the insured has a catastrophic loss
 - Catastrophic performance ratio describes the amount, on average, that the insured receives back relative to the premium paid in the event of a catastrophic loss
- Historic analysis, which compares modeled loss, if appropriate, to actual losses (if available)

The summary should highlight the model's strengths and limitations, and should recommend additional analysis to improve the model's quality and robustness.

Financial product

This section of the analysis, developed by a financial expert (for example, an actuary), should provide an overall review of the financial product and a professional judgment on its quality. The report should consider the appropriateness of the insurance product, and of concessional premiums, for the recipient country's unique needs. It should identify key risks and provide guidance on the level of such risks as well as potential mitigating actions. The key areas to focus on include basis risk, pricing, appropriateness of insurance to manage the risk, and possible mitigation factors, including ways to strengthen the value of the insurance product for the recipient country.

Technical and financial experts' reviews could be based on predetermined technical and financial criteria and could culminate in a recommendation to a CIW's decision-making body to inform the decision on grant approval. The technical and financial criteria could be developed to

align with the questions listed in annex 5. The experts could include a recommendation for approval based on their professional judgment.

A CIW could maintain a public roster of independent technical and financial experts who provide these analyses. Independent review by members of the roster of experts would mitigate the risk of conflict of interest in proposal review (detailed in subsection 5.3). The reviews could then be provided to a CIW's decision makers to guide their approval determinations. The operations manual for a CIW could include a roster of experts.

CIW commitment to transparency

A CIW would present an important opportunity to promote transparency in DRF, from the application process to use of post-disaster claims payments. A CIW could promote transparency during the application phase by requiring that catastrophe risk information underlying insurance products is to the extent possible open. Exceptions to this requirement may need to be made in certain cases, for example, when government asset data are confidential. In such cases, a CIW could make exceptions while requiring that other components of the catastrophe risk information remain open. More broadly, throughout the application and implementation cycle, a CIW could strive to make information public whenever possible.

Potential governance structure of a CIW

This subsection discusses possible options for the governance structure of a CIW and the processes by which proposals for concessional risk financing could be submitted, reviewed, and approved or rejected for funding. Ultimately, should steps be undertaken to operationalize a CIW, the governance and process for application will need to be discussed and agreed on with donors. In line with the previously proposed phased approach to implementing a CIW, the initially adopted governance structure could be reviewed after a pilot phase. Based on the review's recommendations, the governance structure and the application process for financing of insurance premiums could then be refined before scale-up of the program.

Governance model

Trust funds (TFs) are the financial vehicle within the World Bank to deliver grants, as would be done under a CIW. There are several governance options that could be considered when structuring such a window. The World Bank has standardized

²⁴ The terms "catastrophic basis risk" and "performance ratio" are defined in Morsink, Clarke, and Mapfumo [2016].

the set of governance models that can be adopted to streamline negotiations and operations of TFs and to ensure that best-practice governance models are used.²⁵ The B.2 model, for example, provides donors with relatively greater degrees of decision-making authority than two of the three other standard options; it provides a balance between efficiency and development partners' input in decision making. Under this model, the Steering Committee (SC) of the TF has an endorsing role. The SC would endorse a CIW's annual work plans (which could include a list of potential subsidy recipient countries) and budgets. It would also review a CIW's annual progress. This model is appropriate for most projects and programs.

For politically sensitive issues such as concessional insurance, the joint development partner (DP)–World Bank decision-making model could be considered for the pilot phase. Under this model, the SC has decision-making authority over grant requests to a CIW. The rationale for joint decision making between the World Bank and the donor(s)—a process to be based on transparent, objective criteria in CIW grant approval for sovereign risk insurance subsidies—rests on the following points:

- A CIW would be a major advance in the programmatic provision of premium subsidies for sovereign catastrophe insurance, and there is currently a lack of experience with such approaches undertaken on a large scale.
- Decision making about the provision of premium subsidies, whether for farmers, households, or sovereigns, can be complex and even controversial, which could justify involving more parties in the decision-making process at the proposal level.

Over time, as a CIW moves from a pilot phase to a scaled-up phase, a case can be made for a model where donors cannot approve/reject individual proposals, but have an endorsing role on CIW strategic priorities, annual work plans, and budgets. World Bank experience suggests that such a model ensures more agile operations of trust funds and avoids delays in approval processes.

For further information on the different types of governance models along with examples, see annexes 6 and 7.

Program Implementing Unit

The World Bank could act as the Program Implementing Unit for a CIW. The Program implementing Unit could be

responsible for (1) maintaining a roster of independent technical and financial experts that could conduct the technical analyses proposed in subsection 5.2.1; (2) presenting applications for concessional insurance to the SC for approval; (3) elaborating and annually reviewing the criteria for accessing concessional insurance; (4) coordinating and facilitating the provision of complementary TA required for the successful preparation of applications for concessional insurance; and (5) developing and submitting a CIW's annual work plan to the SC for endorsement.

Investment Review Board

An Investment Review Board (IRB) could be established to review investment proposals and provide technical recommendations to the SC on whether to approve the financial package. In addition, the IRB could contribute to the review of a CIW with the World Bank after the pilot phase.

The Program Implementing Unit could develop a long list of experts, as described under subsection 5.2.1, who could sit on the IRB. The SC could be given the opportunity to review the roster on an annual basis and could suggest names to be added or removed.

The IRB's review could focus on two key areas: (1) the risk information/catastrophe risk model, and (2) the risk transfer product. Details of the technical analyses the IRB could undertake are presented in subsection 5.2.1. A ToR outlining the scope and limitations of these analyses could be developed by the Program Implementing Unit.

Premium subsidy application and selection process

The process shown in Table 6 is an example of the steps that could be established to apply and receive grant finance for premium subsidies under a joint decision-making model. This paper does not argue that the process ultimately established must be like it. Rather, the eventual process will have to be discussed and agreed on with the key stakeholders of the TF, and will depend in part on the chosen decision-making model.

²⁵ The World Bank [2016a] publication "Governance Models: An Overview and Proposed Approach" describes in detail the four governance models and the rationale for their adoption by the World Bank.

Table 6: Concessional Insurance Application and Selection Process

Step	Description								
1	<p>Initial CMU approval and application submission</p> <p>Countries / task teams submit applications to the Program Implementing Unit, including documentation verifying countries' eligibility based on criteria 1–5 [table ES.1].</p> <p>There are two types of applications, requiring the following types of documentation:</p> <table border="1"> <thead> <tr> <th>Type A projects:</th> <th>Type B projects:</th> </tr> </thead> <tbody> <tr> <td>Stand-alone insurance purchase</td> <td>Integration of insurance premium component into World Bank operation under preparation</td> </tr> <tr> <td>Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU</td> <td>Project Concept Note (PCN), developed with CMUs approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met</td> </tr> <tr> <td colspan="2">Documentation that country meets eligibility criteria 1–5</td> </tr> </tbody> </table> <p>As part of the application, the countries / task teams will develop supplemental document which will detail:</p> <ul style="list-style-type: none"> ▪ The financial structure of the insurance product, including how it sits within the DRF strategy ▪ Indicative numbers on results / number of beneficiaries reached ▪ Indicative approach to engage with risk carriers ▪ Methodology to coordination with InsuResilience partners 	Type A projects:	Type B projects:	Stand-alone insurance purchase	Integration of insurance premium component into World Bank operation under preparation	Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU	Project Concept Note (PCN), developed with CMUs approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met	Documentation that country meets eligibility criteria 1–5	
Type A projects:	Type B projects:								
Stand-alone insurance purchase	Integration of insurance premium component into World Bank operation under preparation								
Letter of request for technical and financial assistance to purchase insurance policies, which is approved by CMU	Project Concept Note (PCN), developed with CMUs approval, for a World Bank lending operation or for an additional finance which demonstrates eligibility criteria 1–5 are met								
Documentation that country meets eligibility criteria 1–5									
2	<p>Review and approval of funding application</p> <p>The SC evaluates countries' applications against eligibility criteria 1–6, accounting for:</p> <ul style="list-style-type: none"> ▪ Availability of funds in the Multi-Donor Trust Fund (MDTF) to finance premium subsidies; ▪ Availability of resources (in the MDTF or elsewhere) to provide technical assistance for the development of a financial package, including insurance <p>If the above conditions are met, the SC approves the funding request. The World Bank team begin preparing Project Appraisal Document (PAD), with funds committed from the MDTF, in accordance with World Bank operational procedures.</p>								
3	<p>Preparation of financial package</p> <p><i>Type A (stand-alone) projects:</i> The PAD must be approved by the Country Director / Regional Vice President. After approval, the recipient country develops the financial package with World Bank technical assistance as required. The financial package is submitted to the IRB.</p> <p><i>Type B (World Bank operations under preparation) projects:</i> Once the project becomes effective [e.g., six months to two years from PCN approval], the World Bank team will support the recipient country in preparing the financial package, including design of the insurance product. The proposal for financial package is then shared with the IRB.</p>								
4	<p>Technical review of financial package</p> <p>IRB reviews the financial package based on its ToR as a quality assurer. The IRB provide their professional judgment on the financial package. The IRB prepares a summary report for the SC. In the event where improvements can be made to the insurance product, the IRB prepares a response to the client with recommended actions to improve product quality. The IRB will prepare a summary report to the SC on the technical review and product design for their endorsement on a no objection basis.</p>								
5	<p>SC endorse summary report on a no objection basis</p>								
6	<p>Placement process</p> <p>The recipient country decides on how the product will be placed on the market, depending on [1] the insurance capacity in country; [2] the availability of risk pools in its region; and [3] its preferences for how the insurance product and premium payment are structured. Competitive and transparent placement should prevail.</p>								
7	<p>Final CMU approval</p> <p>The financial package including placement process is presented to CMU through a decision meeting chaired by the country director (or delegated person). The CMU provides input and a decision on whether to bring the product to market.</p>								

Step	Description
8	Insurance transaction is executed
9	Monitoring and evaluation (M&E) <p>The M&E for approved premium subsidies should cover placement of the recipient country's insurance product and the recipient country's subsequent experience with the product. In addition, M&E should assess the meeting of results indicators of a CIW's results framework. Where appropriate, task teams should seek to integrate CIW results framework indicators into the results frameworks of lending operations. This should enable a CIW to systematically gather data on the impact of activities, without duplicating ongoing data collection for monitoring and evaluations, and hence should minimize the reporting burden on government officials.</p> <p>Learning should be a key component of the program, given the rapid pace of this agenda. As lessons are learned from ongoing monitoring and evaluations conducted throughout individual projects, implementation modalities should be shaped and refined.</p> <p>It is recommended that with each successful applicant, \$200,000-\$400,000 be mobilized to carry out impact evaluations of payouts. The evidence base for sovereign risk transfer is small, but growing. A CIW has a unique opportunity to gather further evidence on how its interventions affect poverty and shared prosperity outcomes. Collecting this evidence, however, requires resources. Thus a CIW should seek to commit/mobilize funds from other sources to carry out impact evaluations in the event that payouts are made.</p>

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Annex 1: Takeaways from a Literature Review on the Role of Premium Subsidies in Achieving Policy Objectives

Further general considerations

A CIW's design should ensure that **targeting, screening, distribution, and monitoring of subsidies can be implemented effectively**. If a CIW will not cover the administrative costs associated with providing subsidies, these functions must be provided by other components of the trust fund or by other trust funds. For example, administrative hurdles to access a CIW, absent a mechanism to support prospective applicants through the application process, could result in limited take-up of the subsidies.

The screening effects of a CIW's application system should be considered during the design phase. The eligibility requirements and application process for concessional sovereign insurance will impact what types of countries successfully access subsidies. This screening effect may be desirable if it selects for the "right" dimensions, but these dimensions should be carefully considered in light of policy objectives. Complicated application systems can have outside impacts on the probability of taking up a subsidy; see for example Bhargava and Manoli (2015). In developing countries, it is often the case that a couple of key decision makers need to champion the application process, and providing simple, clear information to these decision makers will increase the likelihood that they advocate taking up the insurance.

Key reasons for failures of public subsidy programs identified in literature review

Public subsidy programs often fail to achieve policy objectives due to one or more of the following key reasons:

- **Public subsidy programs can cause crowd-out.** Inter-governmental subsidies often aim to increase a government's spending in a certain area. But achieving this outcome is difficult because budgets are fungible (with time), and income effects for government goods and services are typically small (Hines and Thaler 1995; Knight 2002). In the United States, for example, the federal government subsidizes school districts that serve low-income children to boost their educational expenditures. However, it was found that while an increase in a federal subsidy for education initially increases state and local education expenditure, poor school districts' educational spending has reverted three years later to what it would have been without the federal subsidy (Gordon 2004). Crowd-out of spending has been documented in various programs in which national governments subsidize subnational governments (Knight 2002; Baicker 2005).
- **Subsidy programs can alter incentives in ways that undermine the achievement of policy objectives.** For insurance premium subsidies, adverse selection and

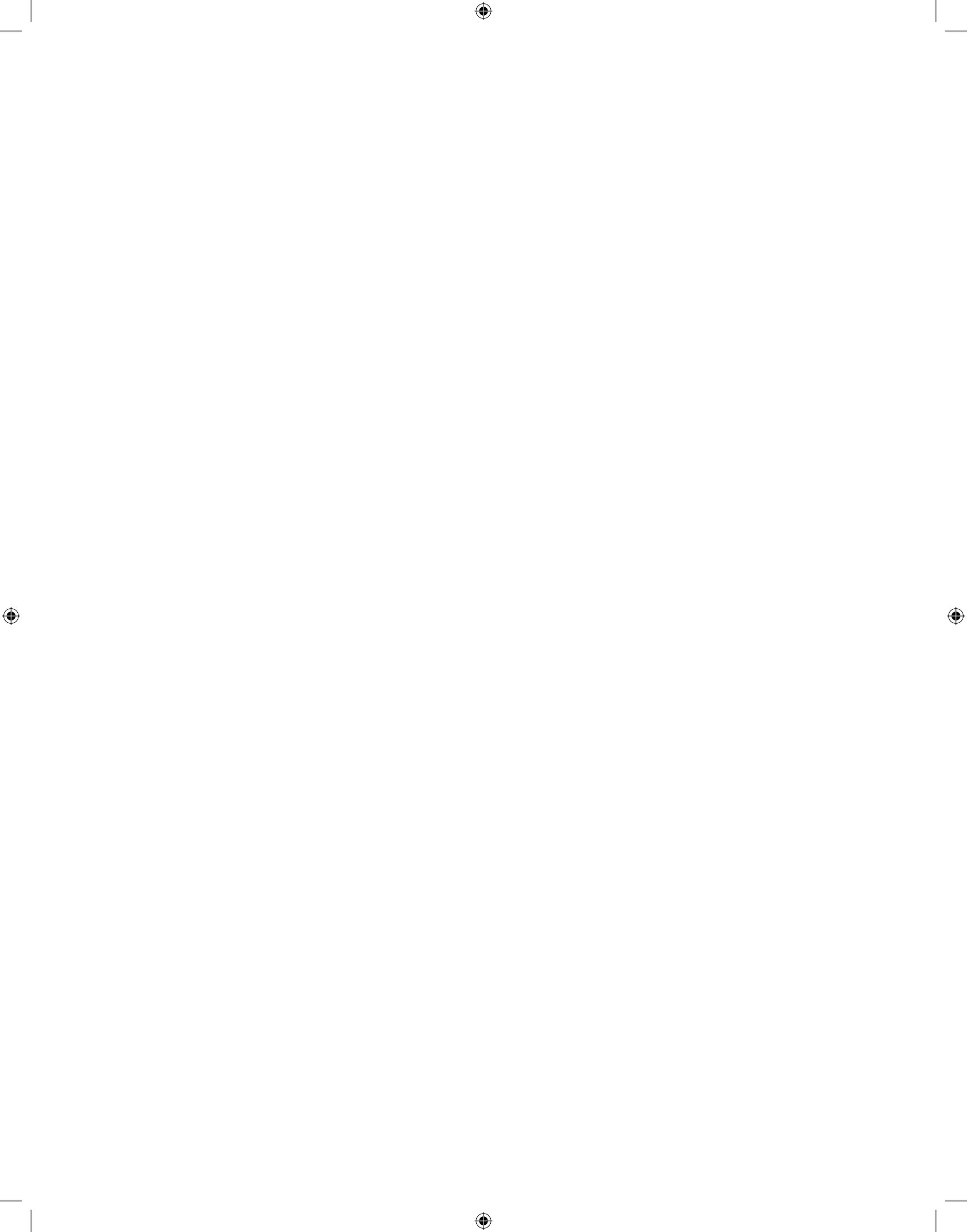
moral hazard are common problems. Subsidized insurance programs often result in some degree of adverse selection and moral hazard.²⁶ The extent to which these are problematic, though, varies greatly with the insurance subsidy program's design. For example, adverse selection has been especially problematic in agricultural insurance programs that provide higher subsidies for higher risk levels.²⁷

- **Private sector engagement in public subsidy programs is often critical to their success, but if it is not carefully conceived and overseen, private providers may capture some of the benefits intended for recipients, and private sector competition may be reduced.** Engaging the private sector in providing or distributing a subsidized good or service can increase efficiency and reduce crowd-out of private supply, among other benefits. Common risks with private sector engagement, however, include capture of subsidies by private providers and reduced competition among providers (Tougher et al. 2014). These risks are greater when subsidy programs lack access to information about providers' costs. In the U.S. crop insurance program, for example, all insurers are reimbursed for selling and servicing policies at 24.5 percent of unsubsidized premiums,²⁸ which does not reflect variation in administrative and operating costs across different regions. This one-size-fits-all approach leads to cost inflation and reduced competition (Skees 2001).
- **Lack of fiscal sustainability can jeopardize subsidy programs' ability to achieve policy objectives.** Several factors commonly contribute to undermining a subsidy program's fiscal sustainability, including leakage to non-target groups, which often arises because program administrators lack sufficient information or necessary mechanisms to distinguish between target and nontarget groups (IMF 2008; El-Katiri and Fattouh 2015). Relatedly, effective targeting, monitoring, and evaluation require substantial administrative capacity. Administrative costs can be significant and need to be considered when assessing a program's fiscal sustainability (Lagomarsino et al. 2012).
- **Political influences on the design and implementation of subsidy programs can result in poor performance.** Subsidies can be extremely political, and political influence often distorts the design and targeting of subsidies, leading to perverse effects and making it difficult to reform poorly performing programs (Skees 2001; Arze del Granado, Coady, and Gillingham 2012; El-Katiri and Fattouh 2015). For example, many governments in the Middle East defend fuel subsidies as promoting social safety and energy access, even though they mostly benefit energy-intensive industries and medium- and upper-income households (El-Katiri and Fattouh 2015). Even when subsidy programs are initially technically and financially sound, politically motivated changes often erode their effectiveness over time.

26 Universal mandates are sometimes seen as a way to prevent adverse selection, although in practice, they are very difficult to put in place and to sustain. Furthermore, even when governments mandate insurance purchase, mandates are not always effectively enforced (Kriesel and Landry 2004).

27 India's National Agricultural Insurance Scheme and the U.S. Crop Insurance Program are examples of such programs. Note that the potential for adverse selection and moral hazard in insurance subsidy programs is well-covered in a recent report by EOD (2017).

28 The government also provides servicing insurers with a risk-sharing arrangement that limits the loss for companies by state, which reduces their costs of capital (Skees 2001). It is worth mentioning that government coverage of private insurers' administrative and operating expenses and risk sharing of catastrophic risk is not bad per se, but can be difficult to implement in ways that do not provide perverse incentives and that are scalable.





Annex 2: Case Study of Uganda's Scalable Safety Net

Background: Uganda's rural population is predominantly smallholder farmers and pastoralists who are subject to several production constraints and have limited capacity to cope with recurrent shocks. Vulnerable households in Uganda face considerable climatic risks, primarily related to drought.

World Bank engagement: The \$130 million Northern Uganda Social Action Fund (NUSAF) III is a World Bank lending operation seeking to build the resilience of poor households in Uganda through income support. It has a \$12 million disaster risk finance component that provides additional post-disaster support to vulnerable households through an automatic expansion of the NUSAF III labor-intensive public works (LIPW) activities. The component seeks to develop and test a system for rapidly scaling up LIPW in response to shocks.

The DRF component was initially piloted in Karamoja, where households are acutely vulnerable to drought. The World Bank Group team worked closely with the government of Uganda to [1] streamline data collection and analysis to help officials better understand drought conditions in Karamoja and develop an appropriate index to monitor drought; [2] establish clear triggering rules for disbursement of funds from the DRF mechanism; and [3] establish a \$10 million contingent line of credit (using project resources) that can be drawn down to finance the expansion of LIPW. Once the conditions for a scale-up of the LIPW are met, the government of Uganda sends a letter of request to the World Bank to withdraw funds from this contingent line of credit. The amount of resources requested is in accordance with the DRF component triggering rules, which are detailed in a DRF handbook approved by the World Bank on an annual basis. The funds are then disbursed through scaling up of LIPW activities, another component of the project, and the government must monitor the disbursements and report back to the World Bank through the standard monitoring and reporting procedures applicable for investment projects.

The rules for when to trigger the DRF component are a combination of "hard" triggers, which include an index derived from satellite data, and "soft" triggers, the results of the Integrated Food Security Phase Classification (IPC) Food Security Classification report for the Karamoja region, done in August/September each year. If the satellite index falls below a set threshold, or the IPC report says there is a food security crisis in Karamoja, funds are drawn down from this line of credit and delivered through NUSAF. One key advantage of this approach from a monitoring point of view is that the M&E system established for the broader NUSAF project is used to track these resources from the government to the household.

Impact: The 2016 El Niño caused widespread drought in the Karamoja region. The index developed under the project captured the drought and triggered a scale-up of LIPW. As a result, \$4.1 million was disbursed to finance disaster assistance to approximately 30,000 households, or 150,000 people, in Karamoja. These numbers were in addition to the core beneficiaries of approximately 5,000 households, or 25,000 people, who were already receiving assistance. Over the life of the operation, the DRF component of NUSAF III is estimated to finance the cost of scaling up LIPW to a total of 80,000 additional households [400,000 people].

Source: Maher and Tadesse [2017]



Annex 3: Assumptions for Comparison of Financing Sources for Disaster Response for IDA countries

Category	Parameter	Value	Comment
General	Interest rate on sovereign debt	12%	http://www.finance.go.ug/download/Publications/DSB-DEC-2016-FINAL.pdf https://www.bou.or.ug/bou/bou-downloads/research/BouWorkingPapers/2013/All/Interest-rate-pass-through-in-Uganda.pdf
	Discount factor	12%	http://data.imf.org/regular.aspx?key=60998111
	Attachment and exhaustion points for insurance	0 and 6,000	This depends on the set of data we have
Contingent IDA loan	Interest rate	1.45%	
	Arrangement fee ratio	0%	
	Treatment of contingent loans	1	
	Maturity	42	
	Grace	8	
Insurance	Multiple	1.4	
	Ceding	1	
Insurance with loan	Yes/no buttons	No	
	Principal percentage of insurance cost if yes	100%	
	Interest	1.45%	
	Fixed fee	0%	
	Treatment of contingent loans	1	
	Maturity	42	
	Grace	8	
Donors' contribution	Yes/no button	No	
	Percentage if yes	80%	

The method behind the results shown in figure 1 and figure 2 relied on the assumptions above to compute the costs of contingent credit and insurance premiums based on the paper ‘Evaluating Sovereign Disaster Risk Financing Strategies: A Framework’ (Clarke et alia 2016). For insurance, different scenarios were considered, namely the possibility of paying the premium using IDA credit, using donations to subsidize a portion of the premium, and combining loans and subsidies.

Regarding figure 1, costs of instrument are marginal, and layers defined by attachment and exhaustion points were considered. The difference between exhaustion and attachment points for a single layer should ideally be unitary, but for implementation purposes, 10 was the chosen value for the step. Thus, attachment point varied from 0 to 6,000 by steps of 10. For each attachment point, the average loss for

the corresponding layer was computed from 10,000 years of simulated losses. Instruments’ costs were then calculated using formulae adapted from the above-mentioned paper. The major change from the cited document is the amortization of drawn loans’ opportunity cost using the discount factor, the maturity, and the grace periods. This change influenced the costs of contingent credit and insurance when financed, partially or fully, by a loan. Finally, the value of the cost was expressed in terms of a percentage of the step.

There are two important points that the reader should bear in mind. First, insurance premiums were proxied as a multiple of the average annual loss. Second, for the IDA credit, any drawn amount would decrease the country’s IDA envelope by a proportional amount. The multiplicative coefficient is called “treatment of concessionary loans ratios” and is equal to 1 for World Bank IDA loans.





Annex 4: World Bank Investment Project Financing (IPF): Preparation Phase

This annex provides an overview of the preparation stage of the most common type of World Bank Lending Instrument—Investment Project Financing. The processing of IPF operations is governed by the Bank Policy on IPF and the Bank Directive on IPF.

World Bank lending aims to promote poverty reduction and sustainable development of member countries, which are defined in the International Bank for Reconstruction and Development Articles of Agreement (2012). IPF supports projects with defined development objectives, activities, and results. The World Bank disburses IPF loans against specific eligible expenditures described in the Loan Legal Agreement signed by both the Bank and the borrower.

During the IPF project preparation phase, the borrower prepares the project for which an IPF loan is sought, along with related project documents; and the World Bank appraises the proposed project in accordance with its policies. To finance a project's preparation, the borrower can request a Preparation Advance (PA), which is an advance from the IPF loan for the proposed project. The World Bank Task Team (TT) prepares PA documentation upon the borrower's request, and World Bank Management decides whether to provide a PA and the PA amount.

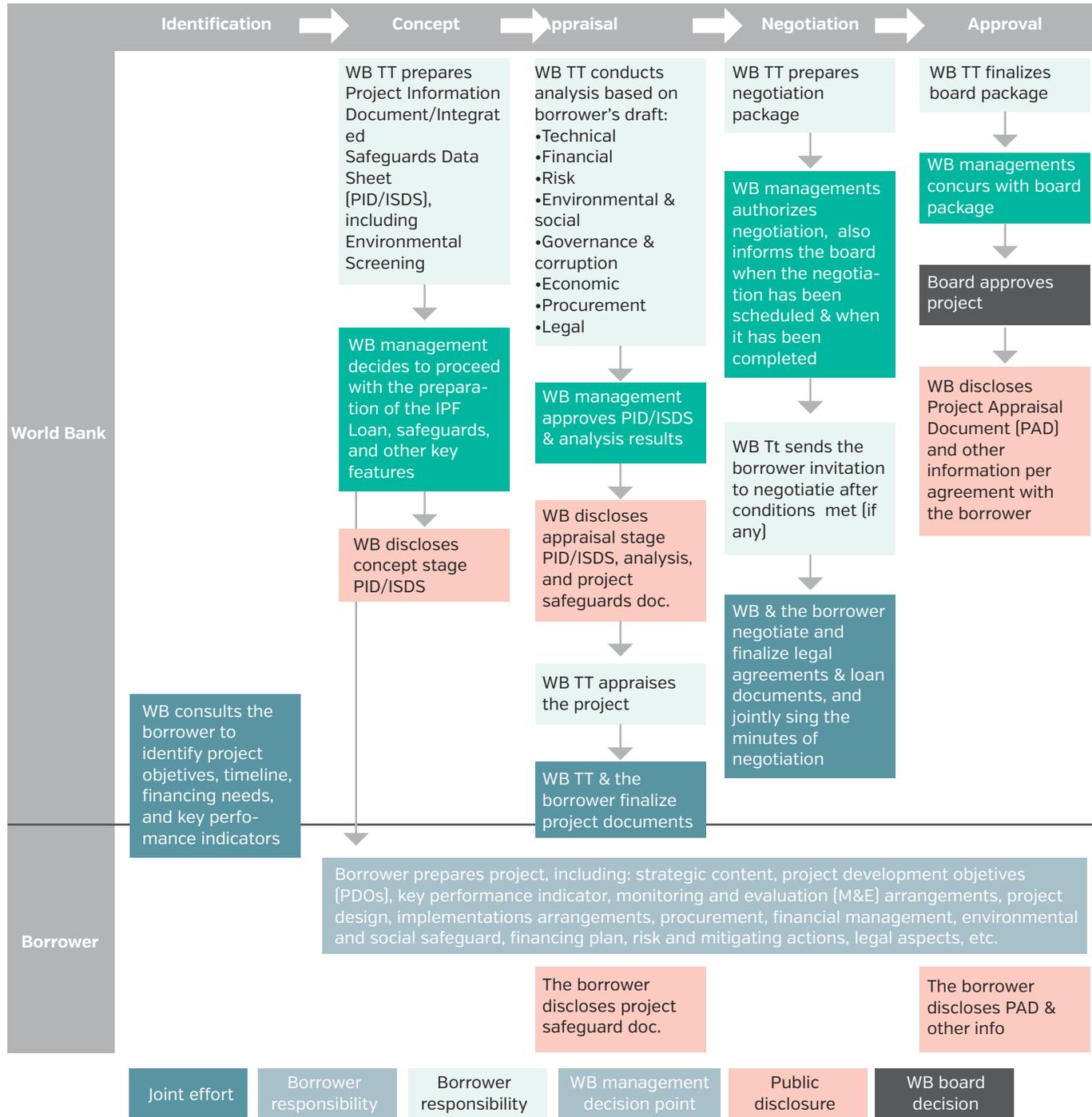
There are five main steps in this phase: identification, concept, appraisal, negotiation, and approval. The flowchart below shows the processing of a regular project.

Some exceptions are made for projects that may have specific policy requirements or require special considerations, as provided by the Bank Policy on IPF; see details below. For more on World Bank policies and procedures, please visit the World Bank Operations Manual Website.

Projects in Situations of Urgent Need of Assistance or Capacity Constraints (from Policy on IPF, paragraph 12, effective August 18, 2017)

In cases where the Borrower/beneficiary or, as appropriate, the member country is deemed by the Bank to: (i) be in urgent need of assistance because of a natural or man-made disaster or conflict; or (ii) experience capacity constraints because of fragility or specific vulnerabilities (including for small states); the Bank may provide support through Investment Project Financing under normal Investment Project Financing policy requirements with the following exceptions:

- a. *The fiduciary and environmental and social requirements set out in OP/BP 4.01, OP/BP 4.10, OP/BP 4.11, OP/BP 4.12, the IPF Directive, and the Procurement Policy/Directive, that are applicable during the Project preparation phase may be deferred to the Project implementation phase. The environmental and social requirements exception for Category A Projects under OP 4.01 is only applicable to cases referred to in sub-paragraph 12(i) above of this Policy.*
- b. *Such Projects are subject to special limits on the use of (i) PAs (see paragraphs 17-18 of this Policy) and, (ii) in the case of Projects supported by a Bank Loan, retroactive financing.*
- c. *When the beneficiary's capacity to implement the needed activities is insufficient, the Bank may, at the request of the beneficiary, agree to the following alternative legal and operational Project implementation arrangements: (i) the Bank may enter into arrangements with relevant international agencies, including the United Nations, and national agencies, private entities, or other third parties; and (ii) where no viable implementation alternatives exist, the Bank may execute start-up*



activities financed under a grant from the Project Preparation Facility (see paragraphs 17-18 of this Policy) or a trust fund, following applicable internal Bank procurement rules.

- d. Alternative implementation arrangements referred to under subparagraph (c) above are limited to the time necessary to establish or restore the Borrower's or the Implementing Entity's capacity and, in all cases, are adopted in Projects that

include capacity-building measures to enable a timely transfer of implementation responsibilities to the Borrower or the Implementing Entity. Proposals for Bank-executed start-up activities are limited to activities which involve the procurement of small contracts for goods and works, and the provision of technical assistance necessary to enable the Borrower or the Implementing Entity to undertake the execution of subsequent Project activities.

Disaster prevention and preparedness and capacity-building activities (from Policy on IPF, paragraph 13, effective August 18, 2017)

Disaster prevention and preparedness and capacity-building activities may be supported by a stand-alone Project with a contingent financing feature, or may be embedded in a regular Project

through a contingent emergency response component that, once triggered, is subject to the exceptional policy requirements set out in paragraph 12 above. A Project contingent emergency response component may be used to finance a catastrophe deferred drawdown option under IDA Development Policy Financing. Disbursements of funds allocated to this component are based on a pre-specified Development Policy Financing trigger or triggers.



Annex 5: Technical Analysis of the Insurance Package

CAT risk model

The work of the catastrophe risk modeling expert(s) will be focused on analyzing the CAT risk model that has been developed for the insurance product. The analysis will be written up in a catastrophe risk modeling report, which will include a brief summary of the model (how it operates, and which aspects of the hazard and loss the model enables insurance to be written for). It will address the following questions:

- Is the modeling methodology a reasonable and appropriate approach to modeling the impact of this risk in this context?
- How robustly has the model been validated by the applicant, and how has this validation been documented? Are the validation and documentation of the validation fit for purpose? Are there sufficient relevant data to adequately validate the model? How have any data gaps been overcome?
- To what extent do the simulated outputs of the model match countries' historical losses?
- How stable is the model? What level of basis risk is there? How accurate is it?

Financial analysis

The financial analysis in the report will provide a view on all questions addressed in the catastrophe risk modeling report as well as the following questions:

- Is insurance a cost-effective risk financing option compared to plausible alternatives available to the country?

- If insurance is not the most cost-effective option, is there an alternative rationale (e.g., tied to contingency planning or other requirements that are difficult to value) for using insurance compared to other alternatives?
- If insurance is an appropriate option for the country, are concessional insurance premiums the most cost-effective use of donor funds in this context?
- Is the approach taken to convert loss data into an insurance policy reasonable?
- Is the level of basis risk reasonable?
- Is the price reasonable, as compared to other potential instruments that could offer the same coverage and to similar insurance products offered by other providers?
- What potential risks do any identified limitations create for (1) countries that are purchasing insurance cover, and (2) the insurance provider in ensuring that it provides valid insurance cover?
- How does the recipient country propose to manage identified risks? Are the approaches proposed reasonable and likely to be effective?
- Does the methodology for calculating premiums fairly represent the risk insured and the cost of reinsurance?

The report should include a summary of the proposed product, with recommendations for strengthening it.



Annex 6: World Bank Trust Fund Governance Models

Governance model	Pre-TF establishment	Post-TF establishment	TF management and administration	World Bank progress reporting	Key advantages	Key disadvantages
Model A	DPs and Bank agree on TF objectives and other parameters or on list of activities that TF will implement; these are reflected in the Administration Agreement [AA].	DPs are not involved in guiding or making decisions on TF implementation.	Mainstreamed within World Bank.	As agreed in the AA. Provides standard Bank financial and progress reporting.	Faster decision making and more efficient management.	Inability to adapt in case of changing context. Risk of misalignment with DPs' priorities.
Model B.1	Bank and DPs agree to TF development objectives and types of activities that the TF will implement; these are reflected in AA.	Partnership Council [PC] has an advisory role on strategic direction and priorities of TF; meets 1-2 times per year, and meeting minutes recorded.	Commensurate with governance arrangements.	Provides periodic reporting to PC as agreed in the AA. Provides standard Bank financial and progress reporting.	Ability for key stakeholders to provide guidance on TF direction and reform, balanced with ability for TF management to make timely decisions.	Compared to Model A, possibility of slower decision making. Risk of delays in activity implementation with target recipients.
Model B.2	Bank and DPs agree to TF development objectives and types of activities that the TF will implement; these are reflected in the AA.	PC has an endorsing role in strategic priorities and annual work plans and budgets of TF; meets 1-2 times per year; decisions made by consensus or as per arrangements.	Commensurate with governance arrangements.	Prepares annual work plans and budgets for endorsement. Provides periodic reporting to PC as agreed in AA. Provides standard Bank financial and progress reporting.	Key stakeholders determine priorities and work program of the TF, ensuring alignment with DP's own priorities.	Compared to Model B.1, slower decision making and greater risk of delays in activity implementation. Risk of hold-up or political influence on activities.

Governance model	Pre-TF establishment	Post-TF establishment	TF management and administration	World Bank progress reporting	Key advantages	Key disadvantages
Joint World Bank-DP Model	Bank and DPs agree to TF development objectives and types of activities that the TF will implement; these are reflected in the AA.	A governance body with DP, World Bank, and often other stakeholder participation makes decisions for all individual activities and determines strategic direction; meets 1-2 times per year; decisions made by consensus or as per arrangements.	Commensurate with governance arrangements.	As agreed in AA, often prepares annual work plans and budgets based on strategic guidance. As agreed in AA, provides periodic reporting to governance body. Provides standard Bank financial and progress reporting.	In politically sensitive, risky, or innovative contexts, facilitates building of consensus and sharing of knowledge with downstream funding activities.	More time-consuming and costly to manage than all other governance model options. Requires significant commitment of expertise by DPs and stakeholders that can be difficult to sustain. Creates risks of delay in implementation due to divergent views. Greater risk of hold-up or political influence on activities.

The choice of TF governance model does not affect the World Bank's standard financial and progress reporting nor the provision of a set of pre-defined program management and administration (PM&A) functions. The governance arrangements provide for governance structure

customization outside of these basic functions provided by the World Bank. For both the B.2 and Joint World Bank-DP Models, specific forms of reporting may be provided to the SC, and PM&A activities will be commensurate with the complexity of a CIW's activities.





Annex 7: World Bank Trust Fund Governance Models: Examples

TF example	Governance model	Programmatic vs. freestanding ^a	TF purpose	Governance arrangements	World Bank progress reporting
Multi-donor Trust Fund (MDTF) to Support Roma Education Fund (REF)	Model A	Freestanding	Supports the operation of the REF, an NGO established to close educational achievement gaps between Roma and non-Roma, primarily in Eastern European countries.	The REF's annual work plan and budget are approved by its Board of Governors. They are shared with donors and the Bank each year. Donors and the Bank do not approve the work plan and budget but can request clarification.	The Bank provides its standard financial and progress reporting. The Bank does not provide any reporting on REF's use of funds. REF is responsible to provide reporting as per its agreement with the World Bank.
Umbrella Facility for Gender Equality (UGFE)	Model B.1	Programmatic	Supports the World Bank Group's strategy to strengthen awareness, knowledge, and capacity for gender-informed policy making. World Bank Group's strategy and results framework articulated and endorsed within the World Bank Group.	The PC for the UGFE includes all of its donors. It meets twice annually. It provides strategic guidance on the implementation of the UGFE. The World Bank Group's Gender Leadership Council, comprising manager-level representatives from all of the Bank's regions and Global Practices, is the UGFE's main decision-making body and makes individual funding decisions.	Bank provides annual results to report to donors. Bank provides its standard financial and progress reporting.

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TF example	Governance model	Programmatic vs. freestanding ^a	TF purpose	Governance arrangements	World Bank progress reporting
Global Index Insurance Facility (GIIF)	Model B.2	Programmatic	GIIF TFs support advisory services related to index-based insurance and grants to governments and regulatory agencies to design and implement policy, legal, and regulatory frameworks for index-based and catastrophe insurance markets.	<p>GIIF has 3 tiers of governance:</p> <p>The GIIF Donors Committee (DC) includes all donors and two representatives each from IFC and IBRD. It is chaired by the IFC director. The DC [1] advises on the overall direction of the GIIF Program and reviews its progress; [2] approves annual work programs; and [3] approves significant changes to GIIF activities.</p> <p>The GIIF Executive Committee (EC) is below the DC. It includes members from IFC and IBRD, and it approves biannual work programs/budgets and activity reports as well as large and complex projects, including premium support.</p> <p>The Technical Committee (TC) sets priorities and provides technical guidance, including approving country action plans. It prepares large and complex projects for EC review/approval.</p>	<p>The EC provides the DC with annual reports on the work programs (comprising individual country operations, portfolio performance, and exposures).</p> <p>The Bank provides its standard financial and progress reporting.</p>
MDTF for the Global Partnership for Social Accountability (GPSA)	Joint World Bank-DP Model	Programmatic	Supports the GPSA through [1] providing grants to CSOs; [2] supporting knowledge generation and exchange activities through a platform; and [3] supporting a Secretariat to implement the GPSA.	<p>The GPSA Steering Committee includes a World Bank member and equal representation from donors, participating developing country governments, and civil society. It provides strategic direction for GPSA and approves all CSO applications for funding.</p> <p>GPSA relies on a multi-stage application process, reporting, and transparency requirements to maintain legitimacy.</p>	<p>The GPSA Secretariat prepares annual call for proposals for the SC's approval, as well as annual reports. The Secretariat also provides other forms of reporting as required by the SC.</p> <p>The Bank provides its standard financial and progress reporting.</p>

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TF example	Governance model	Programmatic vs. freestanding ^a	TF purpose	Governance arrangements	World Bank progress reporting
Partnership for Market Readiness (PMR)	Joint World Bank-DP Model	Programmatic	Provides grant financing to countries to prepare markets for climate change mitigation policies; provides assistance to pilot or implement new market-based instruments for climate change mitigation; supports knowledge generation and sharing activities.	The PMR's Partnership Assembly includes all donors who have contributed financially to the PMR and all countries that have submitted an Expression of Interest that has been accepted by the Partnership Assembly. The Assembly provides strategic guidance, confirms participation of countries, allocates resources (including approving budgets), and monitors operations, among other responsibilities.	The PMR's Secretariat proposes budgets and issues progress reports on the individual activities of the PMR and on the PMR as a whole.

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