



G7 Finance Ministers and Central Bank Governors' Meeting

High-Level Framework for Public-Private Insurance Programmes against Natural Hazards

G7 FINANCE TRACK

STRESA – MAY 23rd-25th 2024

High-Level Framework for Public-Private Insurance Programmes against Natural Hazards

Damages and losses from natural hazards, such as storms, floods, wildfires, and earthquakes, have increased substantially in recent decades due to the increase in their frequency and severity, worsened by the effects of climate change, as well as the growth in the value of assets and businesses exposed to these hazards.

Global financial markets – and particularly insurance markets – play a critical role in absorbing damages and losses from natural hazards. They provide a source of funding for recovery and reconstruction and contribute to diversify risks away from the real economy and local markets. However, due to increasing damages and losses from natural hazards, the capacity of private insurance markets to provide sufficient insurance coverage is being challenged.

In many countries, this has resulted in significant protection gaps for natural hazard risks (“protection gaps”)¹ in some cases exacerbated by the limited availability of quality data on such risks. These gaps result from a range of factors, including a lack of demand driven by limited risk awareness, lack of insurance options, and affordability issues.² Countries where damages and losses from natural hazards are largely uninsured could face severe hits to the public finances and, to the extent government expenditure is constrained, larger output losses. Addressing financial protection gaps is essential to support financial stability and policyholder protection and to ensure fair, safe, and stable insurance markets.³

Narrowing the protection gap requires a collaborative effort between multiple parties, including governments, insurance supervisors (including both market conduct regulators and prudential supervisors) and the insurance sector. The combination of their perspectives can lead to the development of comprehensive strategies that bolster the ability of economies to withstand and recover from these events. Multi-stakeholder collaboration could include several approaches to increase insurance coverage, such as improving risk awareness and financial literacy, investing in risk prevention and reduction, promoting the availability and uptake of private insurance by regulators and/or supervisors, as well as establishing public-private insurance programmes (PPIPs). This framework focuses on the latter. It is meant to provide guidance to governments that consider implementing a PPIP to address the protection gap. PPIPs can take several forms of cooperation between private insurers and governments,

¹ Financial protection gaps occur where those affected by disaster impacts have insufficient access to funding or resources to recover quickly from a disaster and rebuild, i.e., where disaster losses and damages cannot be easily absorbed and are not sufficiently covered by insurance and other financial instruments.

² In some countries, there is limited take-up of insurance coverage more generally which exacerbates the challenges of addressing protection gaps.

³ In this regard see also [OECD “High-level roundtable on financial protection gaps for disaster risks”](#) and [IAIS “A-call-to-action-the-role-of-insurance-supervisors-in-addressing-natural-catastrophe-protection-gaps”](#).

ranging from provision and sharing of data on natural hazards, joint efforts on preventive measures and catastrophe risk insurance programmes involving risk-sharing among private insurers and governments.

PPIPs can leverage the strengths of both the public and private sectors. Governments can provide de-risking and enable access to public sector data and information. On their part, supervisors can provide advice and regulatory oversight, while private insurers can contribute their expertise in underwriting, risk assessment, and claims management, as well as their risk-bearing capacity. Where private (re)insurance solutions are not available, sharing risks and costs through these partnerships could be an option. If well designed, PPIPs can address affordability issues or gaps in coverage for highly exposed policyholders and promote solidarity in responding to natural hazard risks across regions. Finally, they can promote the role of technology in fostering the availability of quality risk-related data.

This document sets out considerations to develop a High-Level Framework for Public-Private Insurance Programmes against Natural Hazards for countries, involving in particular policy makers and insurance regulators and supervisors who are considering the development of PPIPs. Such framework is structured as a step-by-step guide illustrating the different phases of development of a PPIP for disaster risk finance.⁴ The high-level framework has been developed by the G7 Finance Track, based on contributions from the IAIS and OECD that leverage existing work.^{5,6}

⁴ According to *OECD Recommendation on Building Financial Resilience to Disaster Risks*, “disaster risk reduction” is referred to as “actions aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development”.

⁵ For the IAIS, see notably the IAIS Report *A call to action: the role of insurance supervisors in addressing natural catastrophe protection gaps (2023)*.

⁶ For the OECD, see the *OECD Recommendation on Building Financial Resilience to Disaster Risks (2023)* and the *G20/OECD Methodological Framework on Disaster Risk Assessment and Risk Financing (2012)*, and OECD reports on *Enhancing Financial Protection Against Catastrophe Risks: The Role of Catastrophe Risk Insurance Programmes (2021)* and *Leveraging technology in insurance to enhance risk assessment and policyholder risk reduction (2023)*.

HIGH-LEVEL FRAMEWORK FOR PUBLIC-PRIVATE INSURANCE PROGRAMMES AGAINST NATURAL HAZARDS

STEP 1: ASSESSING PROTECTION GAPS

- 1.1 Assessing the overall country's exposure to natural hazards
- 1.2 Assessing financial vulnerabilities and their drivers

STEP 2: EXPLORING THE RANGE OF POSSIBLE ACTIONS TO ADDRESS PROTECTION GAPS, INCLUDING PPIPs

- 2.1 Improving risk awareness and financial literacy
- 2.2 Incentivising and investing in risk prevention and reduction
- 2.3 Supporting the availability of private insurance markets from a regulatory and supervisory level
- 2.4 Assessing the necessity and viability of PPIPs

STEP 3: DEVELOPING A PUBLIC-PRIVATE INSURANCE PROGRAMME

i. Objectives

- 3.1 Supporting broad availability and affordability of coverage
- 3.2 Leveraging available private insurance, reinsurance, and capital market capacity to assume natural hazard risks while safeguarding insurer solvency
- 3.3 Limiting public sector exposure to natural hazard risks
- 3.4 Encouraging risk reduction and adaptation throughout the whole programme

ii. Design features

- 3.5 Defining the scope of coverage
 - a) Including different types of hazards
 - b) Considering the needs of different policyholders
- 3.6 Configuring the role of government and types of coverage depending on the desired aim of the programme
- 3.7 Considering the programme's role in the private (re)insurance market
- 3.8 Establishing the desired level of compulsion
- 3.9 Adopting an approach to premium-setting

iii. Implementation needs

- 3.10 Ensuring effective coordination at all government levels
- 3.11 Designing an effective governance of the scheme
- 3.12 Building expertise within all involved partners
- 3.13 Fostering the use of technology
- 3.14 Ensuring the involvement of insurance supervisors

STEP 1: ASSESSING PROTECTION GAPS

1.1 Assessing the overall country's exposure to natural hazards

The first step to limit the damage from natural hazards consists in a thorough assessment of a country's overall exposure, and to what extent such hazards are currently at risk or already being worsened by the effects of climate change.

1.2 Assessing financial vulnerabilities⁷ and their drivers

Identifying responses to protection gaps requires an understanding of underlying risk drivers and resulting financial vulnerabilities. These include: (i) potential financial exposures of both private and public sector to damages and losses from natural hazards; (ii) the availability and take-up of insurance for natural hazards risks; (iii) the financial vulnerabilities that could emerge as a result of a gap between exposure to risk and acquired or affordable insurance coverage, including lower levels of creditworthiness for uninsured companies and (iv) the possible adverse impact from insurance protection gaps on public finances.⁸ This assessment should also aim to identify factors that limit either the availability or take-up of insurance (e.g., high exposure to damages and losses, challenges in risk quantification, low levels of financial literacy or risk awareness, expectation of government compensation or financial support, high costs of insurance). Governments, insurance supervisors, the insurance sector (and global reinsurance sector) as well as private enterprises, could collaborate to leverage expertise and information held by each party. For instance, insurance supervisors can contribute to this assessment, leveraging their understanding of insurance markets, and ability to collect relevant data from the insurance sector. Technological advancements can enhance the availability and quality of data and accuracy of risk assessments.

STEP 2: EXPLORING POSSIBLE ACTIONS TO ADDRESS PROTECTION GAPS, INCLUDING PPIPs

The second step is to review existing and potential actions to address protection gaps for natural hazards, considering the unique risk drivers and financial vulnerabilities within the jurisdiction as identified under step 1. In most cases, a combination of actions will be needed, including:

2.1 Improving risk awareness and financial literacy

Limited awareness among households and businesses of their exposure to damages and losses from natural hazards is a major impediment to the take-up of insurance. Moreover, the expectation of post-disaster financial assistance may also limit demand (causing a moral hazard problem). Thus,

⁷ According to OECD *Recommendation on Building Financial Resilience to Disaster Risks*, "Financial vulnerability" is "a vulnerability that results from a gap between the risk of damage and loss and the financial capacity to absorb those damages and losses".

⁸ Insured undertakings are more resilient and have a higher creditworthiness, which may facilitate their funding.

governments, insurance supervisors and the insurance sector should act in a collaborative manner to promote natural hazard risk awareness and financial literacy among households and companies. In this field, among others, governments should provide *ex ante* clarity on the scope of any compensation and financial assistance that may be available. Insurance supervisors should require insurers to provide clarity to policyholders through clear insurance policy terms and conditions (with particular regard to the scope of coverage for relevant natural hazard risks and relevant exclusions and the scope of the default coverage option), in line with IAIS Insurance Core Principle 19 (Conduct of Business).⁹

2.2 Incentivizing and investing in risk prevention and reduction

Ex ante measures aimed at promoting risk reduction and adaptation are pivotal to reduce the impacts of natural hazards in a sustainable way. Accordingly, governments, insurance supervisors and the insurance sector should support risk reduction and adaptation. Policy makers, regulators, and supervisors¹⁰ should consider the incentives (or disincentives) that measures to respond to natural hazard risks could create for investing in risk reduction and adaptation. This could be achieved for instance through promoting investment in quality infrastructure, preventing building in high-risk areas, ensuring robust building standards, and facilitating property-level mitigation measures to reduce the damages.

2.3 Fostering the availability and uptake of private insurance coverage through an enabling regulatory/supervisory environment

It is important to create an enabling environment that enhances the capacity of private insurance markets to ensure the availability of insurance coverage. Policy and supervisory measures should support the development of stable, efficient, and well-functioning domestic insurance markets, with access to international reinsurance and capital markets to diversify risks at a global level. Supervisors can also play a role in creating a regulatory environment that supports innovation and reduces regulatory uncertainty. In addition, supervisors and policy makers could also foster resilient and sustainable global markets through international cooperation and sharing of best practices.

2.4 Assessing the necessity and viability of PPIPs

Before new measures including PPIPs are implemented, it is essential to assess the effectiveness of existing measures against the potential implementation of a PPIP. This entails conducting thorough evaluations to gauge the impact and outcomes of existing measures, identifying areas of success and improvement. Such assessments can provide valuable insights into the effectiveness of established approaches, thereby facilitating informed decision-making on the adoption of any new measures.

⁹ See IAIS, [Draft Application Paper on climate risk market conduct issues in the insurance sector \(2023\)](#) for a more detailed discussion on the role of supervisors in support of market conduct objectives in natural catastrophe insurance products.

¹⁰ For the remainder of this note, the term “insurance supervisor” is meant to include both regulators and supervisors, see IAIS Glossary.

STEP 3: DEVELOPING A PUBLIC-PRIVATE INSURANCE PROGRAMME FOR TACKLING DISASTER RISKS

Once the necessity and viability of a PPIP have been determined, the development of comprehensive public-private insurance programmes against natural hazards requires a detailed consideration of its (i) **objectives**, (ii) **design features** and (iii) **implementation needs**. The objectives and optimal design of a PPIP will vary based on the specific circumstances of the jurisdiction, including the state of the insurance market, the nature and scale of exposures to natural hazard risks and the extent of financial vulnerabilities across populations and the economy. While there may be some trade-offs between the various objectives and design features, ultimately it is important that any PPIP promote broader insurance coverage, include the right incentive structures for risk prevention and reduction, and be sustainable for the private insurers involved while keeping the cost to the public finances at manageable levels.

i. Objectives

3.1 Supporting broad availability and affordability of coverage

Public-private insurance programmes for disaster risks generally seek to address financial vulnerabilities and achieve broad insurance coverage against damages and losses resulting from the hazards included within the scope of those programmes. A public-private insurance programme for disaster risks should be designed with the aim of ensuring that broad availability, affordability, and take-up of insurance are achieved. In some cases, some form of subsidisation may be provided to support this objective.

3.2 Leveraging available private insurance, reinsurance, and capital market capacity to assume natural hazard risks, while safeguarding insurer solvency

In designing PPIPs, governments should minimise disruption to private sector provision of insurance or provide inadvertent arbitrage opportunities. This can be accomplished in various ways, depending on the type of insurance offered. Where programme coverage provides an alternative to private market coverage, efforts could be made to ensure a level-playing field (at a minimum) or even a competitive advantage for private insurers. Leveraging private market capacity through limits on coverage amounts or eligibility should not hinder the availability of broad affordable coverage. While risk retention in insurance markets, both domestic and international, could be promoted, it is critical to ensure that the risks assumed by the (re)insurance sector through the programme can be sustainably managed and do not threaten insurer solvency. An insurance programme should be designed in a way that does not lead to an accumulation of risks, which must be properly managed.

3.3 Limiting public sector exposure to natural hazard risks

A public-private insurance programme will create public sector exposure to covered losses. Such exposure could be reduced by ensuring that the programme is financially sustainable and that it does not require frequent injections of government funds (while making sure that premiums are

sufficiently affordable to achieve broad coverage). This can be achieved by ensuring premium adequacy, minimising operational costs, and prudently optimising investment income and by appropriately sharing risks with private insurance markets, considering also the role of reinsurance and capital markets. At the same time, it is important to underline how broader insurance coverage reduces demand for post-disaster financial assistance and compensation, ultimately limiting public sector exposure to largely unknown implicit liabilities.

3.4 Encouraging risk reduction and adaptation throughout the whole programme

By bringing together the government, supervisors and industry, the programme can provide data and expertise for identifying effective risk reduction measures. Creating the right incentive structures for risk prevention and for avoiding moral hazard is important. Programmes could include incentives for risk reduction and adaptation by policyholders, for instance through premium discounts, and could potentially deliver funding for policyholder risk reduction (either before or after a loss is incurred). Risk reduction and adaptation should be supported by providing data and expertise for identifying effective risk reduction measures. Measures could be accompanied by public sector commitments to ensure adequate investment in risk reduction and adaptation.

ii. Design features

3.5 Defining the scope of coverage

Defining the scope of the programme in terms of eligible hazards and types of policyholders (households, businesses should involve a **consideration of the extent of protection gaps (existing and emerging) for different hazards and potential policyholders, as well as the capacity of private insurance markets to provide coverage.** It could also consider the potential to support solidarity across regions, which usually face different levels of exposure to different perils.

a) Including different types of hazards

A programme could include divergent design features, thereby supporting the availability of coverage for a single hazard or for many different hazards. A targeted approach, aimed at supporting the availability of coverage for the hazard (or hazards) facing the most significant protection gaps, would usually support objectives related to leveraging private market capacity and limiting public sector exposure.¹¹ A wider approach may help ensuring that protection gaps are reduced for all natural hazards.

b) Considering the needs of different policyholders

A programme could be established to support the availability of coverage for households, (small) businesses or both, and potentially also for public assets. In this case, it would be important to consider whether post-disaster government compensation or financial assistance would be normally

¹¹ However, a programme providing coverage for multiple hazards could benefit from diversification and still transfer risks assumed to the private market through reinsurance/retrocession or insurance-linked securities.

provided to (or demanded or required by) impacted businesses and/or households. A targeted approach aimed at supporting the availability of coverage for households would usually support objectives related to leveraging first private market capacity and limiting public sector exposure. Offering coverage to businesses as well as to households could ensure that broad coverage is available but could potentially limit private market supply in terms of the types of coverage provided.

3.6 Configuring the role of government and types of coverage depending on the desired aim of the programme

A programme could be based on (i) a publicly provided direct insurance for eligible policyholders and hazards (potentially distributed by private insurers) or (ii) a publicly provided reinsurance to insurers for eligible risks assumed. It could also be established as a co-insurance arrangement among private (direct) insurers or as a government backstop for a public insurer or private insurers a co-insurance pool or a public or private reinsurer, where the government backstop could be in the form of a (non-repayable) risk transfer or (repayable) liquidity support. The approach taken will depend on the desired role of the programme (and the government) relative to the private insurance market.

- a) **A public direct insurer would usually limit private market involvement** (although the public insurer could act as a residual or basic provider of insurance and could transfer risk to reinsurance or capital markets) and could lead to higher public sector exposure (depending on adequacy of premiums charged). At the same time, a public direct insurer would normally have a greater ability to support (and potentially incentivise, depending on the approach to premium-setting) policyholder risk reduction than a reinsurer, given its more direct access to policyholders (although insurance programmes that provide reinsurance can also support risk reduction, in coordination with direct insurers).
- b) **A public reinsurer would allow for greater private (direct) insurer participation** in the market, although it could impact the participation of private reinsurers. However, this could be mitigated by limiting the amount of risk that can be assumed by the public reinsurer and/or by designing the public reinsurer to act as a residual reinsurer.
- c) **A government backstop provided as (re-payable) liquidity support (instead of a guarantee) would limit public sector exposure** although, it should be carefully designed to ensure that repayment requirements do not lead to dramatic premium increases in the aftermath of a major event, as the entity responsible for repayments would likely pass on the costs to policyholders (in the likely context of increasing reinsurance costs).
- d) **A fee could also be charged** to industry participants for any government guarantee provided.

3.7 Considering the programme's role in the private (re)insurance market

Depending on the type of coverage provided, a programme could be established as the sole provider of coverage for eligible hazards and policyholders or as a provider of residual coverage

targeting only risks/policyholders that face difficulties in accessing private insurance or reinsurance market coverage. Such programme could also be established to provide comprehensive coverage (i.e., for an amount that approximates the value of the insured property) or basic coverage. The approach taken should consider the extent of protection gaps (existing and emerging) as well as the capacity of private (re)insurance markets to provide coverage for different risks. It should also consider the ability of the private (re)insurance market to: (i) implement risk-based pricing (which would allow for an identification of high-risk properties); (ii) provide supplemental coverage if the programme only provides basic coverage; and (iii) provide affordable and stable reinsurance coverage. A more targeted approach providing residual and/or basic coverage would usually support objectives related to leveraging private market capacity and limiting public sector exposure (although a residual programme would assume only exposure to high-risk policyholders and could therefore face frequent losses). A more targeted approach could face challenges in ensuring broad coverage and in addressing financial vulnerabilities if not properly calibrated, to ensure: (i) access to affordable coverage for all policyholders unable to secure coverage in the private insurance markets (in the case of a residual approach); or (ii) access to sufficient supplemental private (re)insurance market coverage (in the case of a basic coverage approach).

3.8 Establishing the desired level of compulsion

Achieving broad coverage for targeted hazards and policyholders may require some form of compulsory purchase or use of default options that encourage purchase. This will depend on the level of awareness among households and business of their risk exposure as well as on expectations to receive public compensation or financial assistance if impacted by a natural hazard. Investments in building risk awareness and limiting expectations of post-disaster public compensation could limit the need to impose compulsory purchase or default options. If policyholders are reluctant to acquire coverage for natural hazard risks, private insurance coverage and programme coverage could be included by default in standard property insurance coverage, where policy holders would need to choose to ‘opt out’ of coverage for natural hazards. If broad take-up is not achieved, consideration could be given to imposing mandatory purchase requirements for some or all households and businesses (potentially with limitations such as applying the requirement only to borrowers with a loan or a mortgage secured against their property).

3.9 Adopting an approach to premium-setting

A programme could take different approaches to incorporating risk exposure into premium-setting. The approach taken will depend on the (desired) role of the programme relative to the private insurance market, the importance placed on premiums as incentives for policyholder risk reduction, and the level of compulsion imposed on policyholders.

- a) Fully risk-based premium-setting will normally have a greater impact on incentivising policyholder investments in risk reduction and adaptation, although its effectiveness will depend on the actual

scope for risk reduction at the policyholder level (versus at the community level) and it could be more difficult to implement if compulsory purchase requirements are imposed (as some high-risk policyholders could then be forced to purchase insurance that they cannot afford).

- b) Flat pricing, based only, for example, on sum insured, would limit the incentives for risk reduction but would likely support affordability and broader take-up.
- c) An intermediate approach could be considered, with a common risk-based pricing for an entire region or community, which could promote fairness across regions (given differences of exposure) and affordability and prevent anti-selection (if coverage is voluntary). A variation of this approach could be considered where risk-based pricing is combined with a separate subsidy program to address affordability considerations.

iii. Implementation needs

3.10 Ensuring effective coordination at all government levels

The establishment and design of a public-private insurance programme for disaster risks requires a complex understanding of insurance, reinsurance and capital markets and has implications for insurance markets and public finances. Ministries or agencies with responsibility for civil protection and disaster risk reduction, ministries of finance and other national or sub-national actors responsible for financial sector policy and fiscal management, and insurance supervisors, may provide relevant expertise to inform decisions on the implementation of such programmes. As such, a high level of coordination is required.

3.11 Designing an effective governance of the scheme

The governance structure should clearly identify responsibilities and accountabilities for key design decisions, including the scope of hazards and risk/policyholders covered, the targeted relationship of the programme with the private (re)insurance market, the type of insurance provided, the level of compulsion imposed and the broad approach to premium-setting. Key design features should be regularly reviewed to ensure that the programme is achieving the desired objectives, taking into account developments in the capacity of private insurance and reinsurance markets, particularly where the programme is designed to address specific gaps in the availability of affordable insurance or to complement coverage provided by private (re)insurance markets.

3.12 Building expertise within all involved parties

It will be critical to build sufficient knowledge and expertise within ministries of finance and insurance supervisory authorities to understand the implications of programme design on financial and insurance markets, supervisory objectives and the public finances. Likewise, building up the expertise and capacities of those managing the programme is essential. Training and workshops can enhance the knowledge and skills of relevant personnel. These could cover topics such as emerging technologies, data analytics, risk management frameworks, and regulatory compliance. Additionally,

collaborative efforts with industry experts and academic institutions could provide valuable insights and resources to further strengthen expertise in navigating the evolving landscape of financial and insurance markets. Support from international organizations such as the OECD, IAIS, or World Bank – as well as regional development banks – could also be envisaged.

3.13 Fostering the use of technology

Insurers could increasingly leverage cutting-edge data provided by Internet of Things technologies alongside Artificial Intelligence and machine learning to enhance risk assessment, streamline underwriting and adjust their pricing models. Governments and supervisors should identify opportunities to leverage the use of technology by supporting the integration of innovative data sources for more effective risk management and mitigation. This includes ensuring data is available and transparent across different regions, thereby removing existing barriers and fostering the adoption of innovative tools for data processing, while taking into account privacy issues. Furthermore, governments could consider leveraging existing technologies in programme delivery (product design, distribution, claims settlement) to ensure the programme operates efficiently and provides coverage suitable to the needs of targeted policyholders. Indeed, the application of new technologies can support product innovation and distribution and achieve cost efficiencies that can improve affordability. This should be done consistently with the objectives set for the PPIPs and preserving insurance supply to the most exposed areas.

3.14 Ensuring the involvement of insurance supervisors

Supervisors can support the design and implementation of PPIPs, by lending their expertise or providing advice to the government, and once established, by exercising supervisory oversight, where relevant. Insurance supervisors could for instance advise on financial soundness implications of the level of risk assumed by private (re)insurers in the delivery of the programme – and potentially the risk assumed by a public (re)insurer. Supervisors can also advise on the applicability of insurance regulatory and supervisory requirements (prudential and market conduct) to PPIPs. Programmes that offer coverage that is a substitute for coverage provided by private (re)insurers should normally be required to comply with similar prudential and market conduct requirements in line with the IAIS Insurance Core Principles (ICPs).¹²

¹² The ICPs are the globally accepted framework for insurance supervision and apply to the supervision of all insurers, whether private or government-controlled insurers that compete with private enterprises, wherever their business is conducted.