



Climate Risk Insurance in Indonesia

Concept Paper

Acknowledgements

Through the years, the scope of work and breadth of partnerships of GIZ Regulatory Framework Promotion of Pro-poor Insurance Markets in Asia (RFPI Asia) has evolved and responded to the changing times. In its third and current phase, RFPI is privileged to go beyond its focus on inclusive insurance to include the ever-worsening impacts of climate and disaster risks in advocating for risk transfer and insurance solutions within broader sustainable development approaches and strategies. RFPI has always looked to the guidance and expertise of in-country partners to steer its course of actions.

Climate risk insurance is a relatively new topic that is increasingly promoted as a necessary ingredient for integrated disaster risk management by governments, businesses and individuals. Its novelty therefore calls for a clarification of the related themes, terms and concepts that would orient stakeholders on its relevance to other policy priorities and would highlight actionable entry points. This Climate Risk Insurance Concept Paper intends to both inform and inspire future actions.

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Key Messages

- Climate risk insurance (CRI) is **defined** as “*a risk transfer solution that aims to protect individuals, businesses and countries against the negative impacts of extreme weather events that are becoming more frequent and more severe due to climate change*”.
- Indonesia’s location in the Pacific Ring of Fire exposes the country to **frequent and ever-increasing climate-related shocks and disasters**, further exacerbated by disasters from 127 active volcanoes, earthquakes and tsunamis.
- From 2000 – 2016, the annual average economic impact of disasters was estimated at IDR22.8 trillion (USD1.4 billion) and was estimated to be at IDR30 trillion in 2017 and IDR 100 trillion in 2018. The average contingency fund from 2009-2019 has been around IDR3.9 trillion, leaving a **financing gap of IDR 18.9 trillion**.
- **Access to non-life insurance is generally very low** in Indonesia, especially when it comes to asset and production loss insurance for MSMEs and for the middle and low-income segments.
- **MSMEs and low-income groups are generally excluded from insurance** due to their low levels of insurance education, affordability constraints, lack of adequate products and distribution channels.
- There is a **need for an innovative supply** of climate risk insurance for broad population segments – private households and micro and small and medium enterprises, farmers and fisher folks, and for the government.
- The **envisaged impacts** climate risk insurance can generate are: i) reduced fiscal burden of government, ii) protecting the livelihood of poor households, and iii) improved resilience of MSMEs, farmers and fisher folks.
- Public and private stakeholders are **encouraged to develop a Road Map** for 2021-2023 to structure their engagement in three strategic entry points to foster a lasting supply of CRI:
 - Fostering knowledge about CRI (to all stakeholders)
 - Integrating CRI into national and local planning (to Government and development agencies)
 - Supporting data provision about risks and damages (to Government and development agencies)

Abbreviations

ACA	Asuransi Central Asia
APPIK	Asuransi Perikanan Bagi Pembudidaya Ikan Kecil <i>Fisheries Insurance for Small Scale Fish Farmers</i>
AUBU	Shrimp Aquaculture Insurance <i>Asuransi Usaha Budidaya Udang</i>
BNPB	Badan Nasional Penanggulangan Bencana <i>National Disaster Management Authority</i>
CRI	Climate Risk Insurance
DRM	Disaster Risk Management
KKP	Kementerian Kelautan dan Perikanan <i>Ministry of Maritime Affairs and Fisheries</i>
MEFIN	Mutual Exchange Forum on Inclusive Insurance
MSMEs	Micro, Small and Medium Enterprises
OJK	Otoritas Jasa Keuangan <i>Financial Services Authority of Indonesia</i>
RFPI Asia	Regulatory Framework Promotion of Pro-poor Insurance Markets in Asia

1. Introduction

1.1 The rationale for Climate Risk Insurance in Indonesia

An increasingly climate-sensitive environment underlies worsening loss and damage trends and projections. Indonesia's location in the Pacific Ring of Fire exposes the country to frequent and ever-increasing climate-related shocks and disasters, further exacerbated by disasters from 127 active volcanoes, earthquakes and tsunamis. Jakarta, the country's economic hub, is particularly prone to earthquakes and floods, however, only a small part of its economy is insured against climate risks and natural disasters¹. The natural catastrophe protection gap between the city's economic and insured losses if a major earthquake or flood hits at present would amount to USD 10 billion, and in fact, the massive flooding in early 2020 had cost the insurers some USD79 million in losses. Climate and disaster risks impact sub-national levels even worse, with damages from past events reaching up to 50% of provincial GDP².

From 2000 – 2016, the annual average economic impact of disasters was estimated at IDR22.8 trillion (USD1.4 billion) and was estimated to be at IDR30 trillion in 2017 and IDR 100 trillion in 2018³. Economic losses incurred from climate-related events such as floods, tsunamis, storm surges and drought had amounted to 7.43 trillion (2000–2016). The average contingency fund from 2009–2019 has been around IDR3.9 trillion, leaving a financing gap of IDR 18.9 trillion.

Varied effects of climate risk for different stakeholders. Managing climate risk is key for sustainable development. It helps to limit economic losses and avoid suffering, and can foster peace and prosperity. Existing means such as community assistance and disaster aid are constrained in times of frequent, consecutive and severe disasters. Even smaller disasters can have devastating effects for those who are affected. Managing climate risk needs to address the different sub-sectors of society. The impacts and their severity differ in each sub-sector:

- **The public sector:** When disasters strike, government budgets are stressed as disaster management requires financing for immediate measures and for rapid reconstruction. Funds may need to be deviated from other important items like education. Consecutive disasters especially constrain government budgets.
- **The lower and middle-income private sector including micro, small and medium enterprises (MSMEs):** Accessing loans through formal or informal loans and the release of reserves are the traditional risk management strategies of lower income households and MSMEs. The effects of disasters, mostly floods and typhoons on MSMEs, are often so drastic that for example, 25% of the MSMEs affected are unable to operate afterwards.⁴ Their asset base is depleted and the gains of years can be washed away with one disaster.
- **Low-income households and poor:** The poor, marginalized and isolated are generally the most affected by the impacts of climate risks because the sectors which employ them (agriculture, fisheries and services) are often the most gravely hit. Disasters directly hit these segments who are the least able to adapt and have no access to any formal protection to manage economic losses. In addition, they are indirectly affected by post-disaster impacts

¹ https://www.swissre.com/dam/jcr:1f3b0c6d-75ef-4faa-957f-e965507216f0/Factsheet_NatCat_Protection_Gap_Jakarta.pdf

² <http://documents1.worldbank.org/curated/en/225361591241320010/pdf/Concept-Project-Information-Document-PID-Indonesia-Disaster-Risk-Finance-Insurance-P173249.pdf>

³ Krina, Vincentius. Indonesia Disaster Risk Finance and Insurance. Presentation made at the GIZ RFPI Asia Public-Private Dialogue, 17 September 2019.

⁴ RFPI, MSME study of 2018

such as unemployment of farm laborers, rising prices due to increased import of food and agricultural commodities, and low food availability in local markets, which could lead to food-price inflation and hunger.⁵ Surveys across five Asian countries found that among rural households, 90% had suffered loss of life or significant damage to assets from floods, and their recovery took more than three times longer than for urban households. At the same time, the poor are more vulnerable, and prone to being more severely affected by disasters, as they tend to settle in disaster-prone areas, have weaker shelters and can spend less in precautionary measures.

Coping strategies are insufficient and some have negative effects. MSMEs and low-income groups are generally excluded from insurance due to their low levels of insurance education, affordability constraints, lack of adequate products and distribution channels. For them, access to finance in the aftermath of a disaster is often blocked, due to the lack of a formal or regular income, an insufficient credit history, low collateral, or lack of proper identification. Owing to the lack of insurance or other formal protection schemes, they are unable to raise sufficient capital to restore livelihoods following a major catastrophe. This leads to affected people and MSMEs resorting to a variety of coping strategies such as activity diversification, selling assets, reducing food consumption, taking children out of school or borrowing in the event of a crisis. Some of these strategies might further trap them in poverty and impede development.⁶ Even middle-income segments face similar challenges when disaster strikes, and these segments can also suffer from significant financial losses as they generally also have very limited access to insurance.

Formal insurance protection available only for limited segments. The public sector and large corporations have access to certain insurance schemes, commercial insurance and own reserves, which can mitigate climate-induced economic losses and damages. Access to non-life insurance is generally very low in Indonesia, especially when it comes to asset and production loss insurance for MSMEs and for the middle and low-income segments.

1.2 Objectives and key themes of Concept Paper

This CRI Concept Paper aims to orient the public sector stakeholders working in policy areas that intersect with insurance such as disaster risk management, climate change adaptation or financial inclusion and social protection. The paper also intends to orient the stakeholders in the private sector, such as insurance companies, distribution channels in the financial sector and beyond, industry associations, and data and service providers on their ideal participation in and contribution to the promotion of CRI.

The Paper intends to serve as a reference for the clarification on CRI, and to map out the areas where future efforts are required in policy-setting and strategic orientation for promoting CRI, while ensuring that it is aligned with existing policy principles and planning priorities. Ultimately, enabling policy engagement and private sector engagement are both key and should go hand in hand.

The CRI Concept Paper will address the following **key questions**:

- (1) **What is climate risk insurance** and how does it fit within an integrated risk management framework?
- (2) What are the **different CRI models** at macro, meso and micro level?

⁵ <https://reliefweb.int/sites/reliefweb.int/files/resources/IntegratingInsuranceReport24Meta.pdf>

⁶ <https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly/establishing-partnerships-to-advance-climate-risk-insurance-approaches>

- (3) What are the different **segments of the target group**?
- (4) What **impacts** can be expected from CRI?
- (5) What are **the roles that different stakeholders** should or could play in promoting scalable CRI?
- (6) For which **policy contexts** is CRI relevant, where and how can it be integrated and what can it contribute?
- (7) What are the **short- and medium-term priorities** and actions for stakeholders to advance CRI coverages?

2. Key Concepts of Climate Risk Insurance

2.1 Definition and impacts of Climate Risk Insurance

Climate risk insurance (CRI) is “a risk transfer solution that aims to protect individuals, businesses and countries against the negative impacts of extreme weather events that are becoming more frequent and more severe due to climate change.”⁷ The following presents thoughts on the concept and the terms used for CRI:

- The idea behind the concept of CRI is that **climate change is making more frequent and severe natural disasters**, and for most of them, there is some evidence that not only floods and droughts but actually also volcano eruptions and earthquakes are becoming increasingly frequent due to the effects of climate change.⁸
- CRI **integrates inclusive insurance** approaches more broadly. Some coverages are found in the microinsurance sphere. It also integrates insurance lines under the term “general insurance or non-life insurance” such as agricultural insurance, asset insurance or business interruption insurance for sectors such as farming, fishing, or trade and services.
- **Other terms are used, apart from the overarching term CRI.** Sometimes, the term “disaster risk insurance” is used. Or, the terms “extreme-weather insurance“, “index-based insurance” or “parametric insurance“ are also used for these types of coverage, indicating the type of risk covered and the insurance approached taken, such as using an index or parameter like rainfall to a trigger a payout, instead of the proof of the loss or damage.

Making CRI broadly available has a series of desired impacts. There is increasing recognition that the emerging climate and disaster risk management and financing approaches (CDRFI) have been missing the insurance mechanisms in the past decade.⁹ Governments across the globe are becoming more aware that generally, improving access to CRI can impact the social and economic capacity of governments, households and enterprises to cope with shocks, thereby allowing public and private stakeholders (see figure 1):

Figure 1: Impacts of CRI at the different levels



⁷ E. Väähänen, K. Nett, C. Costella, J. Mendler de Suarez, Policy Brief: Linking Climate risk insurance with shock-responsive social protection (1-2019), InsuResilience GlobalPartnership, Food and Agricultural Organisation (FAO) and United Nations (UN) Environment and UN Climate Resilience Initiative

⁸ The study does not explore on the debate what types of catastrophes are clearly climate induced. For further reading see <https://www.oas.org/dsd/publications/unit/oea54e/ch05.htm>

⁹ InsuResilience Global Partnership - <https://www.insuresilience.org/about/>

2.2 Integrated Risk Management Framework

Insurance is part of an integrated approach to disaster risk management.

In an integrated approach, the role of CRI in relation to each element of risk management is determined through risk assessment and the identification of the different risk layers. Notably, stakeholders should combine strategies to manage risk such as insurance with other ex-ante and ex-post efforts to reduce the drivers of risk; and to reduce negative impacts ex-ante. This is particularly important for building resilience among the poor and vulnerable.¹⁰

The efforts of an integrated approach include the following measures in five areas:

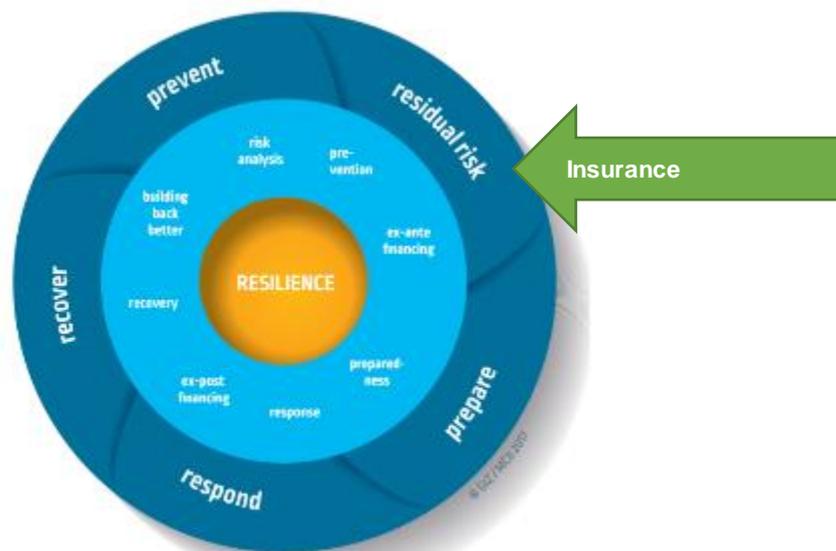
1. Measures that help **prevent** disasters and new disaster risks
2. Management of the **'residual' risk**
3. **Preparedness** for inevitable disaster impact
4. **Response** to a disaster in order to protect people and assets and mitigate losses

"Disaster risk finance and insurance solutions, when used as part of a comprehensive disaster risk management approach, can enable more resilient economic development and help protect lives, livelihoods, businesses, infrastructure, and public finances by strengthening disaster preparedness, rapid response, and recovery."

InsuResilience Global Partnership

Figure 2 shows an **integrated approach to improving resilience with the 5 components of Disaster Risk Management (DRM)**.¹¹ Insurance comes in as a risk transfer tool to transfer residual risk via ex-ante financing to improve preparedness, ultimately helping to improve resilience.

Figure 2: The Integrated Disaster Risk Management Circle



¹⁰ The role of insurance in integrated disaster & climate risk management: Evidence and lessons learned, Report No. 22, October 1017 MCII, 2017

¹¹ MCII, 2017

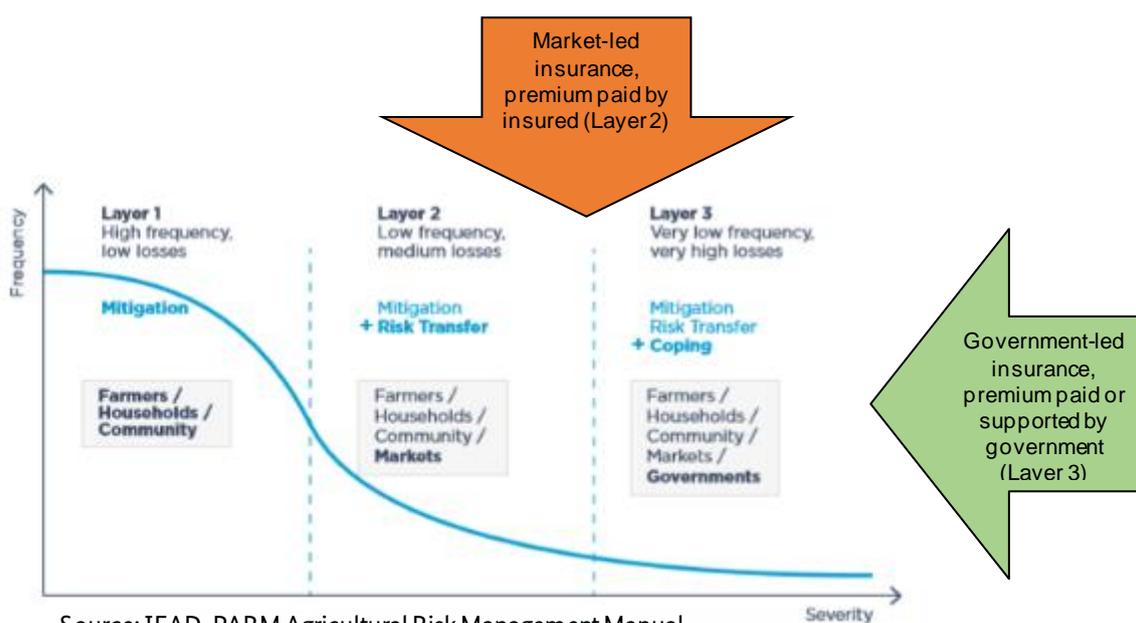
Some practical measures of an integrated approach of DRM are presented in Table 1.

Table 1: The five DRM components areas and examples of measures

DRM area	Measure
1. Prevention	Climate adaptation measures based on a detailed assessment of vulnerabilities of regions and of risks; examples include building dams, using climate-proof equipment or drought-resistant seeds.
2. Residual risk management	Retention and transfer of risk to provide quick liquidity to governments and to diverse groups of the population; example is insurance coverage for the government or for farmland owners and other agricultural actors ¹²
3. Preparedness for disaster impact	Improving risk awareness through communication tools and dialogue processes, such as farmer associations sharing information about risks and coping mechanisms among which insurance is one
4. Response to a disaster	Provision of emergency aid to affected populations in the form of cash, loan, food or other essential items
5. Recovery action to rebuild	Reconstruction including the rebuilding of roads and buildings, construction of better, flood-prone premises.

A comprehensive disaster risk management approach considers the different risk layers to which risk reduction and risk transfer measures will respond. The use of a financial instrument such as climate risk insurance should consider the frequency and severity of risk events and should be combined with other risk prevention and reduction measures as necessary. Figure 3 shows that in a “risk layering” approach, risk events that occur infrequently but with moderate to high severity can be insured through micro and meso CRI solutions paid by individuals or risk aggregators. Whereas risk events with very low frequency but with very high severity would incur expensive premiums that can be paid only macro-level CRI solutions paid by governments.

Figure 3: The risk-layering approach



Source: IFAD-PARM Agricultural Risk Management Manual

¹² MCII, Integrating Insurance into Climate Risk Management, (GIZ, BMZ, ACRI and UNU-EHS) 2019

2.3 The Climate Risk Insurance implementation levels

Climate risk insurance solutions can be delivered at the macro, meso or micro levels. Each level is differentiated by the type of policyholder, which can include governments, financial service providers (ex. microfinance institutions), businesses, trade associations or individuals. Table 2 expands on the three levels where CRI can be implemented.

Table 2: Levels of CRI implementation

Level and Coverage	Policyholder	Beneficiaries	Example
Macro-level insurance (multi-country)			
<ul style="list-style-type: none"> • Coverage for government assets and infrastructure • Operationalized through a sovereign risk pool for a group of countries or regions • Indirect insurance 	Government	Government	Southeast Asia Disaster Risk Insurance Facility (SEADRIF) African Risk Capacity (ARC)
Macro-level insurance (national)			
<ul style="list-style-type: none"> • Coverage for individuals through government services • Attached either through a disaster insurance scheme (ex. via social protections scheme or agriculture insurance scheme) • Indirect insurance 	Government	Poorest and vulnerable population	Nepal: Livestock Insurance Philippines: National Agriculture Insurance Vietnam: National Agriculture Insurance Program
Meso-level insurance			
<ul style="list-style-type: none"> • Coverage for an institution's financial risk • Indirect insurance 	Risk aggregators such as associations, cooperatives, mutual, credit unions, NGOs	Members or individuals receiving services from risk aggregators/institutions	
Micro-level insurance			
<ul style="list-style-type: none"> • Coverage for individuals or their groups • Direct insurance • Premiums either paid in full or subsidized 	Individuals	Individuals (ex. farmers, market vendors, fisherfolk) who receive payouts directly	See Table 4

The appropriateness of a CRI solution depends on factors such as 1) the group which the solution will benefit (cover), 2) the aggregator or convening entity 3) the source of payment. Solutions could be purely public (government) or fully private and market-led, while in some cases, a mix of public-private partnership could be required for the development and delivery of the CRI solutions.

2.4 Stakeholders of Climate Risk Insurance

A variety of public and private sector stakeholders should be engaged in the development and provision of CRI to different population segments. An overview of the roles that stakeholders can portray is provided in below:

Public Sector Stakeholders

- **Strategy Development.** Governments should ideally set up a comprehensive disaster risk financing and insurance strategy that aims to increase financial resilience of its agencies, communities and industries against the repercussions of climate-induced disasters. The strategy should build upon broader national fiscal risk management frameworks and harmonizes other relevant disaster risk reduction and management strategies.
- **Regulation.** Financial sector regulators and supervisors can champion climate risk insurance by setting regulatory requirements and parameters that enable the capacity-building of domestic risk carriers and access to cross-border reinsurance. The regulatory environment should be conducive to innovative products, channels and business models and should ensure viability of insurance operations. An effective monitoring and evaluation system should also be adopted.
- **Data Management.** National and local government units can provide access to climate risk and disaster information that can inform risk assessment and product development processes of insurance providers. Government can also clarify data sharing and data privacy protocols among its different agencies and with external stakeholders. Ultimately, government should invest in providing technical public goods in the form of open-source data and infrastructure.
- **Awareness-raising.** Governments are key to broadening insurance awareness among various stakeholders and ensure that activities are aligned with and contribute to broader financial inclusion and financial literacy programs.

Private Sector Stakeholders

- **Product Development and Distribution.** Insurance providers should engage with a variety of stakeholders, including distribution channels, to ensure that CRI solutions are needs-informed and ideally embedded in comprehensive disaster and risk financing and management strategies of the government. Product innovations should be explored, taking into consideration the reliability of coverage, affordability of premiums, appropriateness of product that deliver client value.
- **Awareness-raising.** Beyond product marketing and advertising, insurance industry players should collaborate with government and supporting institutions in raising insurance awareness that goes beyond traditional commercial marketing approaches.

Supporting Institutions

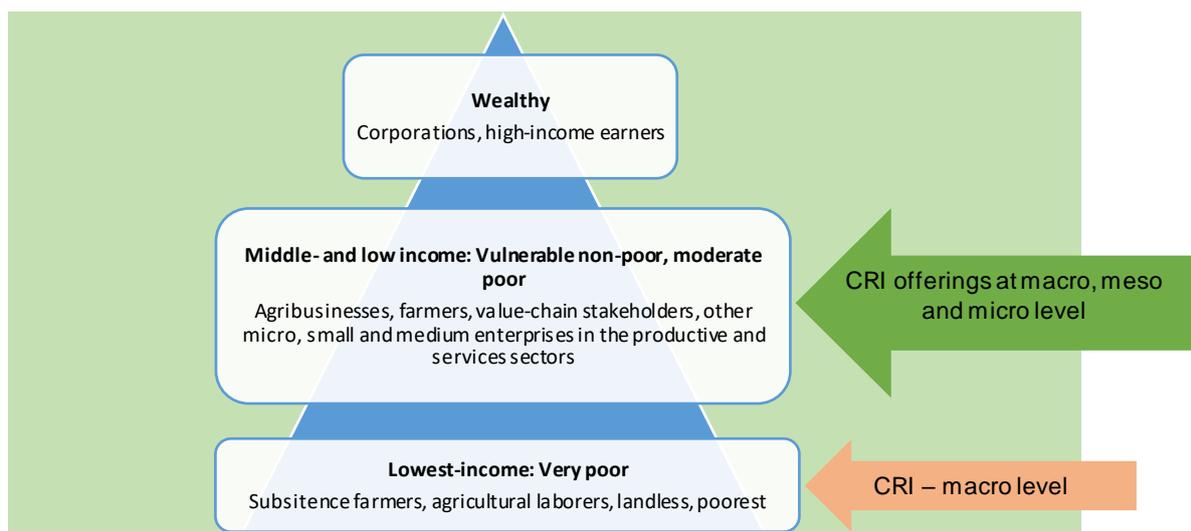
- **Development cooperation agencies** can support partnership-building and capacity development and facilitate knowledge and learning exchange.
- **Technical service providers and academe** can support both government and private sector generate data and process information through market research, risk and vulnerability assessments, data collection techniques and analytics.

- **Non-government organizations** can link communities and beneficiaries with whom they work with other programs promoting climate risk insurance within broader risk management interventions

2.5 The target groups of Climate Risk Insurance

Climate risk insurance benefits a diverse target group that differs in income levels, regional locations and livelihood sources. Each population segment will experience differing losses from climate-induced disasters and will therefore require distinct climate risk insurance coverages (see Figure 4). Wealthy citizens and big corporations can be expected to cope with disasters with their own financial means while the very poor cope through government-supported social development programs. But much of the middle- and low-income population segments have limited access to financial protection and would require CRI coverage to prevent either sliding into poverty or further being entrapped in poverty. The primary target groups of CRI therefore are the poor and vulnerable households and micro, small and medium enterprises (MSMEs).

Figure 4. Different CRI Target Groups



Each of these segments has its specific awareness, affordability, and access challenges to overcome and make CRI work for them. Challenges related to the types and affordability levels of products, appropriateness of distribution channels, and CRI information availability and accessibility will require different responses from insurers, distribution channels and government.

3. Country Context Indonesia

3.1 The policy context for climate risk insurance in Indonesia

The value of climate and disaster risk financing and insurance is recognized in Indonesian national policies and strategies.

The *National Strategy for Financial Inclusion* issued in 2012 identifies access to insurance (along with credit, savings, leasing and payments) as necessary to improve the participation of the poor in the Indonesian financial system, and thereby, enhancing their welfare and the country's economic growth¹³. The strategy, as an integral part of the broader approach to poverty eradication, proposed that the focus of insurance-related initiatives be on promoting insurance products for the poor, such as microinsurance. Up to that point, government programs that sought to provide access to insurance had been limited to Jamkesmas (health insurance for the poor) and TKI insurance (for migrant workers). Consequently, included in the new activities identified in the strategy's roadmap are the encouragement of insurance companies to provide micro insurance and the encouragement of bundling savings/credit products with insurance.

Building upon the financial inclusion agenda, the Otoritas Jasa Keuangan (OJK, Financial Services Authority) as regulator and supervisor of the insurance industry launched the *Grand Design on Microinsurance* in 2013. This blueprint set the parameters of microinsurance to enable insurers to more easily develop the products. It defined microinsurance to be simple in both features and administration, easy to access, is affordable and can make immediate claims payments. Since the issuance of the Grand Design, the number of microinsurance policyholders grew from 5.8 million in 2014 to 22.8 million in 2015, and from 25 participating companies to 65¹⁴. Microinsurance product coverages, however, usually offer little to no financial protection against losses from climate-related events and are mostly life or general insurance products that provide benefits in the event of death, accidents, property loss or damage, among others.

The *Disaster Management Law* (Law No. 24/2007), the country's comprehensive legal framework to improve disaster risk management, includes the mechanisms to allocate emergency funds for response and recovery from disasters and sets out the level of government response and the size of emergency funds based on the scale of the disaster events. The use of the emergency fund, however, is limited to helping households, mainly in restoring housing and replacing basic possessions, with a maximum receivable amount of IDR15m per household, which has not been considered as sufficient for either recovery or resilience-building¹⁵. The Law also doesn't provide for the protection of government-owned assets that may be affected by natural catastrophes, therefore any repair costs will have to be borne by the local annual budget of the affected area and could result in reallocation of funds.

National-level agencies that coordinate response and recovery actions and decide on fund allocations include the Ministry of Finance, *Badan Nasional Penanggulangan Bencana* (National Disaster Management Authority) and other relevant ministries, through the leadership of the President. If alternative disaster risk financing strategies are coordinated, for example ex-ante/pre-event measures such as insurance and catastrophe bonds, other stakeholders would be involved such

¹³ <http://pubdocs.worldbank.org/en/180401430845588930/Financial-Inclusion-Strategy-Indonesia-2012.pdf>

¹⁴ <https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Materi-OJK-PROKSI-2016/1.Microinsurance%20in%20Indonesia.pdf>

¹⁵ <https://www.emerald.com/insight/content/doi/10.1108/IJDRBE-01-2020-0006/full/pdf?title=developing-sustainable-arrangements-for-proactive-disaster-risk-financing-in-java-indonesia>

as the OJK, Badan Kebijakan Fiskal (Fiscal Policy Agency), Bapepam (Capital Market Financial Institution Supervisory Agency), and insurance companies.

In 2018, the *National Disaster Risk Financing and Insurance Strategy* was issued as a key input to building the country's fiscal resilience. At the time, the disaster risk financing portfolio of the country consisted only of regular budget allocation/reallocations (pre- and post-disaster), contingency fund for natural disasters (emergency), and grants (post-disaster). The strategy seeks to expand and further diversify the portfolio by combining financial instruments, using contingent credit that complements the budget, creating a pooling fund, and using insurance to transfer risks to financial markets for rare but severe events. The short-term priorities of the strategy focused on implementing the public asset insurance pilot project and strengthening and expanding household insurance instruments such as those subsidized for the agriculture and fisheries sectors.

This prioritization of financial protection for marine and fisheries is aligned with the provisions of National Law No. 7/2016 on the *Protection and Empowerment of Fishermen, Fish Growers and Salt Farmers* which provides protection to these sector workers and entrepreneurs against risks during fishing, fish cultivation (aquaculture) and salt farming activities in the form of insurance schemes. The Kementerian Kelautan Dan Perikanan (KKP, Ministry of Marine Affairs and Fisheries) operationalizes this law by Article 30 of the Law states that the risks to be protected against include the loss or destruction of production tools and facilities for fishing, aquaculture and salt farming, work accident or loss of life, and other types of risks that may be stipulated by ministerial regulation. The causes of risks referred to in the law are specified as ***natural disasters, fish disease outbreak and impacts of climate change and/or pollution.***

In implementing its mandate, the KKP has subsidized the provision of two insurance schemes: 1) the fisherman insurance scheme and 2) fisheries insurance for small scale fish farmers (APPIK). The fisherman insurance is a standard coverage for death, disability and medical treatment. The APPIK, however, is a more complex indemnity-based (compensation) scheme started in December 2017 that provides coverage against natural disaster and disease outbreak – two of the risks identified in Law No. 7/2016¹⁶. In 2019, shrimp insurance has also been offered as a commercial-based scheme. Since the distribution of shrimp insurance, the KKP and its implementing insurance companies have noted that in order to adequately protect and develop sustainable aquaculture, including shrimp businesses, insurance has to be provided within an integrated risk management framework that also takes into consideration the two other risk sources – impacts of climate change and pollution – and involves other supportive stakeholders such as data managers and technology developers. Convening an ecosystem of stakeholders and understanding how to expand the implementation of Article 30 will not only potentially lead to expanded insurance schemes, but could also influence the risk management practices of the target beneficiaries and harness the power of data and technology to promote sustainable fisheries and aquaculture.

In addition to sectoral relevance to aquaculture, climate risk insurance is also relevant to other public policy spheres (see Table 3).

¹⁶ 2018. Climate Risk Insurance in Indonesia: A Workable Approach. A Scoping Study by GIZ RFPI Asia.

Table 3. Policy Relevance of CRI

N°	1.	2.	3.	4.	5.	6.
Policy Context	Disaster Risk Reduction and Management	Climate change adaptation	Financial Inclusion	Agriculture	MSME Development	Social Protection
Policy Instrument <i>(with potential to integrate insurance)</i>	DRM / ORDRR strategies and plans	National Climate Change Action Plan (NCCAP)/ Nationally Determined Contributions (NDCs)	National Financial Inclusion Strategies	Agricultural Strategy	Business/ MSME Resilience Strategies	National/ Local Development Plans, Social Protection Frameworks
How they intersect with CRI	CRI is an instrument to transfer risks to another party	CRI as instrument to improve adaptation to climate change	CRI as a non-life insurance product and part of inclusive insurance agenda	CRI as a crop or livestock insurance within overarching agriculture insurance programs	CRI to improve resilience of businesses and value chains	
Cross-cutting policy themes	Rural Development Poverty alleviation Food security Gender and Development					

3.2 The market context for climate risk insurance in Indonesia

The current climate risk insurance supply in Indonesia is still relatively limited and is provided by both the government and the private sector. Table 4 provides an overview of some of the climate risk insurance solutions initiated at the macro and micro levels.

Table 4. Examples of CRI solutions in Indonesia (see 2.1 for broader definition and coverage of CRI)

Insurance Level/Type	Description
Macro	<p>National and sub-national insurance for public assets</p> <ul style="list-style-type: none"> - Most of the public assets, including critical assets such as hospital and schools, are not currently insured against natural disasters. - A panel of 56 insurance and reinsurance companies have backed the disaster insurance arrangement for Indonesia, with the Finance Ministry paying a fixed premium for the coverage (reported as more than 21 billion rupiah, US \$1.5m). - The ID government plans to replicate this state asset coverage for other ministries over the next few years - Subnational governments have started insuring public assets: municipality of Yogyakarta started insuring its assets in 2003 and received a US\$0.5 million payout following the 2006 earthquake to help restore schools, hospitals, traditional market places and motor vehicles (Cf. World Bank 2011) / The insurance companies Bumid, Sinar Mas and Ramayana are the main insurers of the city of Yogyakarta. - Agency for Fiscal Policy (Badan Kebijakan Fiskal / BKF) has begun developing earthquake insurance through a pooling fund scheme and is currently in its pilot stage. The scheme aims to protect the Ministry of Finance's assets as regulated by the Minister of Finance's Regulation Number 247 2016 (PMK 247/2016) regarding the Insurance for State Assets (BKF, 2018, p.37; Kemenkeu RI, 2016).

Insurance Level/Type	Description
	<p>PT Asuransi Bangun Askrida</p> <ul style="list-style-type: none"> - Insurance established by the government as a state-owned company to provide insurance coverage for government buildings and property - only approached local governments for regional/provincial schemes - insurance premium allocation is paid from the provincial government budget -
<p>Micro</p>	<p>Asuransi Perikanan Bagi Pembudidaya Ikan Kecil (APPIK) - Fisheries Insurance for Small Fish Farmers:</p> <ul style="list-style-type: none"> - launched by KKP in 2017, a 100% premium borne by the Government - Premium Rate is set to vary according to the commodity of the fish being insured <p>Asuransi Usaha Budidaya Udang (AUBU) - Shrimp Aquaculture Insurance:</p> <ul style="list-style-type: none"> - Commercial AUBU is an insurance aimed at business actors in tiger/vaname shrimp. AUBU permit has been approved by the OJK. Developed as response to requests from the shrimp farming industry commercial AUBU products are now available. - premium rate is set at 3% per cycle (4-5 months) <p>Sompo Insurance - Weather Index Insurance for smallholder rice farmers in</p> <ul style="list-style-type: none"> - Premium: IDR 50,000 for 1,000m² land area - Coverage (Sum Insured / Benefit): IDR 500,000 - One person can buy the maximum premium of 10 applications (IDR 50,000 x 10 applications = IDR 500,000) so it can cover the farmer's land area of 1 Ha. In result, the total benefit can be up to IDR 5,000,000. - If accumulation of rainfall in insurance period is below or equal to predefined threshold, claim will be paid. Rainfall amount will be measured by the nearest BMKG weather station. The threshold calculation will be done by Sompo and is determined before the period of insurance starts. <p>Allianz - Asuransi Rumahku Plus</p> <ul style="list-style-type: none"> - Property insurance with premium as low as 0.1295% of both the building and households' values. - Complete protection for your home and its contents. Protection from fire and natural disasters such as earthquake and tsunami, but also riots, civil commotions, terrorism, insured's death, third party liability. - Claim payment is based on reinstatement cost, unlike standard fire insurance. - Cash benefit for temporary accommodation, amounting 10% out of sum insured, up to IDR25.000.000 <p>2017 Pilot Paddy insurance by ACA</p> <ul style="list-style-type: none"> - Weather index based, a pilot project launched on October 04th 2017 with 80 ha paddy field in Indramayu District, West Java Province. - No government subsidy (interest rate, insurance premium) <p>2015 Pilot Corn insurance by ACA</p> <ul style="list-style-type: none"> - Index based Crops insurance for corn under Agriculture Financial (Agrifin) Mobile project Financing of Small Holder Corn Farmers based on Value Chain. - No government subsidy (interest rate, insurance premium)

4. Recommended entry points for CRI Development

Climate risk insurance is still an evolving component of a comprehensive risk management framework and requires the joint initiatives of stakeholders identified in Chapter 2. Owing to the complex conditions required for CRI solutions development, stakeholders should carefully consider and explore a number of entry points towards CRI solutions planning and implementation.

Entry point 1 – Fostering knowledge about CRI (to all stakeholders)

Increasing awareness and deepening understanding about CRI is a long-term strategy that should be embedded into existing and planned capacity-building and information-sharing exercises. Some examples of relevant activities include:

- a. **Implementation of knowledge events in the country at national, regional and district level.** The topic of CRI should capitalize on knowledge events that are regularly implemented by public and private stakeholders, for example, the monthly discussions taking place at Pujiono Centre for Disaster and Climate Risk Reduction Studies and the respective climate and disaster related events of local government units. Merging coordination platforms for CRI could emerge from these events if leveraged.
- b. **Facilitating participation in regional dialogues to learn from experiences in other countries.** Some examples of relevant regional dialogues into which the topic of CRI could be included are the Asia Pacific Climate Change Adaptation Forum (ADB and UN Environment) and the Mutual Exchange Forum on Inclusive Insurance Public-Private Dialogues (GIZ).
- c. **Identification, development and dissemination of good-practice information of relevant examples from other countries.** Some examples of knowledge repositories are Access to Insurance Initiative (A2ii), InsuResilience Global Partnership (IGP), Microinsurance Network (MiN) and the Mutual Exchange Forum on Inclusive Insurance (MEFIN).
- d. **Establishment of a web-based platform for public CRI information.** Data and information that go into planning and designing climate risk insurance solutions are usually generated and owned by different sources. An institution should take on the role of identifying these sources and the data types they collect and consolidate them into one database that can be accessed by the relevant CRI stakeholders.

Entry point 2 – Integrating CRI into national and local planning (to Government and development agencies)

The CRI agenda should be embedded in institutionalized planning and budgeting processes and opportunities for an integrated approach should be explored through the following examples:

- a. **Creation of national policy/framework to guide national government agencies and local government units in integrating CRI into respective strategies and plans**
- b. **Advocacy and capacity-building of local government personnel on integrating CRI agenda into local plans**
- c. **Collaboration on data processing for risk assessment and modelling needs**, for example, as a result of monitoring the implementation of the National Aquaculture Insurance Program
- d. **Integration of CRI into support projects** in the areas of MSME development, livelihood promotion, agriculture and social protection.

Entry point 3 – Supporting data provision (to Government and development agencies)

Develop existing and new climate risk information databases to support risk assessment and product development, and for claims or loss and damage assessment. Ex-ante and ex-post climate risk and disaster information on hazards, vulnerability, exposure, loss and damage are all necessary

for the preparation, monitoring and evaluation of risk reduction and management measures of the government. Moreover, they are inputs to climate risk insurance product development and will ensure that solutions developed are tailored to the risk and recovery needs of individuals, communities and enterprises. Some of the established global databases include EM-DAT maintained by the Centre for Epidemiology of Disasters (CRED), Sigma by Swiss Re and NatCatSERVICE by Munich Re that can serve as guides for a related initiative in Vietnam. Databases currently managed by other institutions, such as the Institute of Meteorology, Hydrology and Climate Change (Ministry of Natural Resources and Environment), should be understood and leveraged where necessary.

Entry point 4 – Developing a multi-stakeholder Climate Risk Insurance Roadmap

The immediate next step on the way forward is the development of a multi-stakeholder **CRI Road Map** for the planning and implementation of these entry points, which is differentiated for stakeholders and across the three levels of climate risk insurance implementation (macro, meso and micro). A simplified template for the roadmap is provided below which should be grounded in an analysis of the context and gaps it responds to and aligned with existing government and private sector initiatives and priorities. This Roadmap can be accomplished as a standalone plan or as aligned with existing priority program, for example, the National Agriculture Insurance Program.

Table 5. Basic Template for CRI Roadmap

	Stakeholders to be involved	Relevant programs to align with	Key Activities	Timeline	Expected Outputs
Macro Level Insurance	Specify government agencies				
	Specify other stakeholders				
Meso Level Insurance	Specify risk aggregators				
	Specify other stakeholders				
Micro Level Insurance	Specify insurance providers				
	Specify distribution channels				
	Specify other stakeholders				

Annex 1 - Bibliography

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