

# **Terms of Reference**

## **Consulting Services for Multi Hazard Risk Financing Strategy for Assam under Assam Integrated River Basin Management Project (AIRBMP)**

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## **A. Introduction & Project Overview**

The State of Assam is strategically important as the largest and most populous State in the Northeast and holds great potential for development through improved water resources management. However, Assam is one of the States hardest hit by erosion and flood hazards. Climate change is expected to exacerbate current hazards and lead to more frequent floods and accelerated soil erosion. A progressive and systematic approach is needed to address the key water-related risks and opportunities in Assam.

The Assam Integrated River Basin Management Project (AIRBMP), responds to the Government of Assam's (GoA) request to support improved water resources management for economic growth and prosperity, including addressing flood and river erosion risks. The program focuses on building the requisite institutional capacity, filling critical knowledge gaps, and implementing integrated solutions to tackle the current challenges for climate resilient growth and improved livelihoods. The expected funding is US\$ 500 million following a Multiphase Programmatic Approach (MPA). The MPA would consist of three overlapping phases or projects over a total of ten years.

The Project Development Objective (PDO) of the first phase is: To strengthen institutional capacity for integrated water resources planning and management, and to enhance preparedness for flood and river erosion risks in Assam. Key implementing agencies for AIRBMP include Water Resources Department (WRD), Flood and River Erosion Management Agency of Assam (FREMAA), and Assam State Disaster Management Authority (ASDMA).

### **Component 1.2: ASDMA Institutional Strengthening**

This Term of Reference (ToR) is Component-1.2 (a): Multi hazard Risk Financing Strategy for Assam to support the development of strategy.

## **B. Background and Rationale for the Project Component**

The state of Assam is prone to multiple natural hazards such as earthquakes, floods, landslides, cyclones, and occasional droughts. The broad state-wide profile of hazards and impacts indicate that a wide range of threats and hazards pose a significant risk to the state (Assam State Disaster Management Plan, 2022). Financial impacts generally experienced post disaster that are also evident in the State of Assam are indicated in figure 1. More details are given below.

<p><b>Government</b></p> <p><b>Direct</b></p> <ul style="list-style-type: none"> <li>• Emergency response and recovery expenditures;</li> <li>• Reconstruction expenditures for uninsured/underinsured public infrastructure, public buildings, and often low-income housing;</li> <li>• Costs for improvements of reconstructed infrastructure, as well as for relocation of at-risk population;</li> <li>• Expenditure on social and economic recovery support programs;</li> <li>• Realization of contingent liabilities to state-owned enterprises, to firms that are critical to economic recovery, etc.</li> </ul> <p><b>Indirect</b></p> <ul style="list-style-type: none"> <li>• Decreased tax revenue due to economic disruption and declines in GDP growth;</li> <li>• Opportunity cost of diverting funds from development and social programs to disaster response and reconstruction;</li> <li>• Increased domestic/international borrowing costs;</li> <li>• Potential negative impact on sovereign credit rating;</li> <li>• Increased expenditures for social support programs (safety nets);</li> <li>• Migration due to disaster impact [loss of livelihoods].</li> </ul>	<p><b>Homeowners and SMEs</b></p> <p><b>Direct</b></p> <ul style="list-style-type: none"> <li>• Reconstruction costs due to damage of often uninsured or underinsured assets;</li> <li>• Health and other financial costs associated with human fatalities, injuries, and disabilities.</li> </ul> <p><b>Indirect</b></p> <ul style="list-style-type: none"> <li>• Loss of income/livelihood due to business interruption/unemployment or loss of wage earner;</li> <li>• Loss of income/livelihood due to economic decline;</li> <li>• Increased borrowing costs;</li> <li>• Additional expenses such as health care and paying for alternative accommodation during reconstruction.</li> </ul>
<p><b>Farmers</b></p> <p><b>Direct</b></p> <ul style="list-style-type: none"> <li>• Reconstruction costs for often uninsured or underinsured assets;</li> <li>• Restocking/replanting/rehabilitation of productive assets such as livestock or crops.</li> </ul> <p><b>Indirect</b></p> <ul style="list-style-type: none"> <li>• Loss of income for farmers and other supply chain actors due to interruption of crop/livestock/fish stock production;</li> <li>• Loss of income for farmers and other supply chain actors due to economic decline and/or lack of access to markets;</li> <li>• Increased borrowing costs;</li> <li>• Increased risk aversion to new and innovative investments, leading to adoption of low-yield but safer seed varieties.</li> </ul>	<p><b>The Poorest</b></p> <p><b>Direct</b></p> <ul style="list-style-type: none"> <li>• Reconstruction costs for damaged assets;</li> <li>• Replacement of livestock.</li> </ul> <p><b>Indirect</b></p> <ul style="list-style-type: none"> <li>• Decreases in expenditure on food, accommodation, and human capital [possibly combined with higher costs for healthcare, education, etc];</li> <li>• Loss of social support due to breakdown in informal safety net systems such as family and community support;</li> <li>• Loss of income and unemployment;</li> <li>• Increased borrowing costs.</li> </ul>

**Figure 1: Possible Financial Impacts of generally experienced in post disaster scenario**

**Direct Financial Impact on Government**

The government’s central role in natural disaster emergency relief, recovery, and reconstruction implies a large and direct financial burden. While this burden varies greatly across districts within the state of Assam depending on the definition of the government’s contingent liability to natural disasters, there are many universal features.

During and directly after an event, the government is required to provide emergency relief to the affected population. These costs tend to be small in terms of the event’s overall costs but require immediate mobilization of funds. Reconstruction of uninsured or underinsured public infrastructure—including low-income housing— typically accounts for the majority of public spending following disasters. In some cases, middle- and high-income residents and SMEs exert

pressure for public support of reconstruction. Government-sponsored social and economic support programs for individuals, SMEs, and farmers can also be significant and even exceed the costs of reconstruction. Finally, major natural disasters can trigger public contingent liabilities arising from state-owned enterprises and firms that are critical for economic recovery from the event.

### **Indirect Financial Impact on Government**

The macroeconomic costs of natural disasters, including the immediate decline in GDP growth and the cumulative, permanent GDP loss during the years following a major disaster, affect the government's budget. This impact is primarily due to impact in import and exports resulting in revenue losses.

### **Direct Financial Impact on homeowners and MSEs**

The middle class is an essential driver of countries' economic growth, and this group tends to have a significant portion of wealth invested in property—specifically the family home. A natural disaster shock to an uninsured middle-class homeowner can thus easily destroy much of a family's wealth. Additionally, most homeowners go uninsured against natural disasters. The shock of a disaster is similar for MSEs.

### **Indirect Financial Impact on homeowners and MSEs**

SMEs can suffer significant economic loss from the indirect effects of disaster, usually totaling more than their losses from direct damages. Interruptions to business can arise from direct damage to the business' property, or from damage to infrastructure or other business operations along the supply chain. Natural disasters can also cause significant reductions in household income and investment in human capital.

### **Direct financial impact on Farmers**

The agricultural sector is a socially and economically important sector in Assam. Agricultural producers, such as farmers, herders, and fishermen, are highly exposed to multiple, often systemic risks to production, including natural perils, crop and livestock diseases, and insect invasions. The impact extends to irrigation schemes and projects resulting to additional impact on farmers.

### **Indirect financial impact on Farmers**

Similar to other economic sectors, farmers typically also suffer indirect losses. Disasters can prohibit access to markets, making it difficult for producers to sell their crops. They may also lower demand for products with a corresponding decrease in the earnings of producers. In addition, a combination of factors, including the inherent riskiness of agricultural production,

means that agricultural credit can be unavailable or carry high interest rates for smallholder farmers. The occurrence of a natural disaster may exacerbate these credit constraints by destroying output, subsequently increasing default rates, and reducing lenders' willingness to lend.

### **Direct financial impact on the poorest**

The poorest may own few physical assets, but what they do have is often highly exposed. People living in low-income communities tend to live in more hazardous locations, have fewer savings, and lack insurance protection compared to those in higher-income communities. In addition to physical damage and loss, the susceptibility to water borne disease also leads to a financial impact.

### **Indirect financial impact on the poorest**

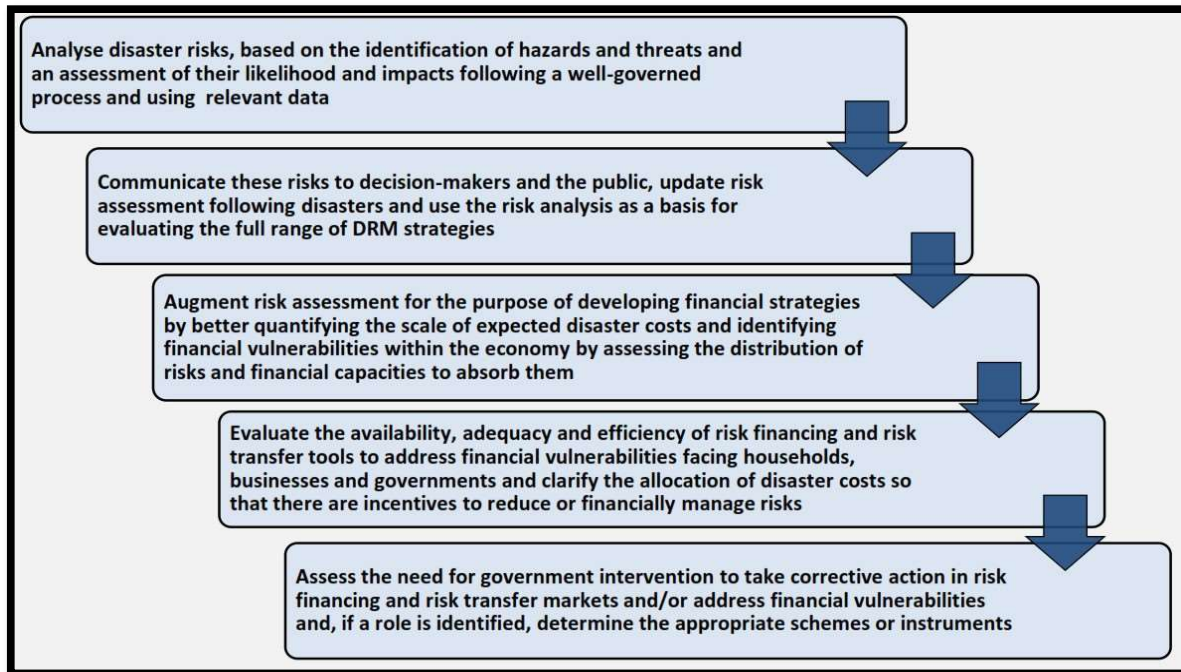
The less visible financial impact on the poorest is often the most detrimental and persistent. The poorest households suffer more financially and for longer periods of time than any other demographic. The extremely poor are also exposed to breakdowns in local social safety nets. Community-based risk sharing mechanisms are burgeoning in the developing world, with the poor increasingly able to participate in local groups that provide loans or grants to households that have been exposed to a shock. While these mechanisms perform well for idiosyncratic shocks (such as the death of a breadwinner), they often break down after a systemic shock from a natural disaster. Formal government-subsidized social safety nets may also struggle with increased demand during disasters if they lack the capacity to expand support.

## **C. The Rationale**

The Government of Assam proposes to utilize a part of the World Bank Loan (AIRBMP) to take steps to reduce the negative financial effects of disasters in a way that it protects both people and assets. The proposed strategic study for financial protection is expected to complement risk reduction by helping Government of Assam address residual risk, which is either not feasible or not cost effective to mitigate and shall help to manage those shocks without compromising development progress, fiscal stability, and wellbeing. Further, the study endeavors to facilitate Government of Assam in evolving its Public Financial Management (PFM) systems for embedded disaster and climate sensitivity.

The broad objectives of this TOR are developed based on the methodological framework which is intended to help governmental authorities of Assam in developing more effective DRM strategies and financial strategies, building on strengthened risk assessment and risk financing and enhancing resilient PFM systems. While the framework does not specifically explore disaster risk reduction policies, it highlights the strong interconnections between disaster risk assessment, risk reduction and Public Financial Management (PFM), key building blocks for

dynamic and continually evolving DRM strategies. The framework first addresses risk assessment as a key step for promoting risk financing strategies through a series of concrete steps (Figure 2).

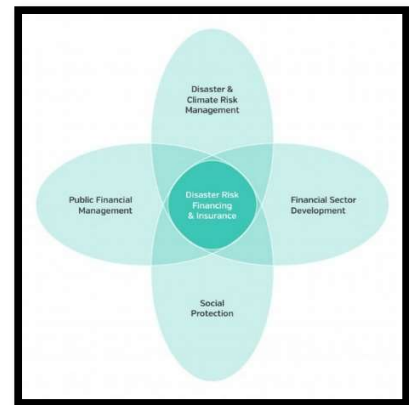


**Figure 2: Methodological Framework of Multi-Hazard Risk Finance Strategy**

Source: Disaster Risk Assessment and Risk Financing: A G20 / OECD Methodological framework. <https://www.oecd.org/gov/risk/g20oecdframeworkfordisasterriskmanagement.htm>

Multi hazard Risk Financing Strategy for Assam envisage development and implementation of cost-effective and sustainable solutions to provide a practical approach along with comprehensive overview of disaster risk management, fiscal risk and budget management, public finance, private sector development, and social protection within the state of Assam. This strategy should help to minimize the cost and optimize the timing of meeting post- disaster funding needs without compromising development goals, fiscal stability, or wellbeing. While simple measures can quickly support improved financial protection, more complex financial solutions and institutional change require technical expertise and political will.

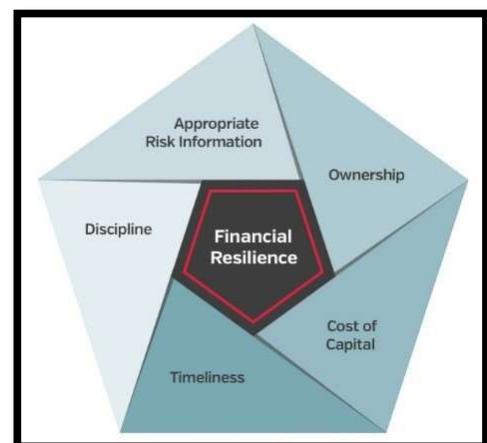
Within the framework mentioned earlier, the objective of the techno-strategical study is to ensure conduction of a deep techno-financial study on the prevailing financial systems of Assam associated with post disaster. The analytics will also assess the effectiveness of the existing practices and the underlying PFM system to support policy implementation through fiscal discipline, strategic allocation of resource and efficient service delivery. The findings of the study are anticipated to deliver at-least the following long-term outcomes-



- Improved understanding and assessment of public contingent liabilities related to natural disaster.
- Develop State’s financial protection strategies with readiness for investments and implementation.
- Explored options & strategies for financial institutions to offer affordable, sustainable, cost-effective parametric financial solutions to government, homeowners, SMEs, and agricultural producers.
- Explored options to integrate disaster risk considerations into the design of social protection programs.
- Improved understanding and strategies for evolving the States’ PFM systems for enhanced institutional response to natural disasters, climate change and other catastrophic events.

## D. Scope of the Assignment

The scope of the study is to support Assam to (i) develop disaster risk financing and insurance strategy (ii) resilient, responsive Public Financial Management (PFM) Systems by pinpointing critical PFM policies and practices that can be strengthened to improve the capability to respond more efficiently and effectively to natural disasters and other catastrophic events through Parametric Insurance options, without loss of the integrity and accountability.



A comprehensive analysis will be conducted, to develop a sequenced prioritized action plan for enhanced PFM systems, DRM institutional strengthening and capacity building. This will enable the State to understand the strengths and challenges of their institutional architecture and develop laws, policies, organizations, processes, and programs



primarily Parametric Insurance options to improve their cross-sectoral response to climate change and disaster. The diagnostic shall also bring into purview the Central-State guiding principles and functions to carry out an end-to-end assessment.

The scope of this techno-strategical study is guided by the core principles of Disaster Risk Finance<sup>1</sup> with an agreed sequenced prioritized action plans for enhanced PFM systems, associated institutional strengthening and capacity building. Governments seeking to evaluate and improve their financial resilience should be guided by four pillars. These principles do not tell decision makers what to do, but they provide a framework for evaluating policy decisions and financial instruments.

This framework consists of four pillars: Data and Analytics, Disaster Risk Layering, Timeliness of funding and Fund Mobilization. The scope of this assignment is developed based on these four pillars:

**Component 1: Data and Analytics**-Develop catastrophic multi-hazard risk profiles of all disasters which strike the state of Assam. Example: floods (riverine and flash), cyclones, landslides, earthquakes, and droughts etc. Collect database of economic and financial losses caused by natural disasters during the last 2 decades and analyze it.

**Component 2: Disaster Risk Layering**-Design and deliver a risk financing / financial protection strategy that mobilizes different instruments, to protect against disastrous events of different frequency and severity, either before or after, to address the evolving need for funds.

**Component 3: Timeliness of funding** - Developing disaster risk financing and insurance strategy based on the catastrophic multi-hazard risk profiles considering the timelines of occurrence.

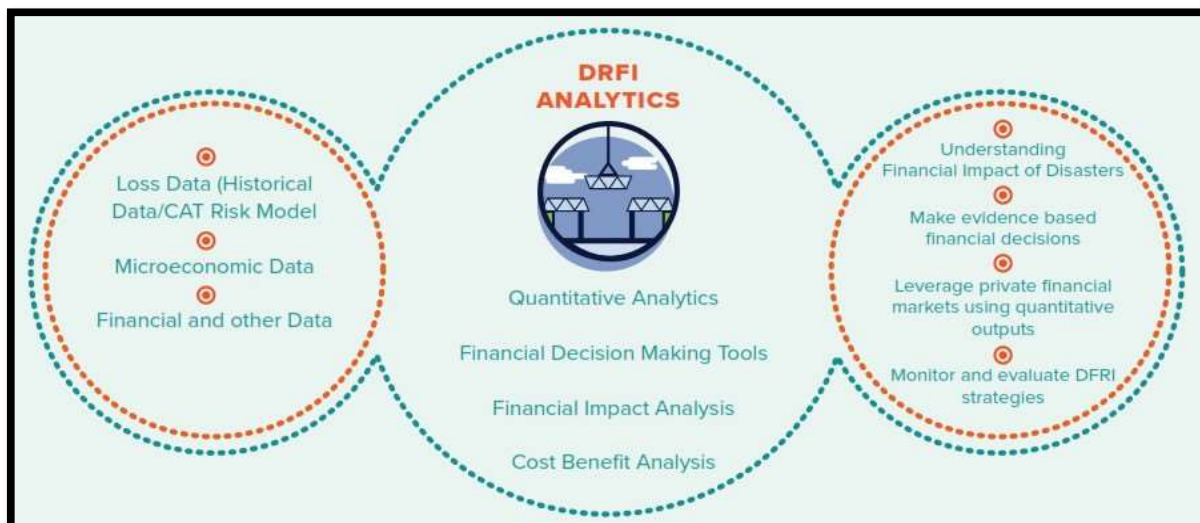
**Component 4: Fund mobilization**-To build resilient and responsive public finance management (PFM) systems by pinpointing critical PFM policies, practices, and procedures that can be strengthened to respond more efficiently and effectively to natural disasters, climate change and other catastrophic events, without loss of the integrity and accountability. More details such as key activities and expected outcome of each component are described below:

#### **Component 1: Data and Analytics**

Develop catastrophic multi-hazard risk profiles for the state of Assam, especially for floods (riverine and flash), river erosion, cyclones, lightening, earthquake, and droughts etc. Collect database of economic and financial losses caused by natural disasters during the last 2 decades and analyze it. Financial analysis of risk data and quantitative evidence empowers governments to take risk-informed decisions regarding their financial protection against disasters. Pictorially the loss data and analytics proposed in component 1 is shown below in figure 3.

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<sup>1</sup> Disaster Risk Finance: A Primer Core Principles and Operational Framework.  
<https://www.worldbank.org/drfi>



**Figure 3: Loss data and analytics proposed in component 1**

### Key activities of Component 1

- Review scientific studies performed on the severity, frequencies, and risk of major disasters floods (riverine and flash), river erosion, cyclones, lightening, earthquake, and droughts etc. and develop multi-hazard risk profile for Assam.
- Collect database of economic and financial losses caused by natural disasters during the last 2 decades, develop and calibrate Catastrophic (CAT) Risk Model using the multi-hazard modules of major disasters using the loss data of historical events.

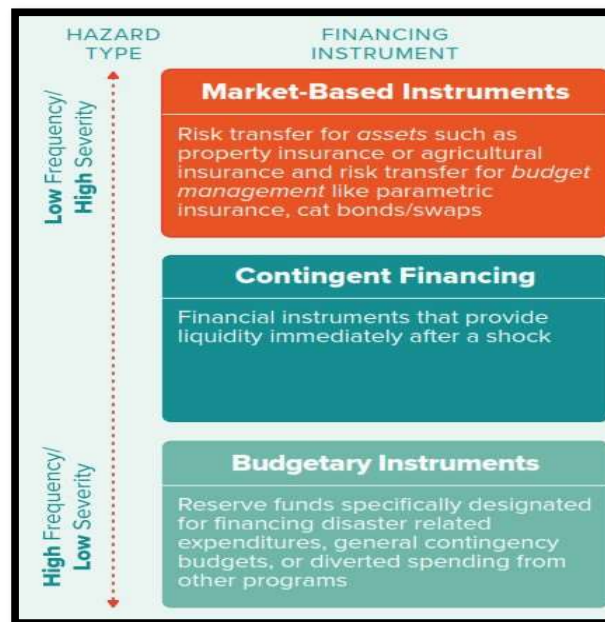
### Expected outcomes of Component 1

- 1) Multi-hazard risk profile of Assam
- 2) Database of historical damage and losses, including their economic and financial losses caused by past natural disasters and the Catastrophic (CAT) Risk Model.
- 3) The loss assessment may include but is not limited to annual expected loss (AEL), loss exceedance curve and associated Probable Maximum Loss (PML) for 25-, 50-, 75-, 100-, 150-, 200-, and 250-year return periods.
- 4) A technical report describing the data collected and the limitations encountered.

### Component 2: Disaster Risk Layering

Governments ideally combine different instruments to protect against events of different

frequency and severity. This approach, known as risk layering, is part of a comprehensive financial protection strategy that mobilizes different instruments, either before or after a disaster strikes, to address the evolving need for funds. Risk layering ensures that cheaper sources of money are used first and that the most expensive instruments are used only in exceptional circumstances. For example, insurance can provide cover against extreme events, but is not appropriate to protect against low-intensity events that recur regularly. To retain this lowest layer of risk, the government could consider setting up a dedicated contingency fund, as shown in figure 4.



**Figure 4: Financing Instruments based on Hazard Types**

### Key activities of Component 2

- Arrange the multi-hazard risk profile (component 1) including AEL and PML based on high frequency / low severity and low frequency and high severity.
- Review the existing disbursement systems towards high frequency / low severity and low frequency / high severity disastrous events at state/district/revenue circles through Stake holder consultations
- To develop disaster risk financing (DRF) strategy considering existing budgetary resources (possible pre- and post-disaster budget reallocation). The DRF strategy should be a higher-level policy document to set out priorities for disaster risk finance to inform the risk transfer instruments based on the timeliness of the multi-hazard risk profiles (component 1)
- Conduct actuarial analysis of disaster risk benefits from indicative insurance premium.

- Identification of risk transfer instruments – this should attempt to identify cost effective options and facilitate comparison across proposed catastrophe risk financing instruments.

### **Expected outcomes of Component 2**

- 1) AEL and PML based on high frequency / low severity and low frequency and high severity of multi-hazards.
- 2) Public Financial Management components i.e., fiscal rules, institutional frameworks, and administrative guidelines include clauses categorize into budgetary instruments, contingent financing, and market-based instruments.

### **Component 3: Timeliness of funding**

Understanding the timing of financial needs in a multi disastrous situation is essential. In the aftermath of a major disaster, the government will not require the money needed for the entire reconstruction program all at once. While immediate liquidity is crucial to support relief and early recovery operations, the government has more time to mobilize the larger resources for the reconstruction program. This variation in the timing of needs has clear implications for the design of cost-effective financial management of disasters.

### **Key activities of Component 3**

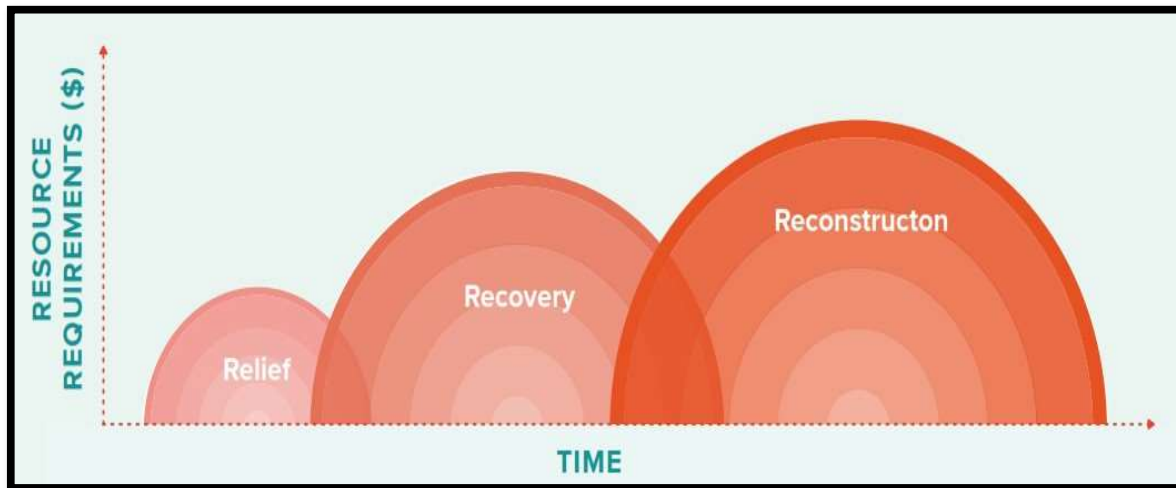
- Develop a fund requirement strategy using the financing instruments (Component 2) for multi-hazards, based on anticipated timelines (before and after) through stake holder consultations
- Organize the financing instruments for use before any disaster strikes for preparedness (early warning and anticipatory action).
- Organize the financing instruments for use immediately after any disaster strikes (response).
- Organize the financing instruments for use after any disaster strikes (relief, recovery, and reconstruction).

### **Expected outcomes of Component 3:**

- 1) Develop strategy for fund requirement for each hazard separately i.e., floods (riverine and flash), river erosion, cyclones, lightning, earthquake, and droughts etc. based on timeline (before or after)
- 2) Organize the financing instruments (budgetary instruments, contingent fund, and market-

based instruments) for use before, during and after any disaster strikes.

The timeliness of the resource requirements is presented below.



**Figure 5: Resource requirements based on Time**

It is envisioned that the proposed Multi-hazard Risk Financing Strategy will:

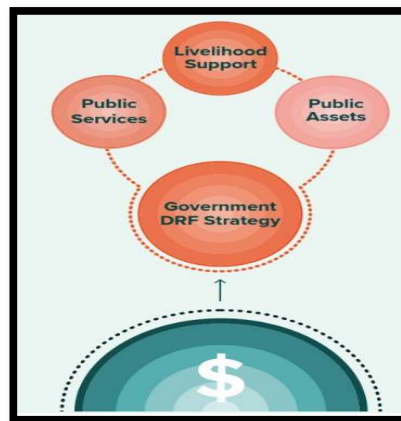
- Be informed by international good practices on risk-layering and financing but situated in the Indian public finance management and market context.
- Be synchronized with the ongoing deliberations and emerging recommendations of the 15th Finance Commission on disaster risk management.
- Be based on a quantification of catastrophe risk profiles specific to Assam.
- Identify financial instruments for layers of impact, considering the scale of funding required for each layer of impact, the speed with which disbursement of funding is required and the relative cost-effectiveness of alternative instruments for specific layers of impact.
- Consider the distribution of disaster risk financing responsibilities between different levels of Government and between Government, the private sector, and civil society, including business, farmers, and households as well as sovereign and international stakeholders, if any.
- Take into consideration the risk appetites at various levels of Governments and private sector, risk absorption capacities, risk transfer mechanisms and outer limits of transfers, and risk retention capacities.
- Draw from the gaps and DRM needs across multiple risk profiles (all types of floods, landslides, earthquake, cyclones, riverbank erosion etc.) and sectors (infrastructure, livelihoods, social sectors etc.)

The financial instruments can focus on the custodians and management of these instruments, the target groups / communities, scale of implementation, criteria, data needs, and other

relevant information

#### Component 4: Fund Mobilization

How money reaches beneficiaries is as important as where it comes from (component 3). Government requires dedicated mechanisms and expertise to effectively allocate, disburse, and monitor recovery and reconstruction funds. Strong collaboration between the ministry of finance and the public entity tasked with spending pre- and post-disaster funds such as local governments or agencies that maintain public infrastructure is crucial. In addition, the disbursement system must balance policy makers' concern for fast disbursement with the transparency and accountability required by the public and donors.



**Figure 6: Schematic Representation of Fund Disbursement**

#### Key activities of Component 4

- Develop dedicated mechanisms and suggest government to integrate and effectively allocate, disburse, and monitor for preparedness, recovery and reconstruction using the financing instruments.
- Develop a constructive and transparent collaborative approach between the department of finance and state/district/revenue circles that maintain public infrastructure with pre, during and post-disaster funds through stake holder consultations.
- Recommend improvements to the existing disbursement system, with more transparency and accountability for effective and efficient fund utilization to balance concerns of policy makers', public and donors.
- The study will enable the State to understand the strengths and challenges of its institutional architecture and develop laws, policies, organizations, processes and programs to improve its cross-sectoral response to climate change and disaster management.

#### Expected outcomes of Component 4:

- 1) Dedicated implementation strategy with constructive and transparent collaborative approach between the ministry of finance and state/district/revenue circles to effectively allocate, disburse, and monitor financing instruments for preparedness, recovery, and reconstruction, as well as resilience.

- 2) Revamped fund mobilization system, to leverage cross-sectoral response with enhanced accountability, transparency, and participation for efficient and effective fund mobilization to balance concerns of policy makers', public and donors.

## E. Project Location and Details

The project is proposed in the State of Assam only. The Consultancy shall provide full-time services through field input i.e., from a project office in Guwahati to be established/arranged by the consultant. The experts and support staff shall be extensively making field visits (project activity specific sites, offices etc.) as per the requirement of the project to achieve the project objectives, outcomes, and milestones.

### Duration of assignment:

*The duration of the assignment shall be **12 months** from the effective date of contract.*

## F. Deliverables and Assignment Duration

The primary output from the diagnostic study will be a comprehensive report consisting of:

- Multi-hazard risk profile and the Catastrophic (CAT) Risk Model for Assam
- Summary of Public Financial Management components
- Strategy for fund requirement (pre, during and post) for each hazard separately
- Implementation strategy between the ministry of finance and state/district/revenue Circles
- Revamped disbursement system

The following are the anticipated and indicative list of assignment deliverables (Table 1).

**Table 1: List of Indicative Deliverables**

S. No	Deliverable	Tentative Outer Timeline	Content/specific Requirements	Subject to
1)	Inception Report	Two weeks from effective date of contract	*Inception Report with framework of analysis, methodology, tools/ events. *Roadmap and timeline for stakeholder consultations and preparation of disaster risk finance strategy	Acceptance of ASDMA / FREMAA / World Bank
2)	Mid Term Progress Report	Six months from effective date of contract	*Multi-hazard risk profile *Catastrophic (CAT) Risk Model	Acceptance of ASDMA / FREMAA / World Bank

3)	First-Draft Report	Nine months from effective date of contract	*First Draft Assessment Report with strategy for fund requirement, Implementation strategy and revamped disbursement system *Stake holder consultation to present first draft report	Acceptance of ASDMA / FREMAA / World Bank
4)	Final Report	Twelve months from effective date of contract	*Stakeholder consultations summary reports *Second-Draft Assessment Report with Reform Strategy and Action Plan with timelines and resource requirements. *Validation Workshop with all stakeholders *Final Assessment Report with risk finance strategy (incorporating comments from validation workshop) (20%)	Acceptance of ASDMA / FREMAA / World Bank

**Note- In addition, operational and instructional manuals and special reports as may be reasonably required by the CEO, ASDMA, shall have to be prepared by the consultants.**

**Quality Assurance**

The Consultant, with final sign off from FREMAA / ASDMA / World Bank, will be responsible for quality and authenticity of all documents, reports, figures etc. forming part of the deliverables of this assignment.

**Reporting Formats**

The report shall contain/present the data, information, assumptions and corresponding justification, analysis, and conclusions and recommendations. All reports required by the ToR shall provide a clear presentation and include a table of contents and an executive summary. The main body of the text shall be organized in sections and focus on the findings and recommendations and their justification. Supporting data and analysis shall be included in the Annex which will be referenced as appropriate in the body of the text. All paragraphs in the executive summary, main text, and Annex(es), shall be numbered to facilitate reading across the report.

The report shall be illustrated as appropriate with such drawings, sketches, photographs, tables, graphs, and maps to aid comprehension and assimilation of their contents.



The consultants will need to submit a draft template for all reports as part of the inception report which will be reviewed by the ASDMA/PIU and WB for adequacy. The consultant will incorporate all suggestions and submit the deliverables accordingly.

## **G. Project Organization & Review of Performance, deliverables**

The three Implementing Agencies (IAs) under AIRBMP are FREMAA, WRD, and ASDMA. FREMAA is the nodal coordinating agency while WRD and ASDMA are the executing agencies for the AIRBMP program. A Project Management Unit (PMU) will be established in FREMAA to support the implementation of the program. The PIU in ASDMA will be headed by the CEO, ASDMA. The entire assignment shall be carried out under the overall guidance of the PIU/ASDMA, and World Bank. At all steps, the Consultant will be required to closely engage and seek inputs from the Client, Bank team and other consultants hired by Client/World Bank. Team Leader will lead & report to the CEO/Engineer of PIU in ASDMA. He/ she will work closely with the PIU team, and core task team members (local and international) from the World Bank. He/she will lead and be responsible for the overall delivery and performance of this assignment.

The Consultant will need to organize the visits/meetings for data collection and stakeholder consultations on their own and provide coordination support for arranging any monthly/quarterly review meetings for specific projects. FREMAA's/Bank's task team may join some of the consultation meetings.

A Technical review committee headed by the CEO, ASDMA or any authorized representative and comprising of members of stakeholder departments including State Finance Department, Line Departments etc. will carry out the review of all the draft/final reports/Manuals and provide comments which will be shared with the consultant for incorporation in the final manuals/reports appropriately, along with any comments/suggestions from the World Bank.

## **H. Ownership and Data Confidentiality Clause**

The ownership of the raw data collected by the Consultant during the course of the study and the deliverables including documents, processed data, reports etc. will rest with the client. The Consultant will keep the data and work products confidential and will share them only with the express permission of the client.

## **I. Support to be provided by ASDMA**

Relevant/ available data from the Govt. Agencies/ Depts. will be provided to the Consultant on request. For this purpose, the Consultant will have to co-ordinate with the concerned Govt. agency/ Depts. for obtaining data in the required format. ASDMA will be facilitating acquisition of data from Govt. agencies.

## J. List of key positions and their roles and responsibilities

The proposed type of contract is Lump-sum, and the Consultant are to make requisite analysis to determine the inputs of the experts listed below. Consultants financial quote shall be considered final and shall be deemed all components of the assignment is included and considered.

The list of personnel below is minimum required proposed to indicate the extent of requirement to prospective agencies. The assignment being in lump-sum mode, consultants are free to engage extra personnel at their own cost.

**Table 2: List of expert positions, their key qualification and experience**

<b><u>Key Experts</u></b>				
<b>Sr. No.</b>	<b>Expert</b>	<b>Minimum Competency Requirement</b>	<b>National/ International</b>	<b>Person-Month (indicative)</b>
1)	Team Leader	Post-graduation, in relevant area with at least 20 years of experience in areas related to Disaster Risk assessment and financing and Public Finance Management (preferred but optional).	International	12
2)	Senior Economist cum Insurance Policy Expert	Post-graduation in Economics, statistics or equivalent preferably PhD in Economics with at least 15 years of experience in the field of planning & financial tools assessment, resource mobilization, public finance management.	National	10
3)	Climate Change/ Disaster Management Expert	Post-graduation in finance/ commerce/ economics/engineering/ natural hazard science or equivalent with at least 15 years of experience in the field of disaster mitigation and response, vulnerability assessment, emergency response, damage assessment caused due to natural hazard, public finance management.	National	10
4)	Engineering Specialist	Post-graduation in Civil/ Structural/ Seismic/ Earthquake Engineering or equivalent with at least 10 years of experience in Disaster related field.	National	8
5)	Hazard Vulnerability	(Post-graduation in fields related to natural hazards with at least 10 years of experience	National	6

	Specialist	in vulnerability assessment, damage assessment caused due to natural hazards)		
6)	Actuarial/ Insurance Expert	(Post-graduation in finance/ commerce/ economics/ actuarial science or equivalent with at least 7 years of experience in the field of insurance modeling, actuarial analysis, probabilistic risk modeling, public finance management)	National	4
7)	Public Financial Management Expert	Post-graduation, with at least 10 years of experience in areas related to Public Finance Management and Governance (planning & policy assessment, resource mobilization, transparency, and accountability)	National	6 months

#### **Non-Key Experts/Support Staff**

<b>Sr. No.</b>	<b>Non-Key Expert</b>	<b>Minimum Competency Requirement</b>	<b>National/ International</b>	<b>Person-Month (indicative)</b>
1)	Liaison Personnel	Graduate in any field with at least 7 years of experience in stakeholder liaison and consultations. Experience in EAP projects shall be given an added preference.	National	6
2)	Ground Personnel cum Data Collector	Graduate in any field with at least 3 years of experience in ground data collection, stakeholder, and community engagements. Experience in EAP projects shall be given an added preference	National	5 Persons X 8 Months = 40

#### **References**

- a) Assam State Disaster Management Plan, 2022.
- b) Atamuratova,Sevara; Boudreau,Laura Elizabeth; Clarke,Daniel Jonathan; Mahul,Olivier; Signer, Benedikt Lukas; White,Emily Jennifer; Yi,Hannah Joy (2014). Financial protection against natural disasters: from products to comprehensive strategies - an operational framework for disaster risk financing and insurance. Washington, D.C.: World Bank Group.
- c) [http://documents.worldbank.org/curated/en/523011468129274796/Financial-protection-against-natural-disasters-from-products-to-comprehensive-strategies-an-operational-framework-for-disaster-risk-financing-and-insurance.](http://documents.worldbank.org/curated/en/523011468129274796/Financial-protection-against-natural-disasters-from-products-to-comprehensive-strategies-an-operational-framework-for-disaster-risk-financing-and-insurance)

- d) Disaster Risk Assessment and Risk Financing: A G20 / OECD Methodological Framework.
- e) <https://www.oecd.org/gov/risk/g20oecdframeworkfordisasterriskmanagement.htm>
- f) World Bank, 2017. Disaster Risk Finance: A Primer Core Principles and Operational Framework
- g) World Bank, 2022. Disaster Resilient and Responsive Public Financial Management: An Assessment Tool