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CapaCITIES
LOW CARBON • CLIMATE RESILIENT • CITY DEVELOPMENT

Access to Climate Finance

A Trainer's Guidebook



Acknowledgement and Disclaimer

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Prepared by:

South Pole: Samiksha Dhingra, Subhabrata Haldar

Designed by:

Ridhi Jain

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Contact:

South Pole

1A & 1B, Block-B, Vatika First India Place, MG Road,
Sector 28, Gurugram, Haryana-122002, India
www.southpole.com



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01 Guidebook Overview, Objectives & Target Audience

The phenomenon of rapid urbanization is currently placing an unprecedented and massive strain on essential civic services, such as water supply, sanitation, and energy grids. Simultaneously, this expansion is significantly increasing the vulnerability of urban centers to extreme climate events, including flash floods, prolonged heatwaves, and rising sea levels. Globally, cities are the epicenters of the climate crisis, contributing to approximately 75% of total carbon emissions. In the Indian context, the situation is even more acute: urban centers generate an estimated 87% of national greenhouse gas (GHG) emissions. This concentration of emissions and population puts trillions of dollars in critical infrastructure assets at immediate risk of failure or destruction due to climate-related disasters.

To achieve national net-zero ambitions, mobilizing external regional, national, and international climate finance is paramount. Therefore, as part of the CapaCITIES project, this guidebook builds upon strategies for accessing climate finance using bankable project structuring, drawing on a decade of experience and technical expertise developed under the program.

1.1 | Purpose and How to Use This Guidebook

This comprehensive Guidebook serves as a technical operational manual specifically engineered for regional training institutes and urban governance professionals. Its primary mandate is to provide master trainers with the specialized pedagogical frameworks i.e. the tools and methods for teaching and the structural methodologies required to strengthen the internal capacity of municipal administrations. The goal is to move beyond mere project planning and empower officials to design infrastructure that is “bankable,” meaning it is structured in a way that is attractive and secure enough for professional investors while remaining fundamentally climate resilient.

Successfully navigating the transition from conventional municipal budgeting that often relies on limited public funds, to sophisticated climate finance architectures requires a deep level of targeted expertise. Such architectures involve complex combinations of private investment, international grants, and specialized loans. This guidebook outlines rigorous facilitation pathways to empower urban decision-makers to bridge the gap between high-level environmental goals and practical, market-ready investment pipelines. By following these steps, cities can convert their climate ambitions into real-world projects that are ready to receive and manage large-scale investment.

Core Learning Goals:

- Differentiate between climate finance, green finance, and sustainable finance.
- Navigate the diverse landscape of public, private, national, and international urban finance sources.
- Apply structured frameworks at each stage of the project lifecycle to embed bankability.
- Apportion project risks appropriately between public and private entities.



1.2 | Target Audience Profile

Traditional city projects are often structured in departmental isolation, which poses a significant barrier to climate capital deployment. This guidebook acts as a shared cross-functional playbook for trainers and urban decision-makers. Primary workshop participants and users include:

- **Municipal Commissioners & Deputy Commissioners:** Responsible for strategic administrative approvals, political alignment, and tariff setting.
- **City Engineers & Nodal Departments:** Tasked with technical baseline evaluations, structural design hardening, and contract enforcement.
- **Financial Advisors & Chief Accountants:** Responsible for budgetary allocation, debt-service planning, and multi-year cash flow validation.
- **Regional Training Nodal Officers:** Dedicated to duplicating this curriculum across secondary and tertiary tiers of governance.

1.3 | The Indian Urban Investment Gap

India sits at the center of this urban transition. The United Nations estimates that by 2050, India's urban population will double from 461 million to 877 million citizens¹—representing the largest absolute urban population expansion across Asian nations. This demographic shift strains existing municipal infrastructure, causing acute vulnerabilities.

INDIA'S URBAN CLIMATE RISK PROFILE

National GHG Emissions Contribution from Urban Centers: 87%
Total Urban Asset Value Exposed to Climate Disasters: USD 2 TN
Average Annual Infrastructure Investment Requirement: INR 2.3–2.5TL

To align with the national goals of reaching net-zero emissions by 2070, Indian urban centers must deploy smart, climate-resilient configurations. High-powered expert committees estimate a macro-investment requirement of INR 91 trillion², while corresponding McKinsey Global Institute studies project an infrastructure need of INR 85 trillion³. The National Infrastructure Pipeline (NIP) highlights an investment target of INR 19 trillion for urban infrastructure between 2021 and 2025, translating to an annual funding run-rate of INR 2.3 to 2.5 trillion over the coming decade⁴. Given the constraints of public budgets, cities must attract private finance by establishing structured pipelines of bankable projects.

1 <https://www.un.org/uk/desa/68-world-population-projected-live-urban-areas-2050-says-un>

2 https://niti.gov.in/sites/default/files/2026-02/Scenarios-Towards-Viksit-Bharat-and-Net-Zero-Financing-Needs-Vol9_0.pdf

3 <https://www.mckinsey.com/~/media/mckinsey/email/onpoint/2022/11/2022-11-14a.html>

4 [https://www.pppinindia.gov.in/report/Report-of-the%20Task-Force-National-Infrastructure-Pipeline-\(NIP\)-%20volume-ii_1684908946.pdf](https://www.pppinindia.gov.in/report/Report-of-the%20Task-Force-National-Infrastructure-Pipeline-(NIP)-%20volume-ii_1684908946.pdf)



02 THE GLOBAL & NATIONAL CLIMATE FINANCE LANDSCAPE

2.1 | Understanding climate finance

Climate finance in general is a subject with many facets. However, it is different from sustainable finance or green finance. While engaging in the topic, one might confuse climate finance to green finance, however, there is a significant difference between the two. Climate finance is just one component of the larger landscape of sustainable finance in the context of financing the agenda 2030 and the Sustainable Development Goals (SDGs) (GIZ, 2021). Sustainable finance covers multiple policies and institutional arrangements to attract private sector investments to address all the aspects of sustainable development namely environmental, social, economic and governance. Now, under the environmental aspect of climate finance, initiatives that focus on investments related to mitigation and adaptation of climate change are referred to as 'climate finance'. Figure 1 below depicts how climate finance is a part of sustainable finance. Now, if the finance initiatives are only focused to attract investment for climate change activities; such a kind of finance is known as Low Carbon Finance.

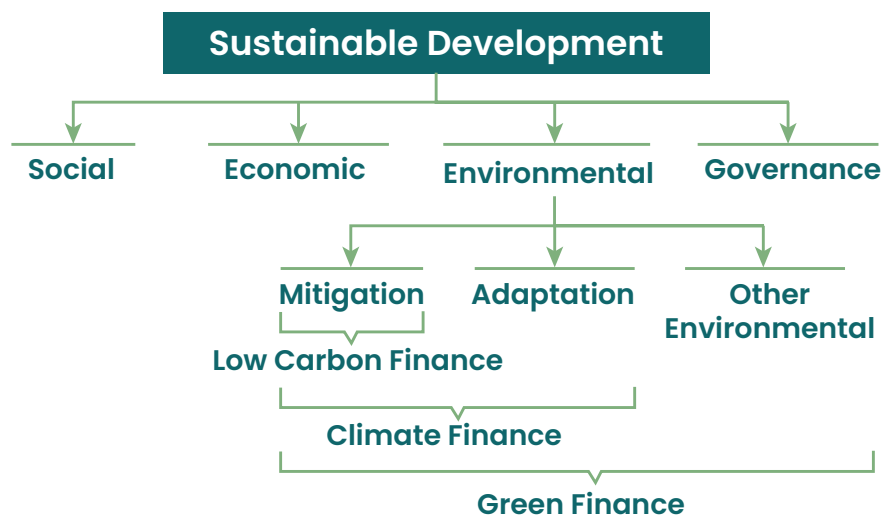


Figure 1: Climate finance as part of sustainable finance

Further, urban climate finance comprises resources directed toward activities that limit city-induced GHG emissions (Mitigation) or address climate-related risks to build systemic resilience (Adaptation).

2.2 | Public Sources of Finance

Public streams include performance-based grants, government missions, and concessional loans from specialized banking institutions:

- **Conditional Transfers:** The Fifteenth Finance Commission (FFC) provides dedicated grants tied to performance metrics in air quality, water recycling, and solid waste management.



- **National Missions & Schemes:** Central schemes under the National Action Plan on Climate Change (NAPCC)—such as AMRUT 2.0, Swachh Bharat Mission–Urban, and the Smart Cities Mission—provide grant funding for climate-resilient setups.
- **Specialized Financial Institutions (SFIs):** Agencies like HUDCO, IREDA, EESL, and NABARD extend concessional loans, equity, or specialized Energy Service Company (ESCO) financing mechanisms.
- **International Development Finance Institutions (DFIs) & Climate Funds:** Multilateral and bilateral organizations (e.g., World Bank, ADB, GCF, GEF) supply sovereign-backed loans, project preparation grants, and technical assistance.

2.3 | Private Sources of Finance

Unlocking commercial capital requires shifting project structures toward market-rate viability:

- **Green Municipal Bonds:** Earmarked capital instruments designed for long-term clean transit, waste-to-energy, or energy efficiency interventions. Example: Ghaziabad Municipal Corporation successfully raised INR 150 crore via credit enhancements.
- **Voluntary Carbon & Plastic Markets:** Monetizing verified emissions reductions (VCUs) or plastic recycling achievements to create secondary operational revenue streams. Example: Indore Municipal Corporation generated localized financing by selling credits on the Verra registry.
- **Impact Funds & Commercial Banking:** Specialized private equity investments focusing on projects targeting clear environmental and social co-benefits.

2.4 | Structural Bottlenecks in Accessing Finance

Trainers must ensure participants understand why capital is not flowing into otherwise viable municipal concepts:

A. Capacity Constraints

Municipalities show limited internal capability to transition raw engineering ideas into bankable financial models. There is a lack of understanding regarding green financial instruments, carbon valuation assets, and the complex risk-allocation legal frameworks required by international lenders.

B. Institutional Constraints

The majority of Urban Local Bodies (ULBs) maintain low independent credit ratings. Furthermore, there is systemic political resistance to introducing realistic consumer user charges to recover cost outlays for critical water, sanitation, and waste management services.

C. Market Constraints

Domestic municipal bond markets remain thin and lack depth. Commercial lenders face high transaction costs when performing due diligence on small-scale municipal projects, leading them to prefer large-scale utility projects.



03 Understanding Bankability

3.1 | Traditional vs. Climate-Aware Bankability

Traditional commercial bankability focuses strictly on direct financial returns generated by user fees or commercial tariffs. In contrast, bankability for low-carbon, climate-resilient infrastructure evaluates broader economic value, long-term operational savings, risk reduction, and non-market social benefits.

Traditional Bankability:

[Project CapEx + OpEx] → Driven strictly by → [Direct User Revenues]

Climate-Related Bankability:

[Project CapEx + OpEx] → Balanced via blended models → [User Revenues + Energy Savings + Carbon Credits + Avoided Loss Costs]

3.2 | The Three-Tier Classification Matrix

Trainers should guide participants to categorize municipal concepts into one of three structural buckets to determine their appropriate financing mechanisms:

1. Totally Bankable Projects

Projects that generate sufficient direct commercial revenues to fully cover capital investment and operational expenses while meeting market rate-of-return requirements.

- **Examples:** Utility-scale grid-tied solar arrays, commercial waste-to-energy facilities with power-purchase agreements, and smart metered water networks.
- **Primary Instruments:** Commercial loans, green bonds, private equity, and municipal corporate bonds.

2. Partially Bankable Projects

Projects where direct revenues are insufficient to meet market commercial returns on their own. These are structured into bankable models by blending public subsidies, Viability Gap Funding (VGF), or national mission allocations.

- **Examples:** Bulk organic waste processing facilities, energy-efficient street lighting upgrades, and public electric bus procurement programs.
- **Primary Instruments:** Public-Private Partnerships (PPPs), concessional blended loans, and national grant matches (e.g., AMRUT schemes).

3. Fundable Projects

Projects that generate little to no direct commercial revenues, but create significant public value via climate adaptation, flood risk reduction, or environmental protection.

- **Examples:** Sea walls, city-wide storm-water drainage improvements, urban mangrove restoration, and heat-resilient public housing upgrades.
- **Primary Instruments:** Concessional international grants, direct sovereign budgetary fills, and specialized climate adaptation funds.



04 The Approach

The designing of an infrastructure project would broadly be organized into 2 stages – project concept and pre-feasibility, feasibility and structuring leading to implementation stage. At each stage, the city would need specific capacity to make decisions and embed low carbon, climate resilience and bankability considerations into the project development process. Figure 2 shows the tools presented at various stages of project preparation:

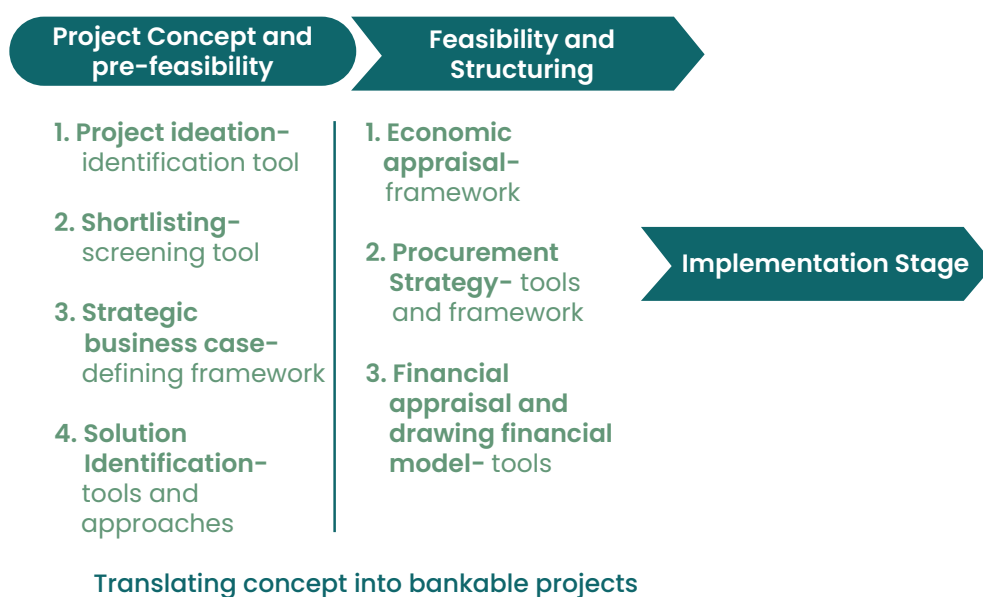


Figure 2: Stages of bankable project preparation

4.1 | STAGE I: PROJECT CONCEPT AND PRE-FEASIBILITY

4.1.1 The Project Idea Note (PIN) Framework

The formal project preparation lifecycle begins with the Project Idea Note (PIN). The PIN converts unstructured concepts into a standardized profile that records early metrics across technical, financial, and climate dimensions.

S. No.	PIN Parameter	Core Content Requirement & Analytical Target
1	Title of Proposed Project	Descriptive operational name identifying technology and city location.
2	Sector Classification	Primary sector (e.g., Renewable Energy, Solid Waste, Sustainable Mobility).
3	Type of Project	Status check: Is it part of the City Climate Action Plan, or an ad-hoc requirement?



4	Rationale & Baselines	Detailed description of the current baseline situation versus the post-intervention targets.
5	SDG Alignment Matrix	Explicit listing of Sustainable Development Goals directly addressed by the project.
6	NDC Direct Linkages	Direct connection to India's Nationally Determined Contributions (e.g., emission intensity cuts).
7	CSCAF Fitment	Specific indicator reference within the Climate Smart City Assessment Framework.
8	Strategic Urban Plan Linkage	Verification of alignment with City Development Plans (CDPs) or Master Plans.
9	Required Technical Expertise	Early assessment of external consulting or engineering needs.
10	Climate Mitigation Potential	Estimated annual reductions in metric tons of \$CO_2\$ equivalent (\$tCO_2e\$).
11	Climate Adaptation Potential	Quantifiable metrics for climate resilience or reduction in community vulnerability.
12	Implementation Horizon	Step-by-step development schedule from initial engineering to final commissioning.
13	Scalability / Replication	Potential to scale up or replicate the project across other city zones.
14	Implementation Mode	Proposed delivery vehicle (e.g., municipal department, special purpose vehicle, PPP).
15	Financial Architecture	Envisioned combination of equity budgets, debt, and national subsidies.

4.1.2 The 4-Tier Project Screening Funnel

Trainers must instruct municipal screening committees to evaluate incoming PIN submissions using this multi-criteria funnel:



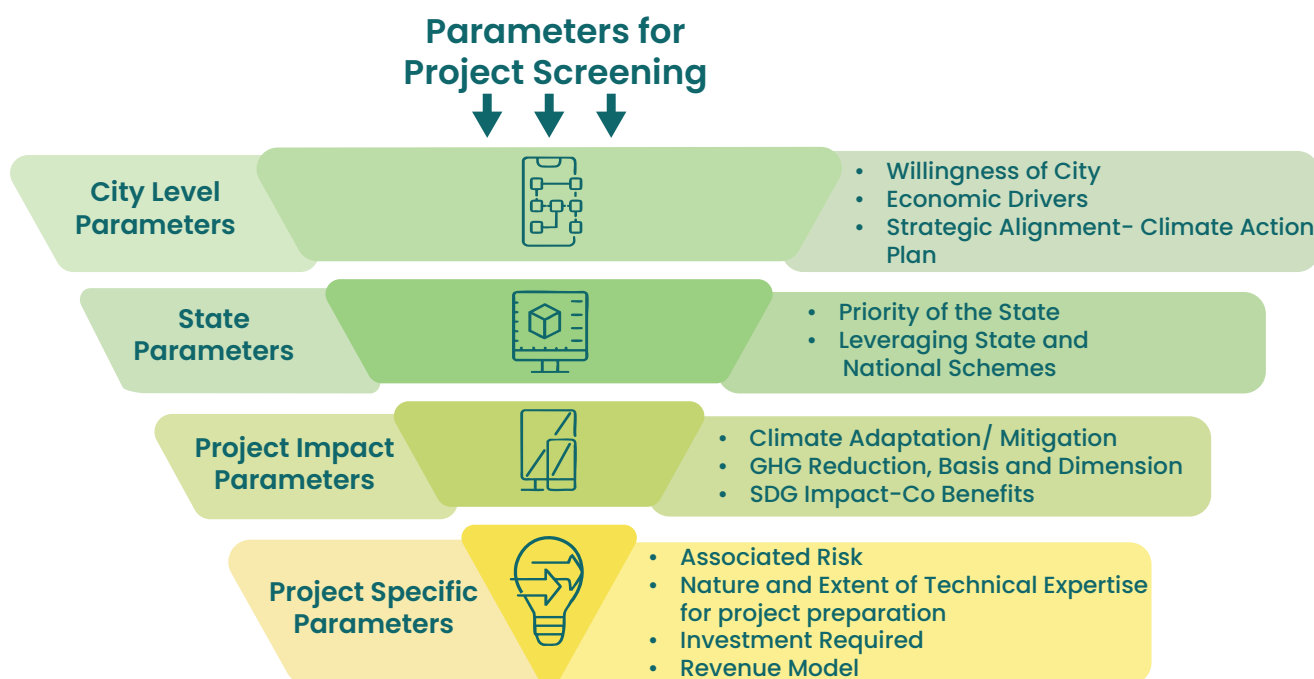


Figure 3: Project screening structure

Tier 1: City-Level Parameters

- **Administrative Willingness:** Assessment of the political will of municipal leadership to execute the project and maintain long-term commitments.
- **Economic Alignment:** Verification of whether the project supports or enhances the city's key economic drivers.

Tier 2: State and National Parameters

- **Scheme Leverage:** Check for alignment with national priorities or state policies to maximize capital subsidy capture.

Tier 3: Environmental and Social Impact Parameters

- **Mitigation / Adaptation Metrics:** Quantification of direct emissions reductions or measurable tracking of reduced urban climate risk.

Tier 4: Project-Specific Operational Parameters

- **Technology Maturity:** Evaluation of tech selection—proven systems versus unscaled, unproven iterations.
- **Cost Recovery Potential:** High-level review of the project's ability to generate direct revenue or create cost savings.



4.2 | STAGE II: TECHNICAL FEASIBILITY, ECONOMIC APPRAISAL, & STRUCTURING

4.2.1 Defining the Strategic Business Case

Once a project passes initial screening, the city must outline its strategic business case by setting objective parameters across five clear criteria:

- **SMART Objectives:** Specific, Measurable, Attainable, Result-oriented, and Time-bound service targets.
- **Baseline Map:** Comprehensive capture of current operational costs, asset conditions, and throughput gaps.
- **Future Projections:** Climate risk projections paired with expected population and demand growth cycles.
- **Benefit Framework:** Categorization of direct savings, revenues, and non-market social benefits.
- **Risk Identification:** Documentation of business, service delivery, and external systematic climate vulnerabilities.

Furthermore, at this stage the key service requirement along with benefits, risk and dependencies of the project are defined. This stage can also be referred to as the “project concept” stage and is very important to identify the variables of the projects which make it suitable for the right kind of funding or funding instrument.

4.2.2 The Urban Living Lab (ULL) Sandbox Approach

To refine solutions before committing large-scale capital, cities can deploy the Project Urban Living Lab (PULL) Sandbox Approach. This framework sets up an Innovation Secretariat that coordinates demand and supply requirements:

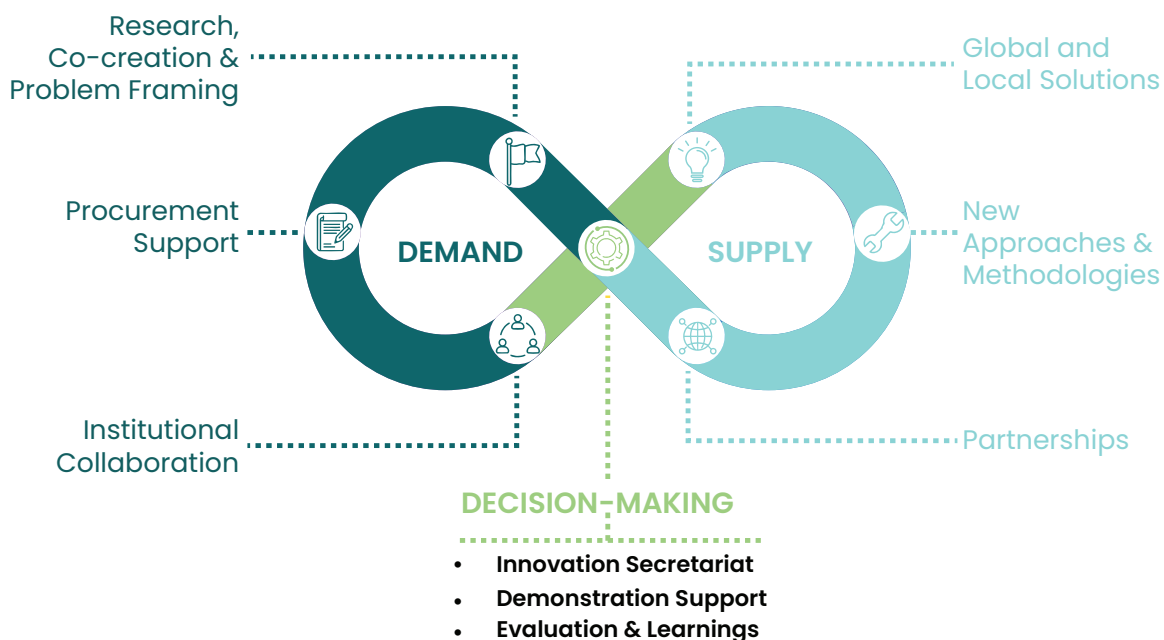


Figure 4: Urban Living Lab Sandbox Approach



05 Commercial Procurement & Risk Allocation

5.1 | The DBFO Risk Sharing Principles

A key element of project bankability is the structured allocation of risk across the Design, Build, Funding, and Operational (DBFO) spectrum. Lenders will not deploy capital if risks are left ambiguous or assigned incorrectly.

Risk Category	Primary Custodian	Practical Risk Mitigation Mechanism
Design Risk	Private Contractor	Total responsibility for design errors transferred via performance-linked contracts.
Construction Risk	Private Contractor	Delays or cost overruns are absorbed via fixed-price contracts and performance bonds.
Technology Obsolescence	Private Contractor	Vendor assumes upgrading liability within long-term O&M schedules.
Demand / Volume Risk	Shared Structure	Balanced using minimum guaranteed purchase thresholds or baseline tipping fees.
Macro Policy Risk	Public Entity	Protection against change-in-law events via sovereign guarantees.
Climate Hazard Risk	Shared Structure	Mitigated through commercial catastrophe insurance layered with public relief lines.



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