Climate Resilience for All

Tailwind

Adaptation Finance: A Primer for Practitioners

Essential components of climate adaptation and adaptation finance

February 2025

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About us

Climate Resilience for All supports the health and livelihoods of women and vulnerable communities facing extreme heat. Leaning on trusted partnerships and science, respecting local knowledge, acting with urgency, and using strategic communications, we know that financing and funding for adaptation is critical for lasting solutions that reduce the impacts of extreme heat and build opportunities and choice for women everywhere.

Tailwind

Tailwind is an investment firm and ecosystem builder focused on accelerating the development and deployment of adaptation and resilience solutions. We believe technological innovation, used wisely, can play a critical role in enabling climate resilience. We invest in early-stage B2B adaptation tech startups and provide strategic advisory services to investors, funders and corporations.

With thanks to the **ClimateWorks Foundation** for their support of this work.

Foreword

Adaptation finance is needed now more than ever. This deck presents potential sources of financing for climate adaptation and resilience projects as the world gets hotter, wetter, drier, and generally more vulnerable to the deadly and costly shocks and stresses of climate change.

We present an expansive vision of the landscape and levers of climate adaptation finance, including lesser known or emerging funding mechanisms like Disaster Risk Finance and Loss & Damage, and highlighting where we think the private sector could play a bigger role. Our goal is to empower practitioners to use the full spectrum of capital needed to reach people and communities most vulnerable to climate change.

Every community, institution, company, and government will need to consider how to combine different sources of capital together to fund and finance their own protection through adaptation interventions and projects that prevent and reduce the impacts of inevitable climate-driven disasters. We hope this Primer will accelerate the funding of adaptation projects in the face of increase climate threats.

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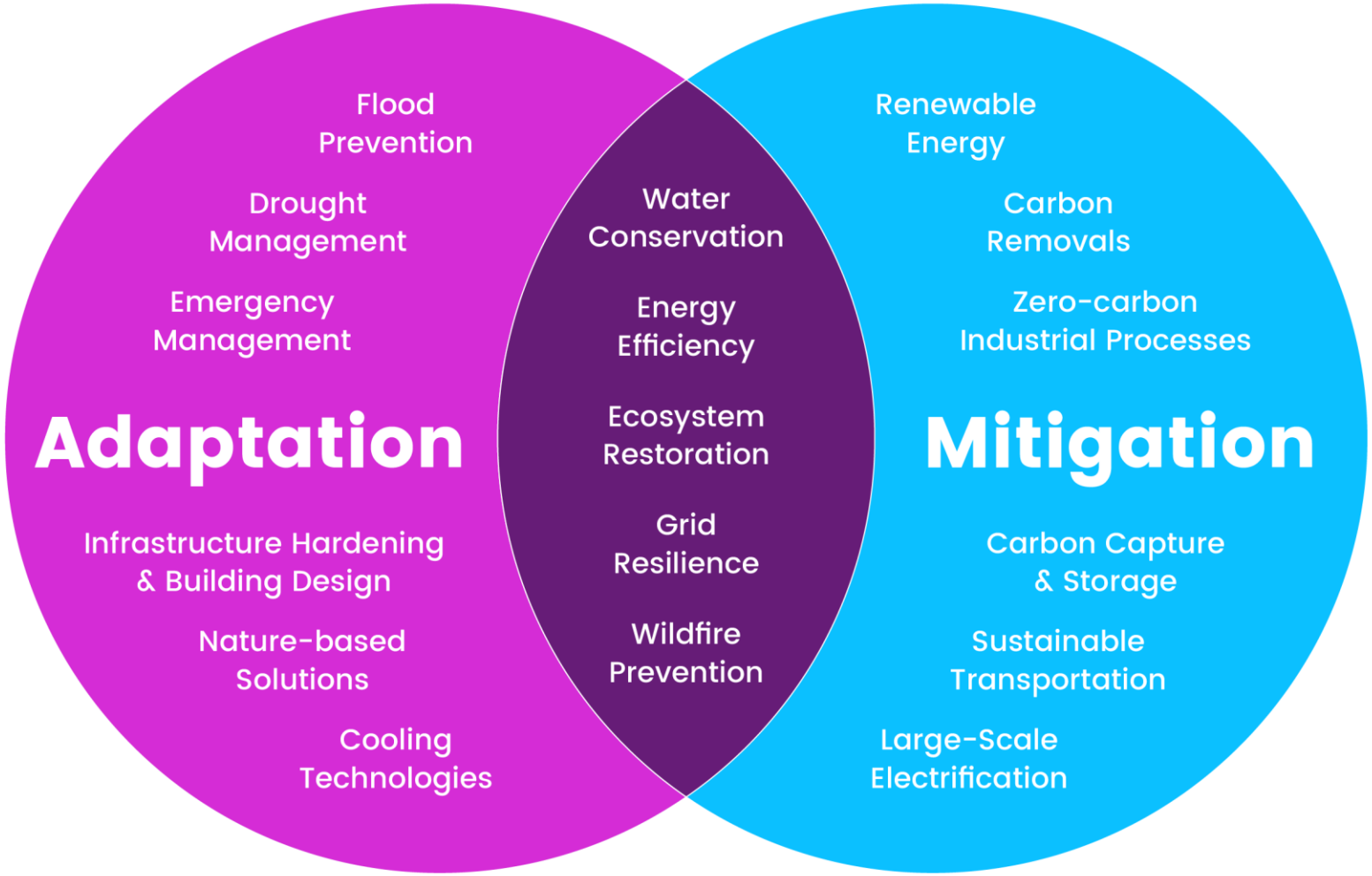
Adaptation & Resilience

Key Concepts and Definitions

Climate adaptation and mitigation are both required to address climate impacts

Adaptation is the process of adjusting to actual or expected climate change and its effects. Climate adaptation seeks to minimize harm from climate change impacts and promote economic, social and natural ecosystems' co-benefits. (adapted from IPCC 2022)



Mitigation encompasses all human interventions to reduce the emission of greenhouse gases or improve greenhouse gas sinks to prevent the worst impacts of climate change. (IPCC 2022)

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Adaptation and resilience are complementary concepts, we use both terms.

Resilience is the ability of a human or natural system to withstand the impacts of exogenous shocks and to cope with or rebound from them.

The term describes the capacity of a system to withstand multiple shocks and stressors (socioeconomic, market-related, climate-related).

Resilience is associated with system-wide changes, including a range of solutions to enhance social, human, natural, physical and financial capacities (LSE 2022).

Climate resilience is strengthening a system to withstand current or expected climate-related shocks or stressors.

Examples of climate-related shocks and stressors:

- Extreme weather events and climate-related natural disasters (e.g. drought, wildfires, floods)
- Changes in temperature and precipitation patterns

Examples of other shocks and stressors:

- Other natural disasters (e.g. earthquakes)
- Economic or political crisis
- Conflicts and violence

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In this deck, we use the terms Adaptation and Resilience in tandem ("A&R"). We use "adaptation finance" as an all-encompassing term for both A&R.

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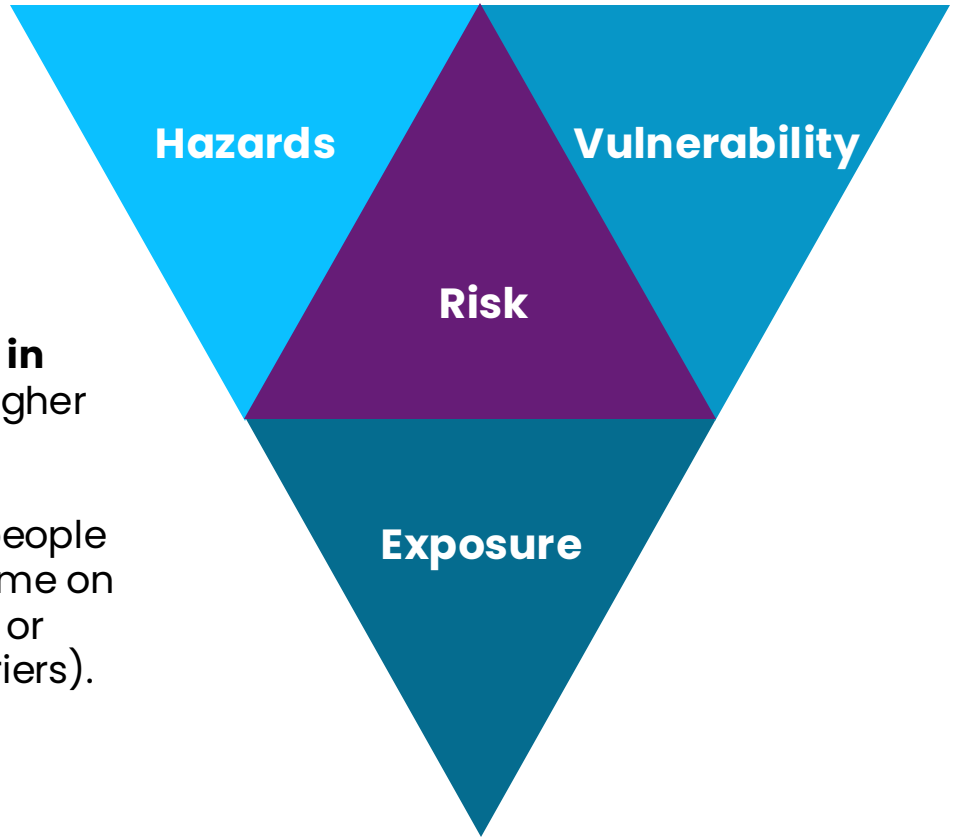
The climate community defines risk as the intersection of hazards, exposure and vulnerability

Climate hazards include extreme heat, floods, hurricanes, wildfires, water scarcity and other chronic or acute changes due to global warming.
Adaptation activities include wildfire or flood prevention.

Exposure: People, assets or ecosystems in harm's way. (e.g. coastal cities facing higher *exposure* to flood risk)

Adaptation activities include removing people and assets from harm's way (staying home on a hot day, relocating from the coastline) or protecting people and assets (flood barriers).



Vulnerability is a factor of Sensitivity and Adaptive Capacity.

Sensitivity: what makes a population, ecosystem or asset suffer more from a climate hazard (economic hardship, disenfranchised communities, fragile ecosystem, etc.).

Adaptive Capacity: what makes a population, ecosystem or asset better prepared or able to withstand or recover from climate hazards.

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We define adaptation and resilience (A&R) activities to include both interventions and solutions

Adaptation and resilience activities are the solutions (product or service) or enabling interventions (programs & projects) that *prepare for, prevent, respond to, or enable recovery* from climate shocks and stressors by:

Addressing systemic barriers to adaptation, including by removing information, technological, capacity and/or financial barriers to adaptation by others

AND /OR

Directly reducing material physical climate risks or their associated adverse impacts on other people, nature, physical assets or other economic activities

Enable to *prepare* and *prevent* physical climate risks by increasing the ability of people, nature, physical assets or businesses to understand climate-related risks and manage them with foresight

Enable to *respond* to physical climate risks by increasing the ability of people, nature, physical assets or businesses to cope and adjust to adverse conditions

Enable to *recover* from adverse physical climate impacts by increasing the ability of people, nature, physical assets or businesses to mitigate the adverse impacts of climate events and 'build-forward-better'

Source: adapted from GARI (2024)

A&R investments are required across many sectors of the economy

Mining
Construction
Manufacturing
Information Technologies
Insurance
Financial Services
Tourism

Employment & Livelihoods
Social Equity
Human Migrations & Resettlements
Government Operations
Disaster Risk Reduction (DRR)
Education, Information & Knowledge
Peace & Security
Cultural Heritage
Financial Inclusion

Buildings
Urban & Community Planning

Healthcare Services & Medical Facilities
Pharmaceuticals & Biotechnologies

Freshwater Ecosystems
Terrestrial Ecosystems
Marine Ecosystems

Crop Production
Animal Production
Forestry & Logging
Fishing & Aquaculture
Food Systems

Electricity Systems
Ground Transportation
Maritime Transportation
Air Transportation
ICT infrastructure

Water Infrastructure
Sanitation Infrastructure

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Source: Tailwind 2024

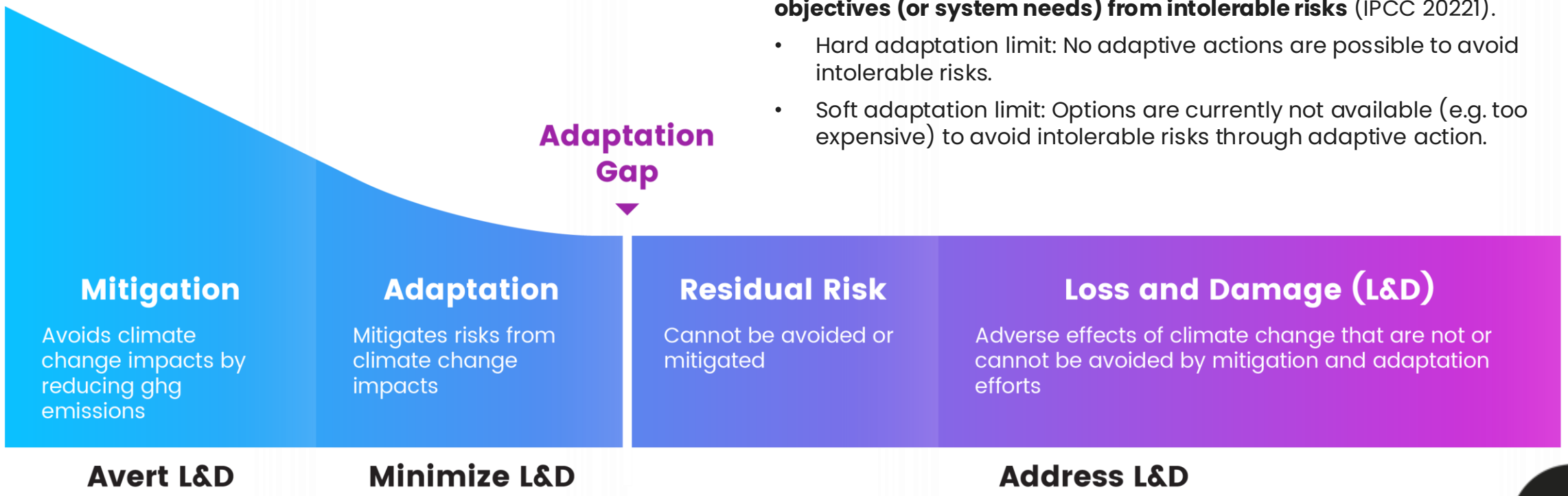
There are limits to adaptation – we will not be able to save everything.

The **Adaptation Gap** refers to **the difference between actually implemented adaptation and a societally set goal**, determined largely by preferences related to tolerated climate change impacts and reflecting resource limitations and competing priorities (UNEP 2014)

Adaptation Limits

The point at which adaptive actions cannot protect an actor's objectives (or system needs) from intolerable risks (IPCC 20221).

- Hard adaptation limit: No adaptive actions are possible to avoid intolerable risks.
- Soft adaptation limit: Options are currently not available (e.g. too expensive) to avoid intolerable risks through adaptive action.



Source: adapted from Richards (2022)

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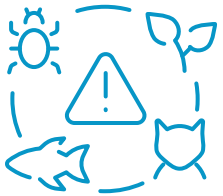
Practitioners need to be aware of maladaptation risk

Maladaptation refers to **adaptation efforts that may lead to increased vulnerability to climate impacts**, including activities that increase GHG emissions or diminish welfare, now or in the future. Maladaptation is usually an unintended consequence. (IPCC 2022)

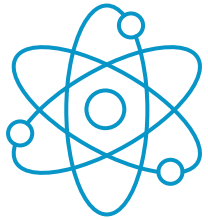
Maladaptation is defined by the presence of activities that:

Increase social vulnerability and/or cause unintended harm to humans



Increase climate-related impacts on ecosystems or ecosystem services

Worsen the present or future condition of marginalized groups like low-income households, ethnic minorities, and women



Inhibit deep and systemic change

Cause additional GHG emissions

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Why Adaptation Finance Falls Short of Global Needs

Moving Capital Flows Towards People

Adaptation finance encompasses public and private flows; but is fragmented and insufficient

We define adaptation finance as the financial flows that support adaptation and resilience activities, including activities that seek to prevent harm, to reduce or transfer risk, to recover from impacts, to compensate for loss and damage or to promote economic, social and natural ecosystems' co-benefits, across all sectors.

In its broadest acceptance, adaptation finance includes a wide range of capital flows with both **public and private capital** in **developing countries and industrialized economies**. It ranges from multi-million dollars infrastructure projects, to homeowners hardening their homes against hurricanes, to a farmer switching crops in response to water scarcity.

It includes **investments in new products or services,** where demand will rise as communities and businesses invest in their own climate resilience. It also includes risk transfer mechanisms, the most important of which is **insurance**.

Philanthropic capital can play critical roles in adaptation to fund charitable A&R activities in vulnerable communities or to catalyze and de-risk other sources of capital.

Adaptation is underfunded globally (IPCC 2023, UNEP 2024)**. Adaptation finance is also poorly tracked** outside of international public finance. Estimates for domestic public, philanthropic and private finance cited in this report are preliminary and may be undercounting existing flows.

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Adaptation finance in developing countries depends primarily on international public finance.

Developing Countries

Adaptation Finance in developing countries is **dominated by International public finance**.

Domestic investments are severely limited by countries' fiscal and economic capacity.

Private sector investments are also very limited due to the high risk and limited returns.

Insurance coverage is very low.

Households, small businesses, and smallholder farmers invest in their own resilience within their economic capacity.

Philanthropic capital Is limited and focused on meeting immediate humanitarian and development needs.

Industrialized Countries

Adaptation Finance in industrialized countries is **dominated by domestic public finance**, which is rapidly increasing in Europe and in the US.

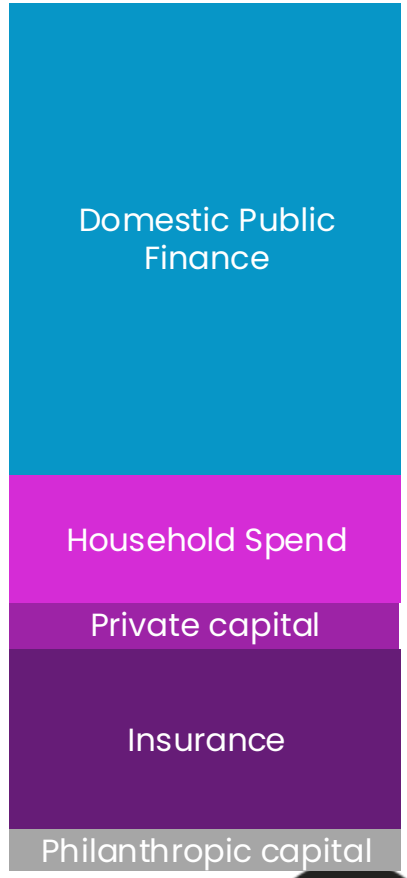
They do not receive international funds.

Private sector investments remain limited but are growing.

Households and small businesses are increasingly buying A&R products and services to protect their assets.

Insurance coverage more widespread and often a primary mean of economic resilience.

Philanthropic capital is very limited.



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Source: Illustrative diagram from the authors

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Public finance dwarfs private capital and finance flows

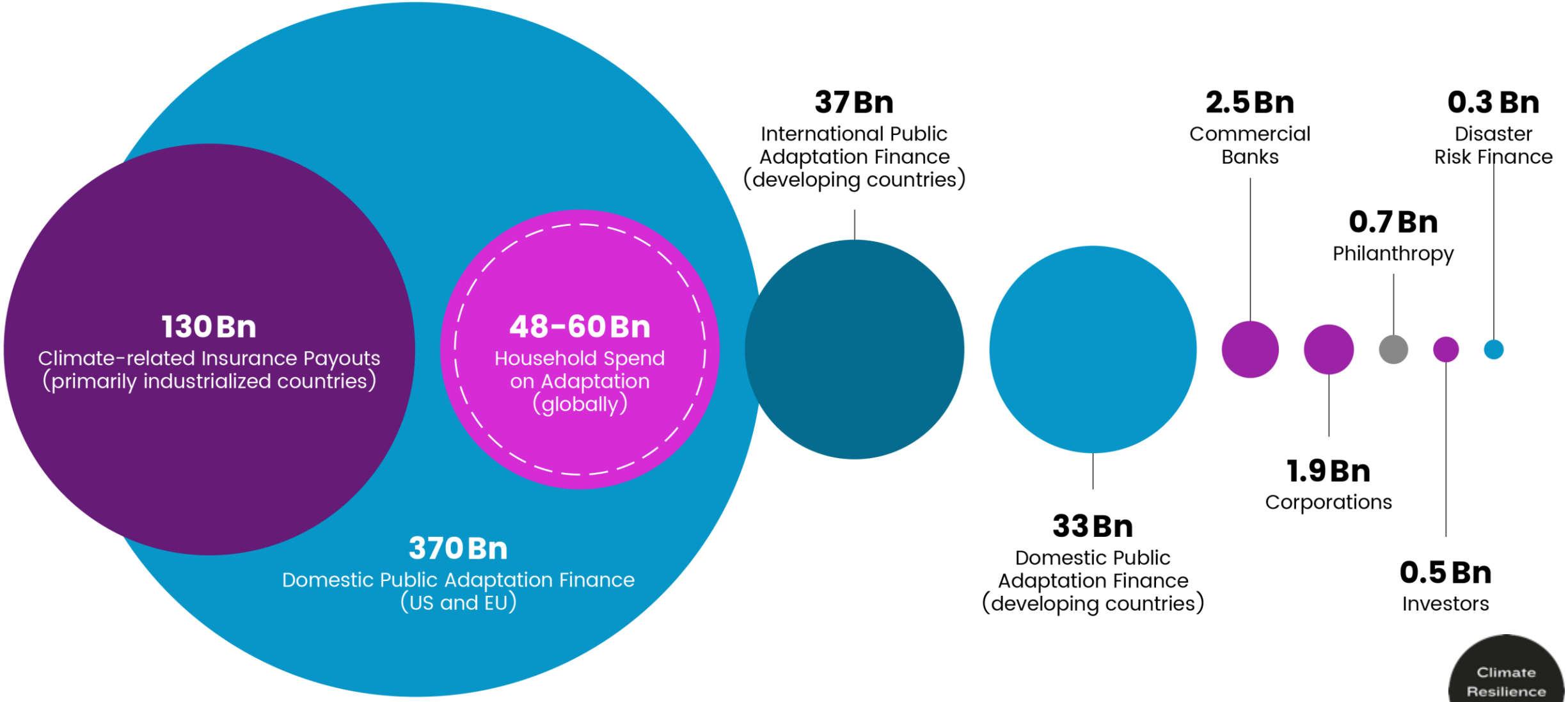

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Diagram from the authors. **Bubble size represents USD *at scale***.
Data sources: CPI 2024, AON, Tailwind, ClimateWorks.

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Adaptation finance is limited by resource constraints and misalignment between recipients and funders

Climate impacts continue to be perceived as too long term or uncertain to warrant immediate action, although this misconception is rapidly evolving in light of recurring climate-related disasters. **Limited access to actionable, locally-relevant climate data** can also hamper decision-making and limit financing opportunities.

The **lack of widely accepted definitions or metrics** for adaptation, and specifically, the limited guidance on the availability or effectiveness of adaptation can complicate decisions about what adaptation activities should be deployed and at what cost.

While the economic benefits of investing in adaptation and disaster prevention are well understood, **these benefits can be hard to monetize** in a way that attracts private investors. Hence, adaptation finance is dominated by public actors, with limited private investments.

The most exposed communities often have the least resources to finance adaptation activities. Generally, adaptation finance needs greatly exceed governments' financing capacity and often compete with other urgent socioeconomic priorities like housing or social welfare.

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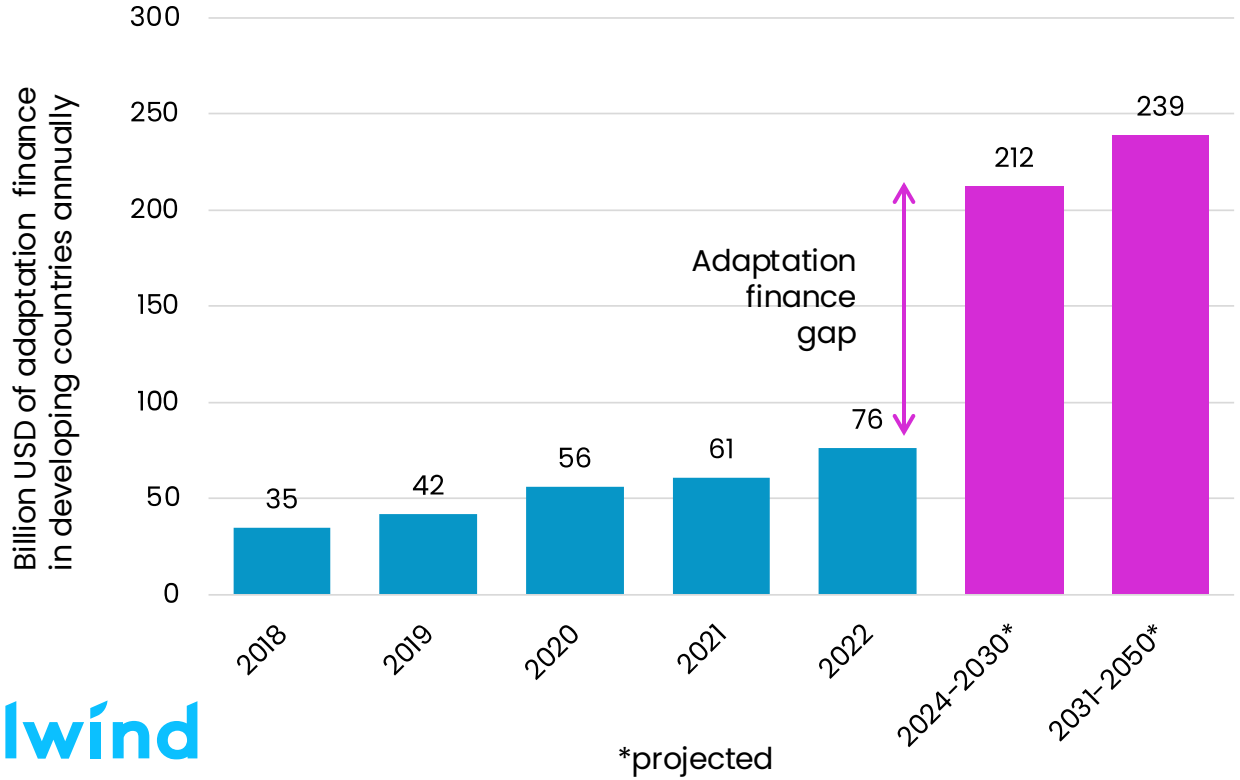
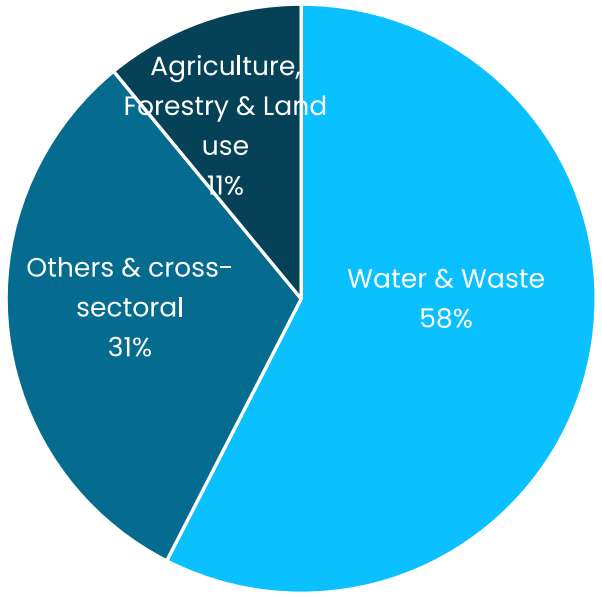
Adaptation finance in developing countries is severely underfunded relative to needs

The **adaptation finance gap is defined as the difference between the estimated costs of meeting a given adaptation target and the amount of finance available for adaptation in developing countries** (United Nations Environment Programme [UNEP] 2014).

While adaptation finance has more than doubled since 2018, it is still at **one third of volumes required in 2030** in developing and emerging markets. Only 19% of adaptation finance (USD 14.5Bn) goes to least developed countries, and 2% (USD1.5Bn) to Small Island Developing States, where the needs are the greatest. Even these figures may be a significant underestimate due to uncertain future climate impacts and the spiraling cost of inaction (CPI, 2024)





Data source for both charts: CPI 2024

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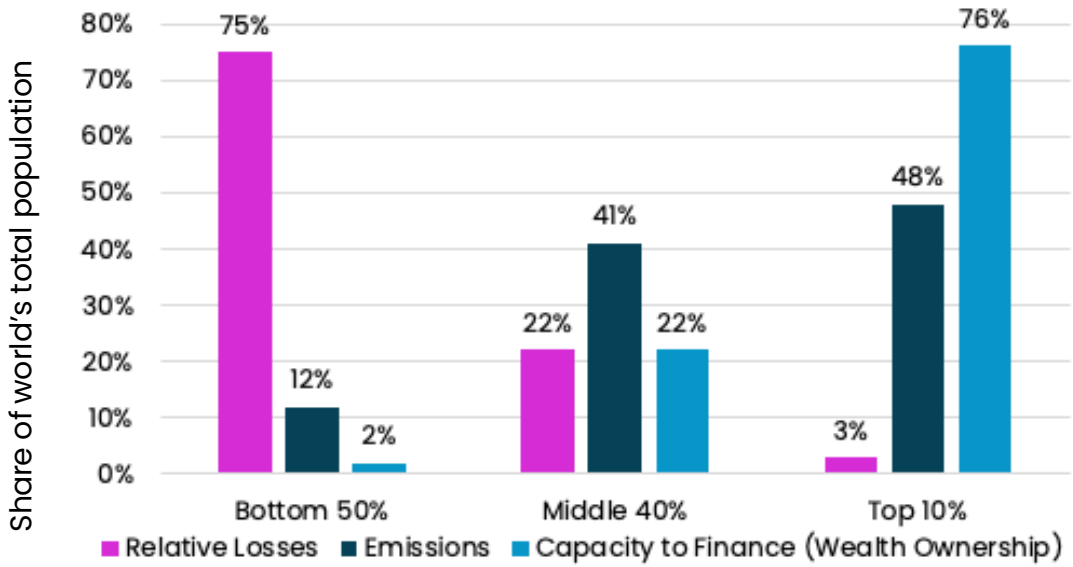
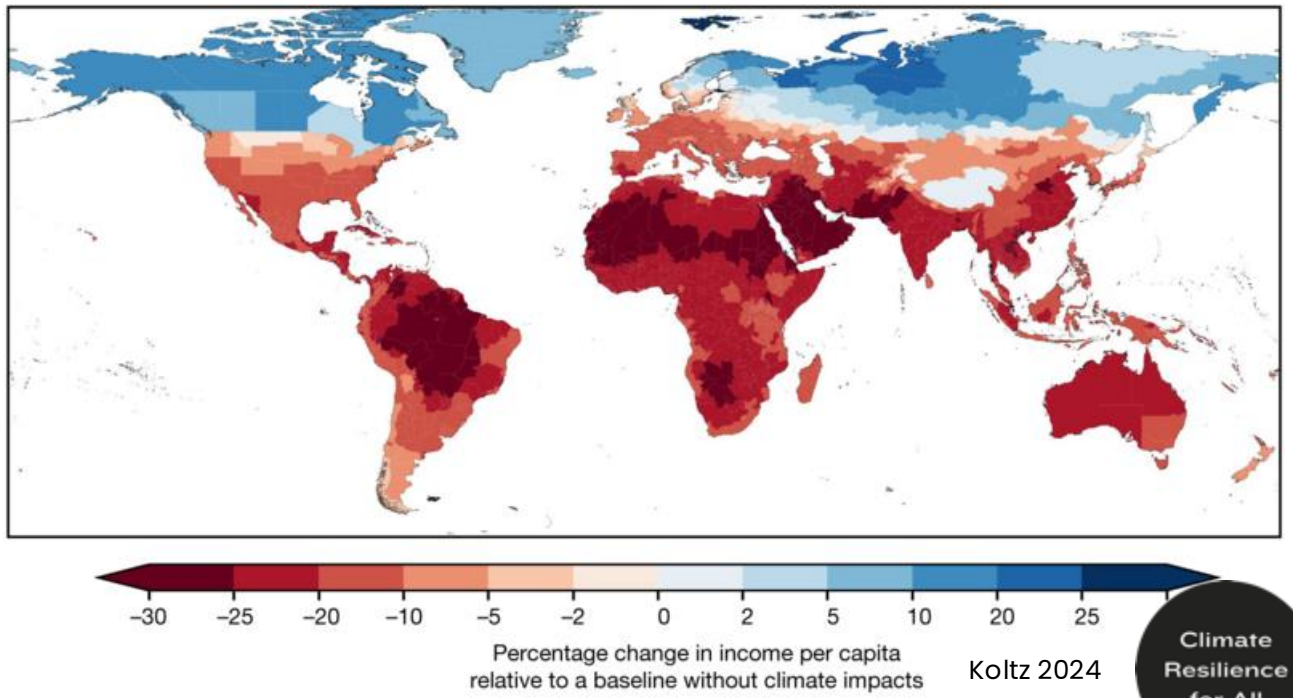
Wealth inequality and uneven exposure to impacts cause a widening adaptation finance gap

- The most vulnerable countries to climate impacts are historically the ones that have contributed least to GHG emissions, with millions exposed to acute food insecurity, reduced water security. People in highly vulnerable areas up to 15x more likely to die in floods, droughts, storms (compared to those in in most resilient areas)(IPCC 2023).
- Globally, the wealthiest 10% of the population concentrates 75% of wealth ownership (and capacity to finance adaptation) and drives almost half of global emissions, while 50% of the population holds 2% of wealth but faces 75% of the climate risks (World Inequality Lab).



World Inequality Lab 202X



Koltz 2024

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Our vision for the adaptation finance capital stack

Philanthropic capital supports systemic change, capacity building, community rights, and is deployed to leverage and attract public and private capital.

Local community groups and households are informed, empowered, and resourced to finance adaptive measures of their choice.

Corporates invest in the resilience of their workforce, their supply chain and their operations, and that of the communities where they operate. Impact capital is available to finance investments in adaptation projects and technological innovation.

Insurance is used to its fullest extent to derisk, reduce physical risk and transfer risk in developing countries and emerging markets to protect communities and support financial stability.

Prevention, preparedness and recovery from predictable climate-related natural disasters is adequately financed in advance by domestic and international dedicated funds.

Development finance institution integrate adaptive measures in every infrastructure project they finance. Adaptation finance is provided at concessionary rate or as grants in amounts sufficient to meet the needs of LDCs and Small Island Developing States.

Greater use of L&D and bilateral financial support funds adaptation projects in the most affected countries and communities

National and local governments account for climate risk in all relevant programs and policies, and fund adaptation priorities identified in national adaptation plans.

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Source: Illustrative diagram from the authors

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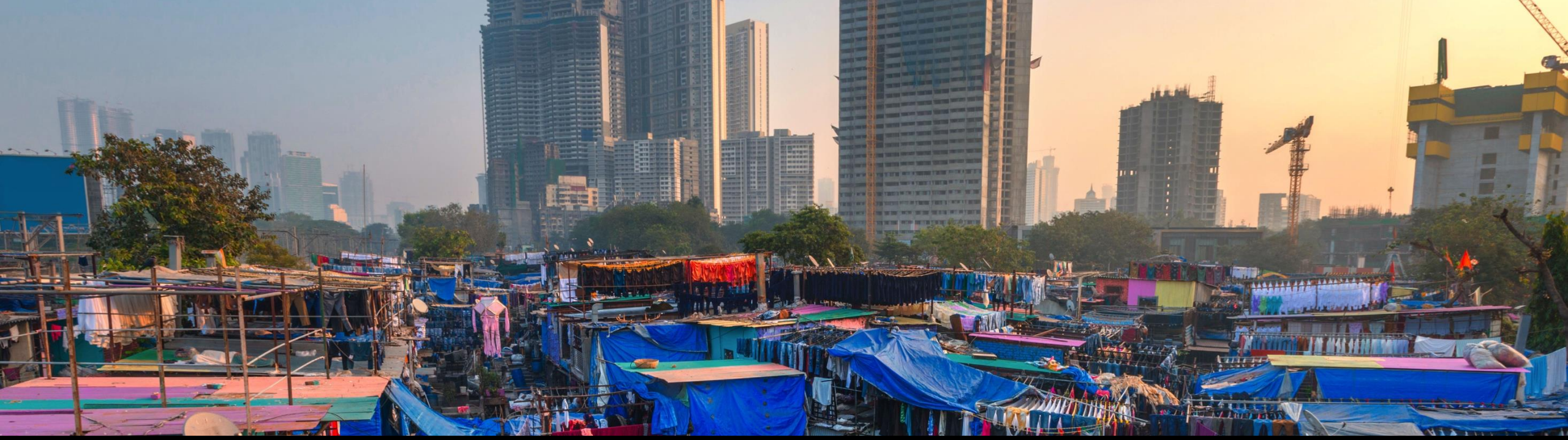

Understanding Adaptation Capital Flows

An Explainer

International public adaptation finance is dominated by market-rate loans

Funders

- Multilateral development banks (e.g. World Bank)
- Bilateral development finance institutions (e.g. USAID)
- Specialized funds (e.g. Green Environmental Facility)

Financial Instruments

Capital Flows

- Market-rate loans (60%)
- Concessional loans (lower interest rate) or guarantees (40%)
- Grants & technical assistance

Recipients

Infrastructure Projects

National Governments

Humanitarian NGOs

Local Governments

Local Banks (on-lending)

Local Businesses

Examples of Use of Funds

World Bank loans to a national government to finance a new water treatment plant

Regional Multilateral Bank on-lends to local banks to support farmers dealing with drought

Global Climate Fund provides grants for capacity-building in a vulnerable community

Bilateral Development Agency loans funds to local business to finance flood protection improvements

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Domestic public adaptation finance is rapidly increasing but still well below the needs

Funders

National Governments

Local Governments

Financial Instruments

Financial Flows

- Public Procurement and Programs
- Subsidies and Grants
- Sovereign and Municipal Bonds
- Tax Credits and Fiscal Incentives

Recipients

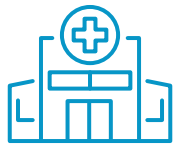
Local Governments

Households

Small Businesses

Community Groups

Infrastructure



Hospitals, Schools, etc.

Examples of Use of Funds

National Government deploys resilience grants program to support under-resourced communities

City issues resilience bond to finance flood barriers and other local flood mitigation measures

Municipal Transportation agency invests in shade structure for its bus network

State (or Province) invests in wildfire prevention program

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Disaster Risk Finance (DRF) is used to protect populations and cover costs from natural disasters

Funders

National Governments

Development Finance Institutions (DFIs)

Local Governments

Financial Instructions

Financial Flows

- National or Community Insurance Program
- Disaster Resilience Fund
- Risk Pools
- Catastrophe bonds
- Contingent or Post-disaster line of credit

Recipients

National Governments

Local Governments

Society

DRF helps to minimize the costs to finance related expenditures and optimize the timing to meet post-disaster funding needs without compromising development goals, fiscal stability or wellbeing.

Examples of Instruments

National Gov establishes disaster relief fund to provide funding for response and recovery efforts post-disaster

Local Gov purchase community flood insurance policy to cover all residents with pre-defined payment in case of floods

The Global Shield against climate risk provides pre-arranged finance from G7 against disasters and climate risks to V20 countries

National Government and insurance company partner to develop catastrophe bond market.

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Loss and Damage is an emerging concept that could open new sources of financing

L&D encompasses the point past adaptation limits, when "losses and damages will escalate as adaptation is no longer able to reduce negative impacts."

- Loss and damage (L&D) can be understood as a third pillar of climate action, alongside mitigation and adaptation. Mitigation can be thought of as *averting* L&D, while adaptation helps *minimize* L&D. (UNFCCC)
- Losses and Damages are already occurring. Scientific evidence indicates that L&D are unequally skewed to impact economically developing countries the most, who do not yet have the necessary funding to implement effective adaptation options.

- Economic L&D: Impacts that can be assigned financial value (damages to infrastructure, loss of productivity)
- Non-economic L&D: Impacts that cannot easily be assigned financial value (loss of life, health, cultural heritage, biodiversity, or local knowledge)

Financing mechanisms

Financing mechanisms to effectively avert, minimize, and address L&D are still early stage, but there is momentum with innovative financing vehicles such as the UN's dedicated Loss and Damage Fund hosted by the World Bank, with $661 million committed to date. Developing countries may confront as much as $580 billion in climate-related damages by 2030 (WRI).

Controversy around L&D Financing

Developed countries expressed concern that compensating for L&D may be viewed as an acknowledgement of legal liability and potentially trigger compensation claims on a larger scale. The amount of money developed countries, who are often the greatest emitters of GHG emissions, should commit to addressing L&D in developing countries has been a point of contention.

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Banks' ability to provide capital for A&R activities is underutilized globally

Funders

- Global banks
- Regional banks
- Community development finance institutions
- Credit Unions

Financial Instruments

Loan

Capital + Interest

- Business loans
- Mortgages
- Retail Loans
- Microcredit

Recipients

Corporations

Households

Infrastructure

Small Businesses

Examples of Use of Funds

Global Bank lends to multinational corporation to relocate industrial facility exposed to sea level rise

Regional Bank lends money to public-private partnership to harden local toll bridges

Community Development Finance Institution lends money to local homeowners for roof replacement

Farmers' Credit Union lends money to members to switch to drought-resistant crop

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A&R investments remain limited as investors are slowly engaging with the market opportunity

Funders

Investors

- Pension funds
- Sovereign funds
- Insurance
- Wealthy individuals
- Asset Managers / Funds

Financial Instruments

Financial Flows

- Public equity
- Corporate bonds
- Sovereign & Muni bonds
- Real estate & Project Finance
- Private Equity (PE) & Venture Capital (VC)

Recipients

Corporations

Real Estate

National Governments

A&R Startups

Infrastructure Projects

Local Governments

Examples of Use of Funds

Investor buys shares in a pharmaceutical company that develops a new vaccine for vector-borne diseases

Insurance company invests in resilient muni bond to upgrade local water treatment plant

Wealthy individual provides angel investment to startup with novel heat-resistant seed.

Sovereign fund invests in climate-resilient real estate development in regional cities.

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Corporations are increasingly aware of climate risk but slow to match pace with required investments

Funders

Corporations

Financial Instruments

Financial Flows

- Direct Spend / Purchasing
- Investments in own assets, workforce and infrastructure
- Insurance
- R&D, Corporate VC, M&A
- Grants

Recipients

Building and Infrastructure hardening

Energy and water efficiency, cooling, A&R products

Mobility, relocation, or migrations

Changes to economic activity, new product development

Examples of Use of Funds

Telecom company hardens its cell phone towers and network centers to maintain service continuity

Mining company upgrades equipment to decrease water consumption and enable water reuse

Materials company develops cool roof coating to sell into communities dealing with extreme heat

Consulting company donates funds to support employees and community affected by floods

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Scaling private adaptation finance will require targeted efforts and incentives

Four ideas to accelerate private adaptation finance

1 Adaptation investment opportunities do not need to be complicated. Adaptation finance can be as simple as a resilience bond aligned with Climate Bonds Initiative's newly released Taxonomy for Resilience Bonds, or investment in publicly traded companies that are staying on top of new market opportunities brought about by climate impacts (ref. Unavoidable Opportunity, GARI 2024)

2 Adaptation also needs to be 'cheaper, faster, better' (ref. Tom Steyer). While many adaptation activities can be low tech and effectively use nature-based solutions, scientific innovation and technologies should also be developed to improve and increase adaptation options. Public research funding combined with venture capital can play a key role in accelerating innovation.

3 Clean technologies like solar and wind received massive subsidies and tax incentives that helped lower the cost of production and turn them into attractive private investment opportunities. Public and philanthropic capital could similarly be deployed to demonstrate the financial viability and attractiveness of select A&R technologies and projects.

4 Corporate adaptation investments for risk management can be a powerful investment lever for community resilience. Corporations are only as resilient as the communities they operate in, with dependencies on infrastructure, workers and local ecosystems. Promoting investments in 'shared resilience' could unlock important capital flows.

Households and small businesses are already investing in their own climate resilience

Funders

Households

Small Businesses

Smallholder Farmers

Financial Instruments

Financial Flows

- Direct Spend / Purchasing
- Remittances
- Investments in own home or business assets
- Insurance and micro-insurance

Use of Funds

Building Resilience

Energy and water efficiency, cooling, A&R products

Mobility, relocation, or migrations

Changes to economic activity, new product development

Examples of Use of Funds

Small holder farmer buys new seeds or crop more resilient to drought and heat

Homeowner replaces roof and shutters to better withstand hurricanes / typhoons

Small business owner purchases business interruption insurance

Migrant sends fund to family in home country to pay for passage to country less exposed to climate impacts

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Insurance is a major risk transfer mechanism, itself increasingly affected by climate impacts

Reinsurance | **Insurance** | **Examples of Insurance Policies**

- The primary role of insurance is risk transfer, which involves shifting the financial consequences of a risk from one party to another, and pooling risk across groups of different risk profiles.
- Insurance companies transfer some of their own risk to reinsurers. This enables reinsurers to pool the risk globally.
- As climate impacts accelerate, the entire risk pool is becoming riskier, affecting the financial viability of the entire system.

Examples of Use of Funds

Property Insurer requires homeowner to clear yard from brushes for wildfire prevention

Healthcare Insurer pays for hospital expenses following a heat stroke

National Disaster Risk Finance Facility provides funding to city after climate-related disaster

Parametric Insurer compensates farmers automatically after a hailstorm

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Insurers are pressed to innovate as extreme weather events drive up losses

Insurance is underutilized globally, which has major equity implications as the most vulnerable countries and communities are often the ones with the lowest insurance coverage.

- The **Insurance protection gap** refers to the difference between the amount of insurance that is purchased and the amount that is economically beneficial. Globally, in 2023 only 38% of global losses ($280B) were insured. (see regional breakdown in table)
- The **insurance loss** burden has more than doubled over the last 30 years and is projected to double again in the coming decades (Swiss Re). This increase already translates to rising insurance rates, which could make insurance unaffordable to lower income households, or push insurers to withdraw from markets where the risk is deemed too high.
- Because insurance is often required for financial transactions, in particular for bank loans and mortgages, **a drop in insurance coverage could have wide-ranging implications for the financial system** and broader economy beyond the loss of coverage.
- The insurance industry is starting to explore different avenues to tackle rising climate risks (see examples below).

Region	Insurance Gap (% uninsured losses)	Total Economic Losses (Bn)
North America	43%	$1201
Latin America	80%	$96
Europe, Africa & Middle East	70%	$357
Asia	85%	$639
Oceania	42%	$56

Examples of Use of Funds

Prevention and education Insurers can help policy-holders understand how to reduce risks and minimize losses.

Parametric insurance ensures the timely, efficient, and predictable distribution of payouts to policy

Pricing Resilience Insurers can incentivize risk reduction by explicitly pricing A&R

Community-embedded insurance enable local governments to protect the overall community.

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Philanthropic capital is essential to support vulnerable communities and crowd-in other capital

Funders

Individual Donors

Foundations

Financial Instruments

Financial Flows

- Grants
- Debt and recoverable loans
- Guarantees
- Impact investments

Use of Funds

Hospitals, Schools, etc.

Humanitarian NGOs

Local Governments

Small Businesses

Community Groups

Households

Advocacy Groups

A&R Startups

[Pending ClimateWorks / OECD analysis)

Examples of Use of Funds

Community Group receives grant for capacity building and community adaptation planning

Humanitarian NGO receives grant for disaster-relief after a weather disaster

Advocacy Group receives grant to promote inclusion of indigenous interests in national adaptation plan

University receives philanthropic grant to create an incubator for adaptation tech

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Combining different types of capital can help overcome barriers to adaptation finance

Blended Finance

Catalytic capital from public or philanthropic sources to increase private investment in developing countries. Blended finance is a structuring, not investment, approach.

Purpose:

- To attract ("crowd in") private capital
- Make investments less risky or more attractive

Instruments: blended finance for project finance, debt or equity funds, or direct investments

Other Innovative Financial Instruments

Includes mechanisms and approaches that can be used to acquire, structure, govern, and allocate financial resources toward adaptation priorities.

Purpose:

- Monetize indirect or non-financial adaptation benefits
- Mobilize new sources of capital

Instruments: debt-for-nature, ABM, stormwater credit programs, pooled investments funds, etc.

Infrastructure project in developing country receives public funding to lower risk and attract private

Private Equity Fund receives philanthropic grants to invest in coral reef restoration companies

Small island government receives debt forgiveness in exchange for protecting natural environment

Homeowner increases permeable surface receives payment for exceeding regulatory requirement

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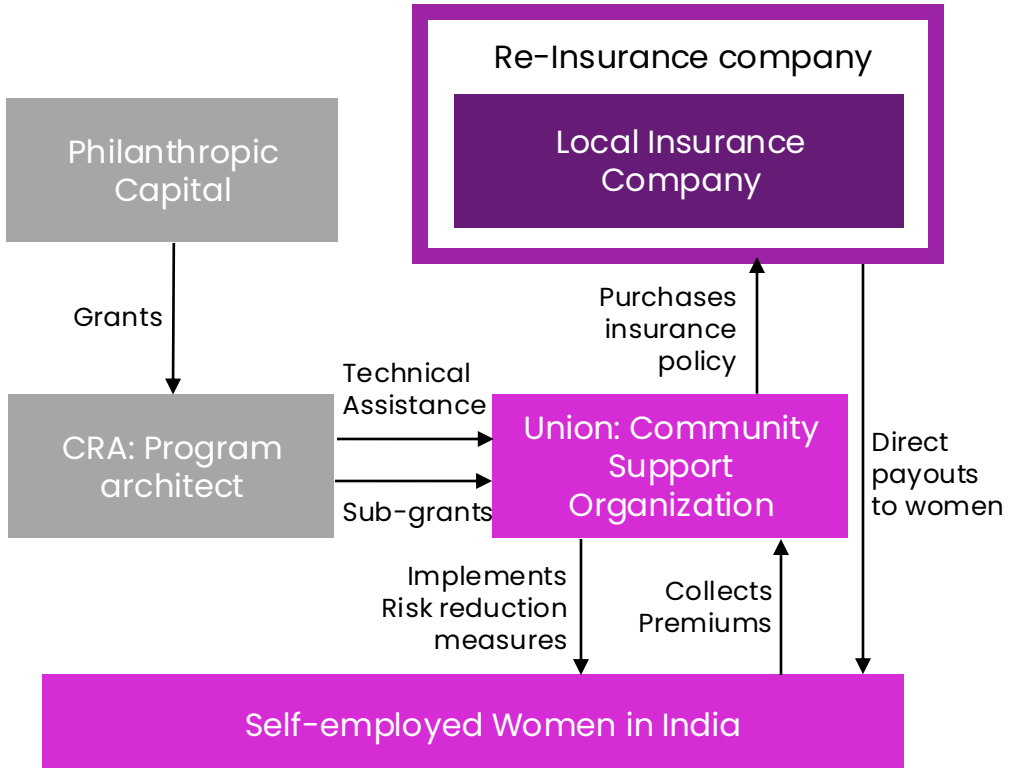
Case Studies

Innovation in adaptation finance

Case Study 1: Extreme heat parametric insurance for informal women workers in India

- **Purpose:** Women in the informal economy in India suffer severe health impacts from working in extreme heat or face economic hardship if they cannot work.
- **Description:** In partnership with SEWA, Climate Resilience for All's parametric insurance program provides a supplement for income lost due to extreme heat. This parametric insurance product is automatically triggered when the temperature reaches a certain threshold. Women pay a portion of the premium to participate in the program, and the shortfall is covered by philanthropic grants. Risk reduction components such as Early Warning Systems and cooling centers are also deployed in parallel with the insurance product.
- **Why Blended Finance:** This program utilizes a well-established, efficient private sector instrument (insurance), but requires funding from philanthropies to supplement revenues from participants as they might not afford to buy the insurance if it were initially priced to reflect the full cost of the program.



CRA's parametric insurance program was developed in partnership with SEWA, the Self-Employed Women's Association (SEWA). The insurance product was developed and is offered by Swiss Re.

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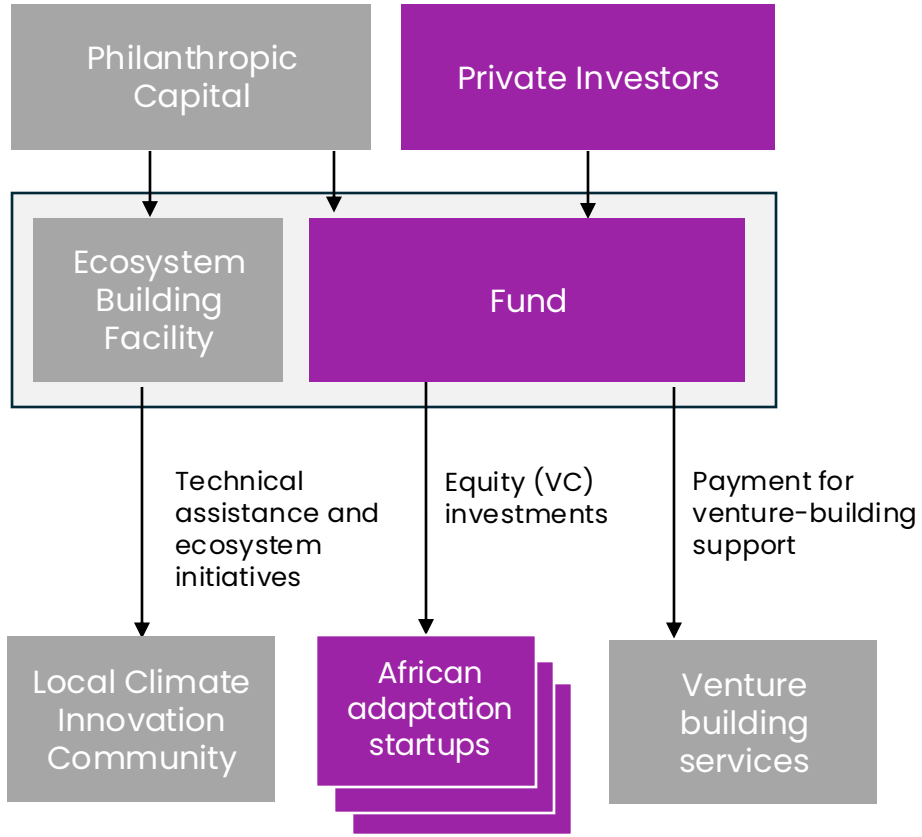
Case Study 2: The Catalyst Fund, impact investments in African SMEs

- **Purpose**: African startups capture only 1% of global finance flows and face critical gaps in funding, talent and access to knowledge. The fund helps build a pipeline of scalable adaptation solutions that are accessible, appropriate and affordable for vulnerable populations.
- **Description**: The Catalyst Fund is an early-stage fund that backs founders building climate adaptation and resilience solutions in Africa. It invests $200K in pre-seed startups and follows on subsequent rounds. The fund invests in fintech (including insurance), ag & food, water management, cold storage, waste management and health startups. The fund partners also provide hands-on support for founders to accelerate growth.
- **Why blended finance?** Funding from philanthropic capital enables investments in African startups that may otherwise seem too risky for private investors. It also funds technical assistance by way of an Ecosystem Building Facility.



The Catalyst Fund is supported by FSD Africa, UK International Development, Cisco Foundation, the Global Environment Facility and is part of the Global Climate Finance Lab.

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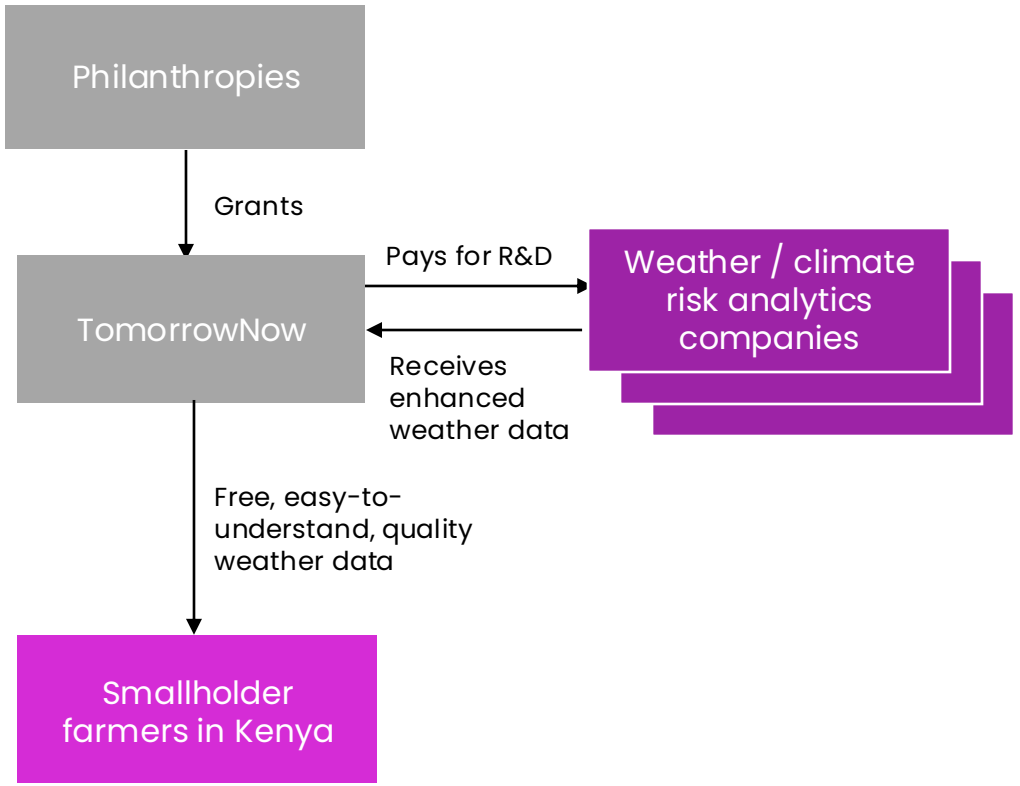
Case Study 3: TomorrowNow, localized weather data for smallholder farmers in Kenya

- **Purpose**: smallholder farmers in Africa lack access to quality weather data to help protect their crops from drought, heat and floods. Weather and climate data is generally poor in Africa due to a dearth of weather stations and a limited historical weather data set.
- **Description:** TomorrowNow is a non-profit spin off from Tomorrow.io, the weather analytics company. TomorrowNow pays advanced weather analytics and hardware companies like Tomorrow.io, Salient Predictions, Windborne and Arable to refine weather models in Africa and provide high-quality weather data, which is sent to 5M farmers in Kenya via SMS for timely weather crop advisory.
- **Why blended finance?** TomorrowNow receives philanthropic funding, which it uses to fund its operations and pay private companies for R&D and data that would not otherwise be commercially feasible for these companies due to a lack of bankable end-customer. TomorrowNow also uses funding to support local capacity building The model helps open access to higher quality data globally.



TomorrowNow is supported by the Gates Foundation and NOAA.

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