UNLOCKING CAPITAL FOR CLIMATE x HEALTH:

THE INVESTMENT LANDSCAPE IN ASIA

Partnership

AVPN and Prudence Foundation have partnered with Catalyst Management Services (CMS) to develop this '*Unlocking Capital For Climate x Health: The Investment Landscape in Asia'* report. The report aims to strengthen the case for catalytic and venture-aligned capital at the intersection of climate and health (climate x health) in Asia. It identifies opportunities for both financial and non-financial support that can be deployed by a range of actors, including philanthropies, impact investors, development finance institutions, and socially responsible corporations.

The findings draw on extensive desk research and are enriched by inputs from a diverse set of stakeholders, including investors, funders and ecosystem enablers. Their perspectives have shaped the report's analysis of current capital flows, investment readiness, and emerging adaptation opportunities in India and Indonesia, as well as the broader region, enabling us to identify gaps in capacity building and the policy landscape.

AVPN	**AVPN** is the largest network of social investors in Asia, comprising over 700 funders and resource providers across 43 markets. Our mission is to increase the flow and effectiveness of financial, human, and intellectual capital in Asia by enabling members to channel resources towards impact. As an ecosystem builder, AVPN enables its members to connect, learn, act, and lead across key pillars and improve the effectiveness of deployed capital, bringing local field needs, regional expertise, and policy insights to the forefront. For more information about AVPN and our work, please visit our website and read our latest Annual Review 2023/24
Prudence Foundation	**Prudence Foundation** is the community investment and philanthropic arm of Prudential plc, working to build long-term, scalable impact across Asia and Africa. Our efforts center on two key areas: Financial Literacy and Inclusion, and Climate and Health Resilience. Through strategic partnerships and innovative programming, the Foundation strengthens community resilience to face evolving global challenges by mobilising resources, fostering multi-sectoral collaboration, and driving sustainable change. For more information, please visit https://prudencefoundation.com.
Catalyst Management Services	**Catalyst Management Services (CMS)** is a social impact specialist with 30+ years of experience supporting change agents to tackle complex societal challenges. Aligned with the SDGs, CMS integrates innovative finance, technology, and collaborations to deliver scalable impact. At the climate–health nexus, it leverages expertise in social enterprises, blended finance, and ecosystem building to drive innovations that build resilience and reduce inequities. By shaping investments and nurturing climate-smart businesses, CMS enables investors to align capital with solutions for human and planetary health. Learn more at cms.org.in.

Foreword

The twin crises of climate change and public health are no longer distant threats—they are realities that define the lives of billions across Asia. From heat stress and vector-borne diseases to air pollution, the impacts of a warming planet are already testing the resilience of our communities and health systems, especially in Asia.

The World Meteorological Organization (WMO) indicated that Asia experienced the most climate-related disasters in 2023, with floods and storms causing the highest number of casualties and economic losses. Despite the urgency, lies a remarkable opportunity: to align capital flows in ways that not only mitigate risks but also generate solutions that safeguard both planetary and human health.

At AVPN, we see every day how innovative capital—whether philanthropic, catalytic, or commercial—can drive change when directed with intention. But we also recognize the persistent barriers: fragmented investments, limited data on investable opportunities, and an underdeveloped narrative connecting climate and health outcomes. This report, *Unlocking Capital for Climate x Health: The Investment Landscape in Asia*, addresses these gaps. It maps the emerging ecosystem of capital providers, highlights the pain points that hold back investment, and offers pathways to build a more cohesive, resilient financing architecture.

Through the launch of the *Lighthouse Fund*, AVPN has witnessed firsthand both the appetite and the challenges investors face when entering the climate and health (climate x health space). The Lighthouse Fund has demonstrated that while there is strong interest in financing solutions at the climate x health nexus, more needs to be done to build investor confidence, create a pipeline of scalable innovations, and strengthen the enabling environment. The lessons learned from this experience have further underscored the urgency of mobilizing a continuum of capital and building bridges between philanthropy, development finance, and private investors.

Our hope is that this report will not just inform, but inspire. By shining a light on the capital continuum, it calls on all stakeholders to think boldly and collaborate across silos. The scale of the challenge demands nothing less.

Asia stands at the frontline of the climate crisis, but it also holds extraordinary potential to pioneer solutions that can be replicated globally. To realize this, we need to embrace a mindset of partnership, experimentation, and long-term vision. If we succeed, the rewards will be measured not only in financial returns, but in healthier lives, climate-resilient communities, and a sustainable future for generations to come.

On behalf of AVPN, I thank our partners and contributors for making this knowledge product possible. Together, let us accelerate the flow of capital toward the climate–health nexus, and in doing so, turn today's challenges into tomorrow's opportunities.

Dhun Davar

Chief of Programmes & Deputy CEO, AVPN

Foreword

We are living at a time when the world faces unprecedented climate risks — risks that are not only environmental but also deeply human. With the increasing frequency and severity of climate-related disasters, the need to raise awareness, build resilience, and support solutions that mitigate or respond to these shocks has never been greater.

This urgency is especially acute in Asia Pacific, a region most prone to disasters, and where the interplay between climate change and human health has emerged as one of the most pressing challenges. Floods, heatwaves, and shifting patterns of infectious disease are not isolated events. They are systemic shocks that call for greater preparedness.

Building community resilience against the health impacts of climate change is at the core of what we do at Prudence Foundation.

We believe that technological innovation has a significant role to play in improving disaster preparedness, recovery and resilience. In 2019, we created the SAFE STEPS Disaster Tech (D-Tech) Awards programme with the aim to find, fund and support startups or social enterprises with innovative solutions that protect and save lives and livelihoods. Building on the success of this programme, Prudence Foundation partnered with AVPN to explore how impact capital can be more effectively channelled to address the nexus of climate and health. The goal is not short-term reaction to crisis, but a long-term reallocation of capital towards adaptation and resilience solutions that can withstand, recover from, and even thrive in the face of climate stressors.

We believe that adaptation and resilience are investment strategies and opportunities.

Because resilience is about protecting and creating value. Because investing in health solutions that can weather climate shocks, preserves economic productivity, reduces volatility, and builds social stability. Because the return on investment in resilience is not only measured in dollars, but in lives saved, communities protected, and systems sustained.

All of which are core to portfolio performance.

We believe that this is a defining decade. And it will be defined by how we choose to respond — not only as governments or organizations, but as stewards of capital. We cannot do it alone. Progress depends on partnerships that unite public, private, and philanthropic sectors.

We hope this report contributes towards shaping the narrative and shifting the trajectory — from vulnerability to strength, from risk to resilience, and from reactive financing to proactive, catalytic investment.

Thank you.

Nicole Ngeow

Executive Director, Prudence Foundation

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Executive Summary

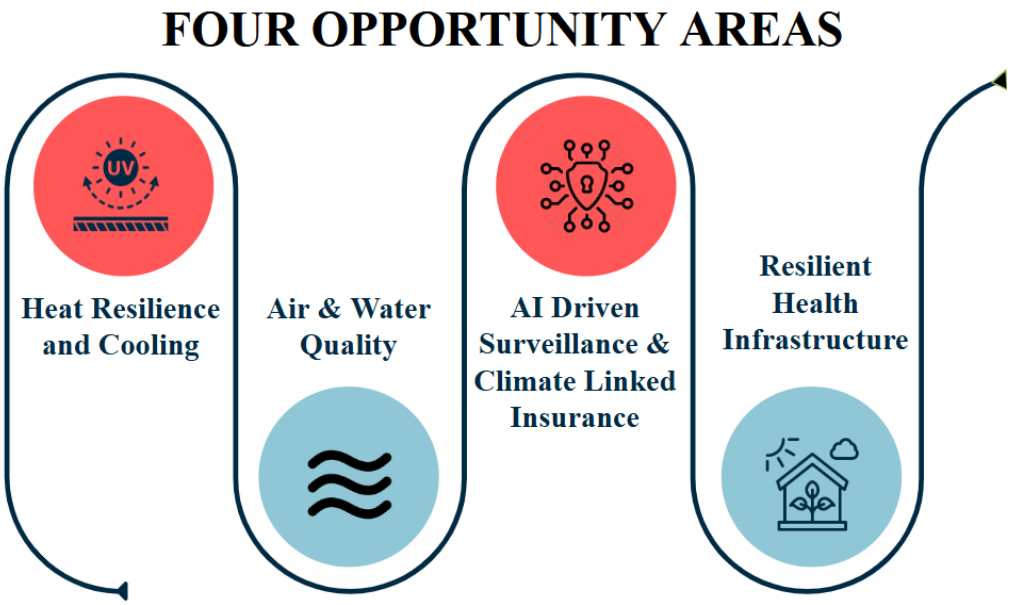
Asia sits at the fault line of two converging crises-escalating climate threats and persistent health inequities. Yet, capital flows remain fragmented and misaligned with the scale and urgency of this dual challenge. While climate x health are increasingly linked in discourse and impact, investment vehicles, frameworks, and market signals have not kept pace. This report offers a directional, investor-facing analysis of the climate x health opportunity in Asia, with a focus on early-stage venture capital and impact investors looking to shape this emerging frontier.

Drawing on market scoping, primary insights from ten leading investors, and deep-dives into India and Indonesia, the report delivers a clear thesis: ***while climate x health remains fragmented as a sector, it is well-positioned for catalytic capital that can shape markets, de-risk early innovation, and unlock co-benefits across public health, community resilience, and climate adaptation.***

Most investors acknowledge the relevance of climate x health but struggle with deal fragmentation, policy ambiguity, and the absence of consistent market signals. Health-linked adaptation solutions are often seen as unbankable or too early-stage, especially in the absence of clear public procurement pathways or insurance anchored demand models.
Early momentum is visible. Innovations in cooling, AI-driven disease surveillance, parametric insurance and clean air technologies are gaining visibility. Investors are starting to support ventures that sit at the edge of climate, health, and digital innovation, particularly when they are distribution-led, policy-aligned, and structured for blended capital. The challenge lies not in the absence of ideas, but in structuring capital stacks, proving product-market fit in complex public systems, and navigating soft return expectations.

To support investor decision-making, this report introduces a ***fit-for-purpose climate x health Investment Toolkit***, designed to balance rigor with flexibility. The toolkit rests on three components: ***the Venture Score Grid,*** which assesses solution strength, team capacity, ecosystem fit, and market model; ***the Minimum Viable Score (MVS)*** which establishes sector-specific readiness thresholds to determine baseline investability; ***the Macro Risk Adjusters,*** which refine scores to reflect external conditions, using tools such as the Sector Beta Modifier (SBM), Tailwind Coefficient (TWC), Exit Market Health Coefficient (EMHC), and Investor Risk Appetite Coefficient (IRAC).These elements help investors move beyond product and team quality, factoring in ecosystem maturity, policy alignment, and exit visibility, ensuring that capital is deployed with both ambition and realism.

Four opportunity areas aligned with AVPN's priority areas stand out as particularly ripe for capital infusion, each illustrated through real-world case studies:



A cross-cutting insight is the ***central role of catalytic capital in unlocking this space.*** Flexible, early-stage capital is not only de-risking innovation, but also building the enabling infrastructure including accelerators and open data platforms as well as technical assistance facilities and narrative shaping. When strategically deployed, ***catalytic capital can trigger crowd-in from commercial investors by signaling credibility and structuring pathways to scale***.

These functions are especially critical in adaptation-heavy sectors where conventional venture capital logic falls short. To fully activate this space, venture support models ***must extend beyond financing***, offering regulatory navigation, policy alignment, and institutional matchmaking that move promising climate x health solutions from experimentation to procurement and ultimately, policy integration.

Of all the countries in Asia Pacific, India and Indonesia emerge as strategic anchor markets. India presents scale, capital depth, and a robust innovation base, while Indonesia offers early-stage traction with rising alignment across ministries and donors. Both markets reveal pockets of investability, especially when supported by blended finance and ecosystem orchestration.

For investors, the report answers a critical question: where and how to invest in climate x health without falling into the trap of scattered priorities or unbankable pilots. It distills investor insights into a clear capital roadmap-highlighting what it will take to mainstream climate x health solutions in real economies.

This report is a practical, market-shaping blueprint to unlock capital and scale solutions at one of the most urgent frontiers of our time: the convergence of climate resilience and human health.

1. Introduction

Climate disruption is now Asia's most urgent public-health crisis. Six of the planet's nine "safe-operating" boundaries are already breached, driving extreme heat, polluted air, and shifting disease patterns. Yet health adaptation attracts barely 0.5 % of global climate finance and just 2 % of adaptation funding. The mismatch leaves frontline solutions starved of capital at the very moment they are most needed.

Recognising this critical gap — and the unique opportunity it presents for strategic impact — **AVPN** has launched the **Climate x Health: Lighthouse for Asia** initiative. The initiative aims to incubate and validate solutions at the intersection of climate and health that can drive effective adaptation investments.

Prudence Foundation, with its strategic focus on building climate and health resilience and its track record of spotlighting innovative solutions through the SAFE STEPS D-Tech Awards, also views this as a vital opportunity to address the challenges of mobilising greater investment into climate–health adaptation and resilience. In line with this, Prudence Foundation and AVPN have jointly shaped the direction to tackle the persistent lack of investment in climate–health innovations and the barriers investors face in deploying capital into high-impact, but often underdeveloped, business models.

As part of the initiative, AVPN and Prudence Foundation commissioned **Catalyst Management Services (CMS)** to produce a regionally grounded, investor-facing knowledge product. This report combines secondary research with in-depth interviews across a diverse cohort of capital providers, with a particular focus on early-stage venture capital actors, to understand how investment decisions are currently being made at the climate–health nexus.

The findings, views, and opinions expressed in this report are those of the authors and do not necessarily reflect those of Prudence Foundation. Prudence Foundation is not responsible for the content of this report and shall not be held liable for its content or for any use or interpretation thereof.

By surfacing insights on investability, de-risking, pipeline readiness, emerging solutions and enabling conditions, this document aims to unlock new flows of capital into climate x health solutions. Special emphasis is placed on ***India and Indonesia,*** two of the most dynamic yet underserved markets for investment. This document concludes with a forward looking toolkit for venture capital and catalytic investors, along with ecosystem actors, to strengthen pipelines and enable scalable capital deployment into this emerging frontier.

The analysis distinguishes adaptation from mitigation: while mitigation focuses on cutting emissions, adaptation involves redesigning systems to withstand climate shocks, with resilience strengthening the capacity to endure future risks. This distinction is particularly urgent in Asia, where between 2000 and 2024 nearly 40% of all climate-related disasters occurred, and the region now faces six major events each year.

This report equips ***venture and catalytic investors*** with a clear map of where their capital can close Asia's climate x health gap, highlighting investable themes, de-risking tools, and next steps for co-investment. Policymakers, development finance institutions (DFIs), and philanthropies will also find guidance on building pipelines and blended-finance vehicles. It delivers on four core objectives:

1	2	3	4
Develop a roadmap for capital providers to take concrete action in enabling climate x health funding	Surface investor concerns, structural barriers, and investability gaps.	Offer actionable recommendations to scale, adapt, and de-risk climate x health investment models.	Showcase 3-4 real world case studies that demonstrate capital alignment, business viability, and health impact.

To deliver on these four objectives, the report draws on a structured research process, combining desk research, investor interviews, country scoring, and toolkit design. Findings place particular emphasis on India and Indonesia, where deep dives illustrate both opportunities and barriers. The analysis remains directional, based on mid-2025 data and a targeted investor cohort, with full methodology, assumptions, and limitations detailed in Annex 1 alongside the scoring framework.

2. Investment Landscape in Asia

As the twin crises of climate change and public health intensify across Asia, the need for integrated financing at their intersection is increasingly clear. This chapter draws on secondary research to map the current state of the investment landscape. It explores the mismatch between risk and response, analyzes gaps and emerging momentum, and highlights the evolving architecture of capital flows. From multilateral development banks (MDBs) to venture capital and philanthropy, a wide range of actors are beginning to shape this emergent field.

2.1 Climate x Health Risks vs. Investment Response

Rising temperatures, extreme weather, air pollution, and water insecurity are now widely recognized as leading drivers of disease, displacement, and lost productivity. In 2021 alone, ***470 billion work hours were lost to heat-related impacts***, while ***climate-driven disasters caused USD 253 billion in damages***, most of it uninsured in low-income regions[1].

Yet capital flows remain misaligned: just 5 % of the USD 1.46 trillion in global climate finance reached adaptation, and even smaller share targeted health, while Asia mobilised only USD 34 billion against annual needs of USD 102–431 billion[2,3,4].

For more data on access gaps and finance trends, please refer to Annex 3.

2.2 Gaps and Momentum: Where the Capital Stands in Asia

Despite rising awareness, investment in adaptation, particularly health adaptation, continues to lag in Asia. Of the estimated USD 1.1 trillion needed annually for climate mitigation and adaptation across the region[5], only ~30% is currently mobilized[6]. In 2018-

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1 Romanello, Marina, Claudia Di Napoli, Paul Drummond, Carole Green, Harry Kennard, Pete Lampard, Daniel Scamman, Nigel Arnell, Sonja Ayeb-Karlsson, Lea Berrang Ford, et al. 2022. "The 2022 Report of the Lancet Countdown on Health and Climate Change: Health at the Mercy of Fossil Fuels." The Lancet 400 (10363): 1619–54. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01540-9/fulltext

2 Asian Development Bank. 2024. Asia–Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions. Manila: Asian Development Bank, https://www.adb.org/climate-report/editions/2024

3 Climate Policy Initiative. 2024. Global Landscape of Climate Finance 2024. Insights for COP29. By Baysa Naran et al. October 31, 2024. https://www.climatepolicyinitiative.org/wp-content/uploads/2024/10/Global-Landscape-of-Climate-Finance-2024.pdf

4 Global Center on Adaptation. 2024. State and Trends in Climate Adaptation Finance 2024. Co-directed by Ede Jorge Ijjasz-Vasquez and Jamal Saghir. Rotterdam (hosted in the Netherlands): Global Center on Adaptation, April 18 https://gca.org/reports/state-and-trends-in-climate-adaptation-finance-2024/

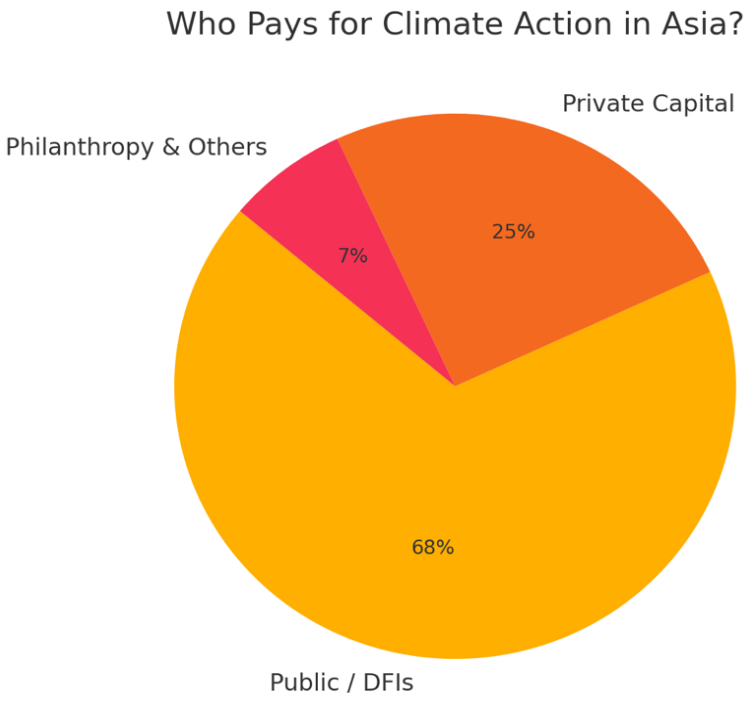
5 International Monetary Fund. 2024. "Explainer: How Asia Can Unlock $800 Billion of Climate Financing." IMF Blog, January29.https://www.imf.org/en/Blogs/Articles/2024/01/29/explainer-how-asia-can-unlock-800-billion-of-climate-financing

6 Asian Development Bank, Climate Finance Landscape in Asia and the Pacific (Mandaluyong City, Philippines: Asian Development Bank, 2020), https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf

2019, ***just 8% of Asia climate finance was allocated to adaptation***, and an even smaller share towards health[7].

The adaptation finance landscape is dominated by public sector actors, with ***DFIs contributing ~68% of tracked public climate flows*** in the region[8]. Green Climate Fund (GCF) directed USD 976 million to Asia-Pacific between 2019 and 2020 to support projects in water, sanitation, and hygiene (WASH)[9] such efforts remain insufficient to drive systemic transformation for climate x health.

Private capital, though growing, remains limited.While ***74% of institutional investors in Asia-Pacific cite climate transition as a strategic priority***, fewer than 40% feel confident in their progress[10, 11].This underscores both the appetite for engagement and the barriers preventing private sector financing, particularly from venture capital and impact funds, from flowing at scale into climate x health solutions.



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[8] Asian Development Bank. 2023. Climate Finance Landscape of Asia and the Pacific. Manila: Asian Development Bank Asian Development Bank (ADB). https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf

[9] Asian Development Bank. 2023. Climate Finance Landscape of Asia and the Pacific. Manila: Asian Development Bank Asian Development Bank (ADB). https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf

[10] United Nations Development Programme. 2024. Asia in Focus: ESG Investing and the Business and Human Rights Agenda. New York: UNDP. June 11.https://www.undp.org/sites/g/files/zskgke326/files/2024-06/final_esg_investment_in_asia_report.pdf

[11] Asia Investor Group on Climate Change, State of Investor Climate Transition in Asia 2025 (April 2025), https://aigcc.net/wp-content/uploads/2025/04/AIGCC-Climate-Transition-Report_April2025.pdf?utm

2.3 Evolving Capital Architecture

Multilateral development banks (MDBs) are playing a critical role in shaping the architecture of climate x health investment in Asia. Their contributions go beyond direct financing, focusing also on de-risking mechanisms, policy alignment, and the development of investment-ready ecosystems that can attract private and philanthropic capital. Such examples are:

- **Asian Infrastructure Investment Bank (AIIB)** has pledged 50 billion dollars for climate by 2030 and integrates health co-benefits such as clean water, sanitation, reliable power, into its loans[12].
- **Asian Development Bank (ADB)** targets 100 billion dollars in climate finance by 2030[13]. Its new Innovative Finance Facility for Climate in Asia and the Pacific (IFCAP) guarantee programme attracts private capital alongside ADB loans for both climate mitigation and adaptation. By lowering risk, it enables investment in health-linked adaptation solutions such as resilient infrastructure, surveillance systems, and cooling technologies that deliver both climate resilience and public health benefits.
- **The World Bank Group** requires that at least 35 percent of its lending be climate-aligned. Nearly 60 percent of its 30-billion-dollar health portfolio now supports adaptation, from low-carbon hospitals to disease surveillance[14].

New collaborative platforms are also emerging:

- A working group co-led by the World Bank and ADB is 12tandardizing metrics and sharing deal pipelines.Importantly, this Development Bank Working Group for Climate-Health Finance has been set up specifically to advance investment at the climate x health nexus, helping banks align on common definitions, country diagnostics, and financing tools for health-focused adaptation.
- **Alliance for Transformative Action on Climate and Health (ATACH)**, a WHO–World Bank alliance, helps governments weave climate x health goals into national investment plans[15].

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12 Asian Infrastructure Investment Bank. n.d. "Investing in Climate Action." In Green Infrastructure, Infrastructure for Tomorrow (AIIB website). Accessed June 16, 2025.https://www.aiib.org/en/about-aiib/who-we-are/infrastructure-for-tomorrow/green-infrastructure/climate/index.html

13 Asian Development Bank. 2021. "ADB Raises 2019–2030 Climate Finance Ambition to $100 Billion." News Release, October 13 https://www.adb.org/news/adb-raises-2019-2030-climate-finance-ambition-100-billion

14 World Bank Group. 2021. Climate Change Action Plan 2021–2025: Supporting Green, Resilient, and Inclusive Development. Washington, DC: World Bank Group. Accessed June 27, 2025. https://documents1.worldbank.org/curated/en/705731624380363785/pdf/World-Bank-Group-Climate-Change-Action-Plan-2021-2025-Supporting-Green-Resilient-and-Inclusive-Development.pdf

15 Alliance for Transformative Action on Climate and Health. 2022. Terms of Reference and Workplan (2022–2024) of the ATACH Working Group on Financing the Health Commitments on Climate Resilient and Low Carbon Health Systems (FIN WG). Geneva: World Health Organization. https://www.atachcommunity.com/fileadmin/uploads/atach/Documents/FIN-WG_ToR.pdf

- Updated environmental, social and governance (ESG) rules such as International Finance Cooperation (IFC) Performance Standards, ADB Safeguard Policy, and the World Bank Environmental and Social Framework, make pollution control, community health, and worker safety mandatory.

Yet even as these institutional flows grow, ***distribution remains uneven***. Less than 35% of bilateral and multilateral climate x health funding reaches target countries directly, and with even smaller shares flowing to the most affected regions[16].

2.4 Role of Donors and Philanthropy

Bilateral aid continues to fill critical gaps. Australia's Department of Foreign Affairs and Trade (DFAT) has earmarked USD 398 million for climate-resilient health and Water, Sanitation, and Hygiene (WASH) programmes across the Indo-Pacific[17]. The UK's Foreign, Commonwealth & Development Office (FCDO) backs a USD 280 million guarantee that de-risks private investment in climate-linked insurance for smallholder farmers[18].

Philanthropic actors play an instrumental role in early-stage ecosystem building. The Gates Foundation commits USD 300 million to climate x health initiatives in Asia, focusing on infectious disease and adaptive agriculture[19]. Rohini Nilekani Philanthropies supports grassroots and systems-level solutions across India[20], while Wellcome Trust and the Rockefeller Foundation fund innovation in surveillance and data systems.[21] Similarly, Temasek Trust, through its Catalytic Capital for Climate and Health (C3H) initiative and the Centre for Impact Investing and Practices (CIIP), exemplifies how philanthropic capital can de-risk innovation, convene cross-sector actors, and shape knowledge platforms[22].

Despite their catalytic contributions, donor and philanthropic capital is often directed toward upstream infrastructure and public goods. ***Early-stage ventures operating in the USD 1–10 million range remain underserved***, pointing to the need for blended approaches that link this capital to scalable, market-based solutions[23].

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16 Foundation S - The Sanofi Collective; Reaching the Last Mile; The Rockefeller Foundation; SEEK Development; adelphi consult; AfriCatalyst (2025): Resourcing Climate and Health Priorities. Mapping of International Finance Flows, 2018-2022. https://www.rockefellerfoundation.org/wp-content/uploads/2025/01/Resourcing-Climate-and-Health-Priorities-Full-Report-Final.pdf

17 Australia's Department of Foreign Affairs and Trade. 2023. Partnerships for a Healthy Region: Strategic Investment Framework 2023. Canberra: DFAT Partnerships for a Healthy Region_Strategic Investment Framework_2023 FINAL.pdf

18 DLA Piper. 2024. "DLA Piper advises Foreign, Commonwealth & Development Office on multi-donor climate financing facility." News Release, November 18. DLA Piper advises Foreign, Commonwealth & Development Office on multi-donor climate financing facility | DLA Piper

19 International Crops Research Institute for the Semi-Arid Tropics. 2024. "Novo Nordisk Foundation, Wellcome, and the Bill & Melinda Gates Foundation Join Forces to Accelerate Global Health Equity and Impact." Institutional News, May 6. https://pressroom.icrisat.org/novo-nordisk-foundation-wellcome-and-the-gates-foundation-join-forces-to-accelerate-global-health-equity-and-impact

20 https://rohininilekaniphilanthropies.org/field-of-work/climate-environment/

21 The Rockefeller Foundation. 2025. "Rockefeller Foundation and Wellcome Partnership Drives Global Climate-Informed Health Action." May 21. https://www.rockefellerfoundation.org/news/rockefeller-foundation-and-wellcome-partnership-drives-global-climate-informed-health-action

22 Temasek Trust, "Our Ecosystem," *Temasek Trust*, accessed July 29, 2025, https://www.temasektrust.org.sg/ecosystem-for-good/our-ecosystem.

23 Sourabh Deorah, "What It Takes to Go from $0–1 Mn to $1–10 Mn," Inc42, March 5, 2023, accessed June 27, 2025,https://inc42.com/resources/what-it-takes-to-go-from-0-1-mn-to-1-10-mn/

2.5 Private Capital and Venture Capital Convergence

Private capital is entering climate x health more actively. Venture-capital assets under management in Asia grew ***twenty-one times*** between 2011 and 2022[24], and about ***ten percent of that pool now targets climate technology.*** Deal sizes remain small, usually under five million dollars, but the count of early-stage rounds is steadily increasing. ***Climate-tech investments alone now account for nearly 10% of global venture capital and private equity flows***[25].

Specialised investors are setting the pace. Synapses, a venture capital fund, has backed thirty start-ups working on heat analytics, vector control, and low-carbon health facilities[26]. Temasek's Decarbonisation Partners has added a climate x health sleeve and pledges up to one hundred million dollars for technologies that cut emissions while protecting health[27]. Investors identify two key friction points: First, the "missing-middle" ticket gap between grant funding and a Series A round; Second, the lack of standard metrics that prove health outcomes. Blended structures that combine concessional loans with venture equity are emerging as a practical fix, and several pilots now include sovereign-wealth partners.

For additional data and fund examples, please refer to Annex 3.

2.6 Capital Strategy and Financial Instruments

Investment strategies in Asia are evolving to reflect geopolitical complexity, climate urgency, and the need for resilient business models[28]. ***Early-stage rounds dominate venture capital landscape***, especially in hubs like Singapore and India[29]. Furthermore, large institutional players such as Government of Singapore Investment Corporation (GIC), Temasek, and Vertex Ventures are backing deep-tech and health-aligned ventures that blend commercial returns with systemic impact[30]. Flexible instruments, venture debt, private credit, blended finance, and outcome-based models, are bridging early innovation and scale. Ultimately, ***scaling climate x health solutions in Asia will require modular, multi-phase capital stacks*** that integrate grants, concessional funds, and commercial investment. Aligning these instruments with evolving policy priorities and impact frameworks will be critical to unlocking the next wave of climate x health finance.

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24 Singh, Prakhar, and Mark Watson. 2025. "Asia's Evolving Venture Capital Market." Wellington Management Insights, August 31. https://www.wellington.com/en/insights/asias-evolving-venture-capital-market

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27 Temasek. 2024. "Making Fresh Tracks in Decarbonisation." Temasek, April 22, 2024. Accessed July 18, 2025. https://www.temasek.com.sg/en/news-and-resources/stories/t50/50-by-fifty/making-fresh-tracks-in-decarbonisation.

28 KPMG Private Enterprise. 2025. "Q1'25 Venture Pulse Report , Global Trends." KPMG International, April 16.https://kpmg.com/xx/en/what-we-do/industries/private-enterprise/venture-pulse.html

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3. Investor Perceptions on Climate x Health Investments

The intersection of Climate x health represents a strategic frontier for impact investment in Asia, offering both systemic resilience and scalable public value. Yet despite growing interest, the space remains under-recognized, inconsistently defined, and structurally underserved by conventional capital markets.

The insights in this section are drawn primarily from interviews with 10 leading investors and catalytic actors. Across these conversations, stakeholders noted that the lion's share of capital continues to flow into climate mitigation-heavy sectors like renewable energy and mobility. Adaptation-linked health interventions, despite growing urgency and relevance, often struggle to attract capital due to perceived complexity, softer return profiles, and lack of investability signals.

However, investors and convenors are exploring narrative shifts, new financial instruments, and platform solutions to unlock finance that straddles mitigation and adaptation like Cooling, Parametric Insurance and Air Quality. This chapter synthesizes these primary perspectives from across the capital spectrum, including venture capitalists, DFIs, and ecosystem builders, to offer a holistic view of how investment practices, priorities, and frameworks are evolving within the climate x health landscape. ***See Annex 1 for methods and Annex 4 for respondent profile.***

3.1. Investment Priorities: Emerging as a Strategic Investment Space

- **Climate x Health is shifting from co-benefit to core strategy:** While most investors do not yet have dedicated climate x health theses, they increasingly back solutions that deliver climate x health value, such as cooling, diagnostics, and resilient health infrastructure. Thematic framing still lags deal activity, with most climate x health deals having no consistent taxonomy and instead labelled as "climate-tech, digital health etc.,". This inconsistency makes it harder to aggregate data, build co-investment platforms, or structure thematic funds that reflect the intersection of climate change and health. WASH, and health infrastructure also hold strong potential as community-led pathways for resilience, but are still treated in silos, either as climate adaptation or public health priorities. Reframing these sectors, grounded in local leadership and co-benefit outcomes, under an integrated climate x health lens could unlock larger pools of capital, amplify systemic impact, and accelerate convergence across climate and health goals.

- **Thematic integration is a key unlock:** Without shared taxonomies or metrics, climate x health activity remains fragmented across health-tech, WASH, and digital infrastructure. This limits co-investment, dilutes impact attribution, and reduces funder alignment. The fragmentation also reinforces a siloed view, keeping climate and health seen as separate topics instead of highlighting their intersectionality.

- **Ecosystem convenors are reframing climate x health as a system-level opportunity:** Climate x health sits at the intersection of health equity, planetary boundaries, and the just transition, offering a compelling frame for environmental, social and governance (ESG)-aligned, cross-sector capital.

- **Dedicated climate x health funds and accelerators are on the horizon:** Several respondents noted early signs of institutional focus, with new platforms emerging to source, derisk, and mainstream climate x health ventures. However, overall, climate x health topic remains underrepresented.

- **Climate-linked insurance is a catalytic frontier:** Parametric models tied to heat, rainfall, or disease thresholds are gaining traction. Applications include:
    - Heat-index insurance for informal workers
    - Vector-linked payouts for public health providers
    - Bundled crop-health-risk covers for smallholders

  These models offer scalable financial resilience and are well-suited to blended capital.

- **Cooling, clean air, and surveillance are near-market:** Investors are increasingly backing passive cooling for clinics, indoor air filtration, AI-driven early warning tools, and mobile diagnostics, especially where policy support or ESG incentives are emerging.

⇒ **In summary**: The narrative is shifting from climate x health as a co-benefit to a domain of real value creation. To unlock private capital, climate x health must be framed as a mainstream investment vertical with the right structures, stories, and partnerships to back it. One interviewee summarized this challenge succinctly:

> *"Everyone is touching the elephant from different angles, health experts, environmentalists, and funders each bring their own frameworks. Without shared narratives or data, actors gravitate toward narrower sub-themes like antimicrobial resistance, where the link feels more tangible. But this reflects a deeper challenge of defining the space."*

3.2. Market Dynamics: Capital Exists, but Pipeline and Enabling Ecosystem Lags

"It often comes down to confidence, courage, and cost of capital. No one wants to be the first to jump, everyone's asking, 'Who else is in the round?' Even when there's a great pipeline, that hesitation creates a chicken-and-egg problem. We try to be the first mover to give others the confidence to follow."

Climate x health ventures face a unique set of barriers that limit their ability to attract capital and grow to scale. Unlike mainstream climate-technology or health-technology investments, these ventures often sit at the intersection of two complex systems, climate adaptation and public health, where returns are harder to benchmark, risks are perceived as higher, and enabling infrastructure is less mature. As a result, even technically strong and socially impactful solutions struggle to move from pilot to growth stage.

Several structural bottlenecks explain why capital flows into climate-health remain constrained. Four issues stand out:

1. **Pipeline maturity:** Many founders prove their concepts but stall before pilot scale. They lack the advisory support and early revenue needed to pass an investor's basic diligence tests.

2. **Ticket-size gap**: Grants rarely exceed half a million dollars, while Series A rounds normally start at five million. Few funds specialise in the one-to-three-million-dollar "missing-middle" slot.

3. **Demand-side risk:** Health ministries, insurers and large corporations often cannot guarantee long-term offtake, so revenue projections look fragile. Without anchor buyers, investors raise their return targets or walk away.

4. **Policy drag**: Regulations for health data, adaptation finance and blended structures remain unclear in many markets, stretching due-diligence timelines and increasing legal costs. This challenge is further compounded by the way government mandates are split across ministries, investment, environment, and health often operate in silos, making policy coordination slow and fragmented. The lack of cross-ministerial alignment exacerbates uncertainty for investors and delays the scaling of climate x health solutions.

These bottlenecks are compounded by the absence of intermediaries who can manage certification, systems integration, and policy alignment, leaving technically proven ventures stuck at pilot stage. Catalytic capital (grants, first-loss equity, milestone-tied capital) helps bridge these gaps, but actors often work in silos without shared diligence or co-investment platforms.

Building Stronger Pipelines

The pipeline challenge in climate x health is not one of scarcity alone, but mismatch. Investors emphasized that many solutions exist but remain invisible, fall short of mandate requirements, or face deal-size mismatches. Addressing this requires an ecosystem-led approach, where governments, donors, and intermediaries co-develop pipelines alongside national or city-level climate x health strategies.

To surface more investable ventures, several strategies stand out:

- Partnering with regional incubators in diagnostics, digital health, or WASH to access technically validated early ventures.
- Running innovation challenges with embedded capital, combining grants or catalytic funding with pilot support.
- Engaging with government-led innovation platforms to secure early validation, regulatory buy-in, or co-funding.
- Tapping founder networks and angel syndicates to surface grassroots or overlooked innovations.
- Collaborating with academic and research and development (R&D) institutions to spin out ventures with strong scientific grounding and policy relevance.

⇒ **In summary**: There is no capital shortage, there is a coordination gap. Bridging the pilot-to-scale divide will require aligned capital stacks, structured venture support, and intermediaries that can translate impact into investment readiness.

3.3 Investment Approach: Flexible Structures, Context - Driven Logic

"We don't just look at commercial returns, we also track impact. For climate investments, that might mean measuring Green House Gases (GHG) emissions avoided or fossil fuels displaced. But for health, it's about lives touched. The more people a solution can reach or benefit, the more compelling it becomes. This kind of metric aligns especially well with adaptation-focused investments at the climate x health intersection, where traditional mitigation indicators often fall short."

While interest and fundraising for climate x health have accelerated, specially through new thematic funds and DFI-backed initiatives, the actual deployment of that capital remains slow due to a shortfall in ventures that meet the ***investment readiness threshold.*** Investible solutions remain scarce due to early-stage risk, unclear monetization, or lack of public-system readiness. Beyond this, private-sector capital has yet to step up meaningfully: most funding to date comes from philanthropies, while venture capital and impact funds remain hesitant to engage at scale. This lack of private-sector participation leaves a critical financing gap, slowing the transition from early pilots to commercially viable growth.

- **Signals of Investability:** For investors, the most credible ventures are those that clearly improve resilience, access, and productivity in low-resource settings. Practical deployment models, such as leasing, bundled delivery, or embedded finance, often outperform deep tech plays by offering faster adoption and scalability. At the same time, ventures that align with national mandates on health, disaster preparedness, or climate policy gain additional legitimacy, positioning them as lower-risk and more investable opportunities.

- **Institutional Payers Enable Growth**: Integration with public–private partnerships (PPPs), insurance, corporate social responsibility (CSR), or subsidy schemes is often necessary where end-users can't directly pay.

- **Founders with Contextual Fluency Are Preferred**: Teams with local knowledge and system navigation skills are favored over purely technical backgrounds, especially in public-facing solutions.

- **Values-Aligned Design Is a Differentiator**: Solutions that embed equity, environmental sustainability, or gender inclusion signal long-term resilience and mission integrity.

- **Scalable Delivery Over Standalone Technology:** Distribution-focused models, like mobile diagnostics, climate-adapted infrastructure, or WASH systems with monitoring, are prioritized over standalone technology.

- **Systems Integration Signals Market Readiness**: Ventures that align with institutional workflows (procurement, reimbursement, delivery) are more likely to attract capital and scale. Investors are more likely to support ventures that demonstrate institutional compatibility, meaning they are designed to plug into how governments, hospitals, or insurers already operate. These signals indicate go-to-market readiness at scale. Integration de-risks adoption and shortens the sales cycle, both of which are critical for venture capital timelines.
    - **Procurement Fit:** If a solution can be easily purchased through existing public tenders or aligns with government health budgets, it lowers the friction for scale and reduces dependency on consumer sales.
    - **Reimbursement Eligibility:** Ventures that align with insurance coding or public reimbursement schemes (e.g., Ayushman Bharat in India) show clearer pathways to recurring revenue. This reduces uncertainty and makes financial projections more robust.
    - **Operational Integration:** If a diagnostic tool or surveillance platform aligns with current disease surveillance workflows, electronic health records, or government health infrastructure, it boosts institutional uptake and reduces churn.

- **Flexible Instruments Fit Real Venture Needs**: Milestone-based equity, revenue-linked capital, and short-tenor debt offer better fit than traditional venture capital terms for climate x health ventures. Climate x health ventures are operating in markets with slower adoption, hybrid revenue models, and unpredictable scale curves, making classic equity structures (expecting rapid growth and clear exits) less suitable. Flexible tools improve alignment between capital expectations and venture realities, allowing patient, risk-managed exposure while supporting scale and preserving founder agency such as:
    - **Milestone-Based Equity:** Disbursing equity in tranches tied to clear impact, revenue, or policy integration milestones ensures investor protection while supporting early de-risking (e.g., post-pilot uptake, regulatory clearance).
    - **Revenue-Linked Capital:** Instead of demanding equity dilution, this structure lets investors recover capital as a share of revenue, ideal for ventures with

slower growth or service-heavy delivery (e.g., diagnostic logistics or decentralized cooling).

- **Short-Tenor, Low-Collateral Debt:** For asset-heavy but cash-generating models (e.g., cold-chain infrastructure, modular health clinics), short-term working capital loans or project finance-style debt is more suitable than equity.

- **Blended Finance Enables Early Validation**: Catalytic tools such as concessional debt, first-loss guarantees, and recoverable grants help bridge high-impact models to commercial readiness.

- **Aligned Capital Stacks Are Essential**: Coordinated engagement across philanthropic, DFI, ESG, and venture capital capital is key to supporting the full growth arc of climate x health ventures.

⇒ **In summary**: In Climate x health, investability is no longer about technology innovation alone. It's about context, delivery, flexibility, and alignment, with capital structures and public systems built to support complex, systemic solutions. Investors looking to deploy capital must either:

1. **Co-invest in readiness building**, by going beyond equity or debt to strengthen a venture's fundamentals, supporting business model validation, unit-economics testing, regulatory navigation, evidence generation, procurement readiness, and financial systems. Such support often takes the form of accelerators, technical-assistance grants, or milestone-based funding that reduces execution risk.

2. **Support intermediaries** that bridge early-stage gaps, such as regional accelerators, incubators, technical advisors, and catalytic fund managers who translate technical success into investable models. These actors convene blended-finance stacks, align ventures with public procurement, and curate pipelines for institutional investors, creating the connective tissue between promising solutions and scalable capital.

Without this bridge, even a well-funded investment strategy will face continual deployment friction.

3.4 Impact Measurement and Frameworks

Most funds still lean on broad ESG check-lists, which miss climate-specific health outcomes and slow due diligence. Investors prefer simple, auditable indicators that link directly to risk and revenue.

Practical early-stage Key Performance Indicators (KPIs)

Sample indicators can help ventures link climate x health impact to clear business value:

- Days with workplace heat index below 32 °C- links to worker productivity, absenteeism, and insurance costs.
- PM2.5 levels in target schools or clinics- connects to compliance with air-quality standards, reduced liability, and potential savings in healthcare costs.
- Average days from symptom report to public alert- reflects efficiency of surveillance systems, lowering outbreak risks and economic disruption.

By tracking such indicators, ventures can show investors how climate x health interventions reduce operational risks, open procurement channels, or unlock steady revenue streams, rather than relying on abstract impact metrics.

Investors call for a shared KPI library that maps each metric to an accepted data source and audit method. A table of proxy metrics available in Annex 4.

⇒ **In summary**: Investors need a small set of auditable climate-and-health KPIs, heat exposure, air quality and response speed, that fit existing ESG reporting and can scale with project risk.

3.5 Future Outlook: Pathways to Mainstreaming Climate x Health

The interviews point to five practical moves that could bring climate-and-health deals into the financial mainstream within the next five years.

1. **Clear taxonomy:** A widely used label for climate x health projects would let databases flag deals, help investors benchmark returns and allow regulators to set incentives.

2. **Public-sector anchor demand:** Government procurement, health-insurance reimbursements and sovereign guarantees can underwrite early volumes, lowering market-entry risk for private investors. Beyond these financial instruments, visible government buy-in and endorsement send strong credibility signals that attract other stakeholders, DFIs, donors, and commercial investors, by demonstrating sustained policy commitment to climate x health priorities

3. **Blended funds for the "missing-middle"**: Facilities that write one-to-three-million-dollar tickets mixing concessional debt, guarantees and equity would fill the gap between grants and Series A rounds.

4. **Shared KPI library**: A concise, open-access set of heat, air-quality and response-time indicators would cut due-diligence costs and speed investor approvals.

5. **Regional knowledge hubs**: Platforms that match ventures to finance and provide technical assistance would shorten learning curves and create faster feedback loops for successful models.

In the interviews, most respondents said these steps could raise the share of private climate capital flowing to health-linked projects in Asia from today's low single digits to around ten percent by 2030.

⇒ **In summary**: Climate x health solutions will scale when standards, anchor demand, fit-for-purpose funding and common metrics align, turning what is now a niche into a routine part of climate investing.

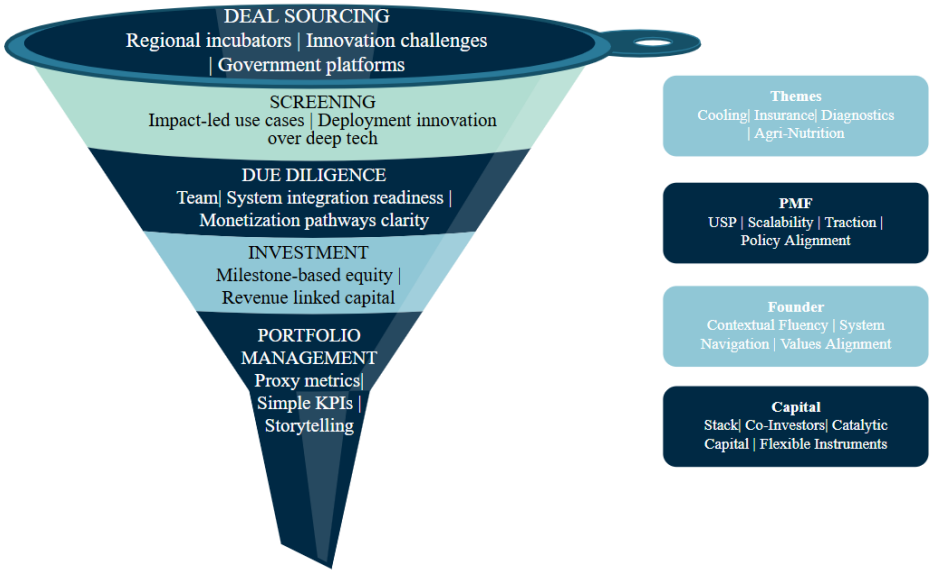
The climate x health investment landscape is still nascent, but patterns are emerging. Investors filter deals through multiple lenses, often dropping promising ventures due to early-stage risk, unclear policy support, or absence of blended pathways. The diagram below captures how investors screen, support, and structure climate x health deals, highlighting

common drop-off points and underscoring the need for catalytic capital, policy signals, and intermediary infrastructure to unlock scale.

The funnel illustrates five stages of capital movement, from sourcing deals to managing portfolios, while the side-bar captures what investors look for at each stage. Early steps involve sourcing through incubators, challenges, and government platforms, followed by screening for impact-led use cases. Due diligence focuses on team readiness and monetization clarity; investment typically uses milestone-based or revenue-linked models. In portfolio management, proxy metrics, simple KPIs, and storytelling track impact. Alongside these stages, investors weigh priority themes (cooling, insurance, diagnostics), product-market fit (PMF), founder attributes, and capital structuring options.

Chapter 4 builds on this by turning to two priority markets, India and Indonesia, where vulnerability, innovation, and investor traction converge. It also identifies emerging adaptation domains and solution case studies that respond directly to the investment logic surfaced here, offering tangible blueprints for those ready to lead the next wave of climate x health capital deployment.

How Investors Engage in CxH: A Funnel View of Capital Movement



4. Country Profiles

Why these four countries

India, Indonesia, the Philippines and Singapore show the range of climate-health risk and investment conditions in Asia: two large emerging economies, one high-risk island nation and one high-income finance hub. The table gives six headline indicators; for full data and sources, please refer to Annex 2.

Metric	India	Indonesia	Philippines	Singapore
Extreme-heat days in 2024	255	180*	190*	140*
Population in high-risk zones	> 90 %;	74 % of cities coastal	74 % multi-hazard	City-wide
Climate-linked health losses, 2023 (USD)	141 billion labour income[31]	21.7 billion labour income*	44.8 billion from air pollution	—
Climate-health policy status	National programme	Health in updated Nationally Determined Contribution (NDC)	Climate Budget Tagging	Heatwave Plan
Public pipeline / spend (USD)	1.5 billion	0.8 billion	24 billion	1.4 billion
Private Climate x Health inflow (USD)	~ 4 billion	3 billion	< 0.5 billion	> 0.6 billion

[31] Richa Sharma, "India Lost $141 Billion Worth of Income Due to Heat in 2023: Lancet Study," *Business Today*, October 30, 2024, https://www.businesstoday.in/india/story/india-lost-141-billion-worth-of-income-due-to-heat-in-2023-lancet-study-452074-2024-10-30.

*Latest national figure not published; estimate from ERA-5 *(Fifth-generation reanalysis dataset produced by the European Centre for Medium-Range Weather Forecasts (ECMWF) HEAT(Human thErmAl comforT) index.*

These four markets were initially selected to capture a spectrum of climate x health contexts in Asia: large emerging economies with scale and complexity, a high-risk island nation, and a high-income regional hub. They illustrate the diversity of vulnerabilities, policy environments, and investment conditions shaping the region.

From this set, India and Indonesia were shortlisted for deep-dive analysis using a country scoring matrix (Annex 1, Section 1.5). The scoring assessed investment readiness across three factors: (1) the maturity of the innovation environment, (2) the strength of the investment environment, and (3) the availability of aligned impact capital. While climate x health vulnerability was a shared backdrop, readiness to attract, absorb, and scale capital was prioritised as the decisive factor.

India and Indonesia scored highest on this composite readiness framework, reflecting dynamic innovation ecosystems, increasing flows of private and catalytic capital, and supportive policy momentum. They also account for a significant share of potential solutions innovations in AVPN's The Lighthouse Fund pipelines, underlining their relevance to current and future investors. Singapore, while ranking high on readiness, was positioned as a regional enabler rather than a primary deep-dive country due to lower domestic vulnerability. The Philippines, despite high exposure, ranked lower on near-term investability but remains relevant for longer-term engagement. For exact scores, definitions of "High," "Medium," and "Low," and detailed country comparisons, see Annex 1.

Furthermore, India and Indonesia, Asia's two largest emerging economies[32], stand at the epicenter of converging climate and health risks. Both are undergoing health system reforms, digital transitions, and climate policy shifts that position them as fertile ground for innovation. With robust GDP growth (India: 6.3%[33], Indonesia: 4.8%[34]), large-scale

[32] Times of India. "India, Indonesia Stand Out for Emerging Markets Investors in Aging World." *Times of India*, May 27, 2024.https://timesofindia.indiatimes.com/business/india-business/india-indonesia-stand-out-for-emerging-markets-investors-in-aging-world/articleshow/110449893.cms

[33] NDTV News Desk. "India's GDP Growth in 2025–2026 Estimated to Be Highest among G20 Nations: Report." *NDTV*, June 4, 2025. https://www.ndtv.com/world-news/indias-gdp-growth-in-2025-2026-estimated-to-be-highest-among-g20-nations-report-8584105

[34] World Bank. "Indonesia's Economy Remains Resilient Despite Global Headwinds." *Press Release*, June 23, 2025. https://www.worldbank.org/en/news/press-release/2025/06/23/indonesia-economy-remains-resilient-despite-global-headwinds

infrastructure programmes[35], and rising public-sector openness[36] to technology adoption[37], the two markets are showing momentum at the intersection of climate and health. Policy alignment, evolving capital flows, and early-stage ventures are starting to converge around this opportunity. For investors, the relevance lies in this scale, urgency, and early signs of systemic integration across health, climate, and digital infrastructure.

The following chapter compares India and Indonesia across four dimensions shaping climate x health investment readiness:

Policy architecture and capital flows	Institutional Enablers	Innovation & Pipeline	Exit pathways and return expectations

4.1 India

Overview

South Asia's largest market; heat alerts on 93 percent days in the year 2024.

Climate-health pressures

- High-heat exposure for > 90 percent of population
- Air pollution intensifies cardiovascular risk
- Coastal districts face storm-surge flooding

Capital flows:

Public: ≈ USD 1.5 billion through National Programme on Climate Change and Human Health (NPCCHH) and allied schemes

Private: ≈ USD 4 billion climate-tech since 2015, < 10 percent tagged for health

Institutional enablers:

NPCCHH requires state heat-health action plans; National Cooling Action Plan mandates cold-chain efficiency targets.

35 Times of India. "Digital Power Push: Centre Sets Up Task Force to Build India Energy Stack, Aims Seamless Data Access for Utilities and Consumers." *Times of India*, June 28, 2025.Digital power push: Centre sets up task force to build India Energy Stack, aims seamless data access for utilities and consumers - Times of India

36 Deloitte Southeast Asia. *Advancing the Potential of Indonesia's Smart Cities: Investment Opportunities and Financing Strategies*. Jakarta: Deloitte Southeast Asia, December 2024.id-fa-advancing-the-potential-of-indonesia-smart-city-report.pdf

37 Opengov Asia. 2020. "Indonesia: Digital Infrastructure Key to Attract Investment and Drive Industry 4.0." *Opengov Asia*, September 17.https://opengovasia.com/2020/09/17/indonesia-digital-infrastructure-key-to-attract-investment-and-drive-industry-4-0/

Innovation & Pipeline:
Nearly 70 start-ups work on cooling, air quality and disease analytics; ticket gap is USD 1-3 million bridge finance.

Exit pathway:
Public procurement letters plus Innovative Finance Facility for Climate (IFCAP) guarantees are creating a path for local commercial banks to refinance pilot-stage ventures at lower cost.

4.2 Indonesia

Overview
Archipelago nation; 75 percent of cities coastal, population 276 million.

Climate-health pressures

- Sea-level rise threatens 42 million people by 2050
- Dengue and malaria move uphill with rising temperatures
- Air-pollution episodes among Southeast Asia's worst, especially in the capital city of Jakarta

Capital flows:
Public: ≈ USD 800 million from Green Climate Fund (GCF), World Bank and national budget.
Private: > USD 3 billion mobilised via SDG Indonesia One blended-finance platform

Institutional enablers
Updated Nationally Determined Contribution (NDC) makes health a pillar; InaRISK dashboard guides district planning.

Innovation & pipeline
Smart-trap vector analytics, parametric micro-insurance and climate-linked health data hubs form the bulk of deal flow; same missing-middle ticket gap as India.

Exit pathway
DFI guarantees and concessional debt de-risk early pilots; successful ventures refinance into local Islamic-bank sukuk or corporate off-take agreements.

For detailed country snapshots, please refer to ***Annex 5***.

5. Investment Case Studies Across Priority Themes

This section profiles early-stage ventures in India and Indonesia that solve both climate and health problems. Investor interviews highlighted four priority themes : heat resilience, clean air and water, disease surveillance with risk finance such as parametric insurance and resilient health facilities as illustrative areas where capital and impact can grow together.

Before diving into case studies, it is worth underscoring that blended finance remains a critical priority, with catalytic capital playing a de-risking role that enables private investors to engage earlier and at scale. The four cases below illustrate how such blended structures can unlock health impact across Asia's climate hotspots..

5.1 Heat Resilience and Cooling Solutions

South and South-East Asia are getting hotter faster than they can cool. Up to 90 percent of India now sits in an extreme-heat danger zone, while Indonesian cities face humid heat without adequate cooling. More than three-quarters of surveyed investors named heat resilience as a top investment theme. India has drafted 37 Heat Action Plans; Indonesia issued its first National Cooling Action Plan in 2024, signalling public demand for market-ready cooling ideas.

Krosslinker's water-based aerogel provides low-cost, non-toxic insulation that cuts cold-chain energy use by five-fold. It ensures temperature-stable vaccine delivery in high-heat regions, lowering health-sector energy costs. Backed by ADB Ventures and a Temasek Foundation grant, Krosslinker is piloting with hospitals, logistics firms, and property developers across Asia. See Annex 6 for details.

5.2 Air and Water Quality

Air and water pollution now drive a significant share of premature deaths in both India and Indonesia. India ranks among the lowest globally on urban air quality and Indonesia also faces severe ambient PM□.□ exposure (fine particulate matter smaller than 2.5 microns that penetrates deep into lungs and bloodstream), which is one of its leading health risks. 87 percent of investors cited pollution control as a top adaptation priority. India's USD 1.7 billion

National Clean Air Programme and Indonesia's tighter 2023 air-quality standards are beginning to open new procurement pathways for market-ready solutions.

Devic Earth's Radio Frequency (RF)-based clean-air-as-a-service removes particulate matter without filters. The solution improves urban and industrial air quality, reducing exposure to major health risks. With city and industrial contracts in India, it demonstrates a scalable subscription model that is attracting growing investor interest. For further details, see Annex 6.

5.3 AI-Driven Surveillance and Climate-Linked Insurance Models

Rising temperatures are altering disease patterns intensifying climate shocks. As a response, governments in both markets are piloting AI-enabled early-warning systems, meanwhile parametric insurance is emerging as a fast-payout safety net for households and local authorities.

Weather Risk Management Services (WRMS) SecuRisk platform links climate data with parametric insurance to trigger automatic payouts when rainfall or heat crosses thresholds. This reduces disaster-driven health losses and boosts household resilience. The model is already serving Indian farmers and outdoor workers and is being considered for expansion into other Asian markets with donor and investor support.See Annex 6 for details.

5.4 Resilient Health Systems Infrastructure

Many low-income homes and community clinics overheat or flood, undermining health and productivity. Build Change's pilot in Indonesia shows how small housing loans plus digital technical advice let women-led households retrofit walls and roofs for cooler, safer living conditions. COVID-times, highlighted the resilience of health technologies such as telehealth and AI-enabled diagnostics to expand last-mile access, improving affordability, and reducing system strain even during climate-linked disruptions.

Build Change's Incremental Climate Adaptation Loan (ICAL) combines micro-loans with mobile guidance to help low-income households climate-proof their homes. The result is cooler, safer living spaces that reduce health risks from heat and flooding. Pilots in Indonesia

have shown strong adoption among women-led households, positioning the model for replication through microfinance and development investors. See Annex 6 for details.

Investor Snapshot: Priority Themes and Illustrative Ventures

Theme	Example Venture(s)	Country	Solution Focus
Heat Resilience & Cooling	Krosslinker	Singapore	Aerogel-Based Insulation for Cold Chain and Cooling
Air & Water Quality	Devic Earth	India	RF-wave "clean-air-as-a-service" for cities/industry
AI-Driven Surveillance and Climate-Linked Insurance Models	WRMS (SecuRisk)	India	Parametric insurance linked to climate thresholds
Resilient Health Infrastructure	Build Change	Indonesia	Micro-loans + mobile guidance for climate-proof housing

Across all four themes, the most successful ventures demonstrate strength not solely through their technical innovation, but because they align with three reinforcing enablers: access to catalytic or blended finance (e.g., first-loss equity, results-based grants, or concessional debt that lowers early risk), policy alignment (such as integration with national health missions, climate-adaptation plans, or clean-air and cooling mandates that create anchor demand), and inclusive delivery models (for example, women-led distribution networks, community health workers, or last-mile financing that ensure solutions reach vulnerable populations).

Strengthening the Enablers of Climate x Health Investment

The preceding case studies and thematic areas demonstrate that the climate x health investment landscape in India and Indonesia is no longer speculative, it is active, diverse, and increasingly investable. However, realizing the full potential of these innovations requires looking beyond product-market fit or commercial viability. The sustainable scaling and long-term adoption of climate x health solutions are contingent upon systemic enablers that underpin their success, namely institutional capacity, community behavior, inclusivity, and credible impact pathways. From those examples, we concluded:

First, ***capacity building is not an ancillary cost, it is core infrastructure***. Innovations such as WRMS's climate-linked insurance require frontline actors such as local health workers, community-based organizations, and microfinance partners who are trained, confident, and institutionally supported. For investors, technical assistance and skills development are emerging as smart de-risking strategies that accelerate uptake and long-term resilience.

Second, ***gender inclusion is a multiplier***. Women often bear the brunt of climate x health impacts, whether through caregiving roles, exposure to vector-borne diseases, or lack of access to adaptive infrastructure. The most investable climate x health solutions are those that intentionally expand women's access to assets, agency, and income, creating both social and financial upside. For instance, Build Change's retrofits in Indonesia offered loans and technical support to women-led households, enabling safer homes while strengthening credit and adoption. Gender-responsive models like these reduce risk, improve uptake, and enhance sustainability.

Third, ***behavior is the pivot from design to impact.*** Solutions such as Devic Earth succeeded not just because of technical novelty but because they embedded behavioral levers, changing how users, institutions, and systems respond to climate x health risks. Information, Education, and Communication (IEC) and local engagement are proving to be critical components of Return on Investment (ROI) and resilience.

Finally, ***credible impact pathways are what distinguish temporary interventions from durable change***. Investors are increasingly investing in ventures that can demonstrate multi-layered benefits, adaptation dividends, public system strengthening, and policy influence, not just immediate outputs. This shift demands adaptive measurement tools and cross-sector fluency. As the climate x health ecosystem matures, a portfolio approach that blends innovation with enabling infrastructure, capital, capacity, inclusion, and pathways, will be critical. For investors seeking to play a catalytic role in shaping the next decade of health resilience in Asia, designing with these enablers in mind will be essential to delivering both impact integrity and market success.

6. Investment Toolkit

As climate-mediated health risks intensify across Asia, investor interest is growing, but so does the complexity of making impactful investments. Solutions span sectors and models, from digital diagnostics and heat-resilient infrastructure to AI-based surveillance and parametric insurance. These ventures often fall between traditional venture capital, infrastructure, and impact investing frameworks, making conventional diligence insufficient.

Risk-return profiles vary widely depending on the maturity of the market, strength of enabling ecosystems, and scalability of the solution. For early-stage venture capital investors, the opportunity lies in identifying high-potential ventures navigating fragmented policy landscapes, nascent demand, and blended capital stacks.

This chapter offers a practical investment toolkit that helps investors assess ventures not only on intrinsic merit, product, team, model, but also on external conditions such as regulatory momentum, exit liquidity, and sector volatility. By combining a structured scoring grid with contextual risk adjusters, investors can calibrate ambition with realism, and deploy capital into investible solutions that are both investable and system-shaping.

The toolkit is built on three core components:

1. **Venture Score Grid** – A structured, multi-quadrant assessment covering the solution being considered for investment.
2. **Minimum Viable Score (MVS)** – A sector-adjusted baseline that sets the minimum composite score a venture should ideally achieve to be considered investment-ready, before applying any macro-level adjustments.
3. **Macro Risk Adjusters** – A set of external market and policy indicators that refine the Venture Score and the MVS to reflect real-world conditions.

The toolkit follows a ***modular structure***. ***Venture Scoring*** is its most fundamental component and should be applied in all cases. However, investors can tailor its use by adjusting weightages or deprioritizing specific quadrants of the scoring grid to match their priorities. The same flexibility applies to the ***macro risk adjusters***, which can be scaled up or down depending on portfolio strategy, sector focus, or deal stage.

While the following subsections present a 5 step assessment method as a complete toolkit for sufficiency, its modularity allows investors to apply the components most relevant to their mandate without losing analytical rigor.

6.1 Step 1: Investment Assessment Framework

To navigate the diversity and complexity of climate x health ventures, we propose a structured 4-quadrant assessment framework that creates the foundation for calculating the venture score. This framework helps investors evaluate each opportunity through four interlocking lenses:

Quadrant	Focus	Venture Capital Lens
1. Solution	Problem fit, early traction, scale	*Can this reach Product Market Fit fast and scale into a niche wedge?*
2. Team	Execution capability	*Can they build quickly, raise well, and adapt under pressure?*
3. Ecosystem	External enablers & signals	*Do the supportive conditions represent substantive tailwinds or are merely transient signals?*
4. Market Model	Path to returns & scale	*Is there a credible path to Series A or strategic exit?*

Each quadrant includes key diligence questions, red flags, and venture capital-specific cues that reflect early-stage realities as detailed below:

Solution: Innovation, Problem Fit & Traction

***Key Question**: Does the solution address a meaningful climate x health problem in a scalable, investable way?*

What to assess:

- **Problem clarity & relevance**: Is the climate x health linkage direct (e.g. respiratory illness, vector diseases) or indirect (e.g. cooling, early warning)?
- **Differentiation & defensibility**: Is there proprietary technology, contextual design for Low-and Middle- Income countries (LMIC) settings, gender intentionality or strong user experience for underserved segments?

- **PMF signals**: Pilots, Letter of Intents (LOIs), institutional interest, or public sector traction.
- **Scalability**: Can it expand geographically or into adjacent use cases? Is the product modular, Application Programming Interface (API) ready, or platform-capable?
- **Impact logic**: Clear theory of change, with measurable climate x health outcomes (resilience, co-benefits, equity metrics).

Red flag: Weak link to health or climate; insufficient evidence or technical foundation; overreliance on grant pilots with no transition to scale.

Venture capital cues:

- Invest in "land-and-expand" potential: Prioritize ventures that start by solving one acute, well-defined user problem (the 'wedge') and then expand into adjacent needs or markets. This lowers early risk, proves value, and creates a natural path to scale.
- Look for lean minimum viable products (MVP) with fast iteration and system-mapping that aligns with Sustainable Development Goals and globally recognized adaptation frameworks. /adaptation frameworks such as WHO's Operational Framework for Building Climate Resilient Health Systems (2015).

Team: Founders, Execution Readiness & Organizational Design

Key Question: *Is this a team that can navigate ambiguity and build at speed in complex markets?*

What to assess:

- **Founder–market fit**: Deep domain insight, lived experience, or a history of execution in public health/climate-tech.
- **Team agility**: Evidence of pivoting, iteration, or scaling in uncertain regulatory contexts.
- **Capital strategy**: Has the team raised diverse capital (e.g. catalytic, equity, grants) and shown strategic deployment?
- **Legal and operating structure**: Designed to absorb equity, enable blended finance, and report credibly.
- **Narrative coherence**: Can they sell the vision, attract talent, and instill confidence?

Red flag: Heavy grant dependence, no commercial roadmap, or unclear roles.

Venture capital cues:

- Early-stage is 80% of the team. Bet on ***adaptability, clarity, and coachability:*** At the early stage, success is largely about the team. Since products and models are still evolving, investors should assess ***founders' adaptability, clarity of vision, and coachability.*** A strong team can refine or reinvent a weak model, while a weak team will struggle even with a strong idea.
- Strong founders ***shape markets***, especially in frontier sectors like climate x health: In emerging fields where demand, regulation, and business models are still fluid, strong founders not only adapt to markets, they can help create them. They can do this by educating stakeholders, lobbying for enabling policies, building early partnerships with ecosystem players, and framing new value propositions that make niche solutions understandable to investors and user segments. Their credibility and persistence can attract de-risk capital, and set benchmarks that others in the space can follow.

Ecosystem: Policy Alignment & Institutional Momentum

Key Question: *Does the external environment support—or stall—the venture's growth?*

What to assess:

- **Policy alignment**: Is the venture riding existing mandates (e.g. India's Cooling Action Plan, Indonesia's Health National Medium-Term Development Plan?
- **Institutional demand**: Are governments or multilaterals likely anchor buyers or co-investors?
- **Sector momentum**: Public funding surges, consumer behavior shifts, or corporate compliance tailwinds?
- **Derisking architecture**: Presence of guarantees, blended finance facilities, or technical assistance (TA).
- **Regulatory clarity**: Smooth paths for licensing, data protection, insurance rules, or health-tech approvals.

Red flag: No visible champions in public systems; the sector is highly regulated with lack of clear entry path.

Venture capital cues:

- Track where system-level capital is flowing (such as MDBs, green bonds, donor-led programs).
- Prioritize ventures in fields where public funds or mandates create buyer certainty.

Market Model: Path to Returns & Strategic Alignment

Key Question: *Is there a sustainable and realistic business model that aligns with investor expectations?*

What to assess:

- **Revenue logic**: Is the venture selling to public, private, or donor clients? Are margins viable?
- **Capital efficiency**: Low burn rate, clear CAC (Customer Acquisition Cost)/LTV (Lifetime Value) logic, and strong early traction.
- **Exit pathways**: Strategic buyer landscape, public funder interest, or potential Series A follow-ons.
- **Valuation sanity**: Is the venture funding ask grounded in milestones, not aspirations?

Red flag: No willingness-to-pay validation, unclear monetization, or bloated valuation at early stage.

Venture capital cues:

- Returns will often come from asymmetric upside or category creation.
- Look for "non-linear" paths to liquidity such as DFI buyouts, milestone-based tranche funding, or Business to Government (B2G) contracts.

This framework helps investors distinguish between technically promising and commercially investable climate x health ventures, bringing clarity to a space where alignment, ambition, and execution must all converge.

6.2 Step 2: Calculating Venture Score (VS)

The 4-quadrant climate x health Investment toolkit offers a structured way to ***evaluate early-stage ventures*** across innovation, team strength, ecosystem alignment, and business model viability. This section translates that framework into a ***quantitative scoring system*** to support comparative assessment and investment decision-making.

Venture Level Scoring Grid

Each quadrant is scored out of 5 and broken into weighted sub-criteria, creating a total composite score on a **0–5 scale**.

Quadrant	Weight	Sub-Criteria (sample)
1. Solution	30%	Problem–Impact Fit (10%), Innovation Edge (10%), Traction & Scalability (10%)
2. Team	25%	Founder–Market Fit (5%), Execution Capacity (10%), Capital Stack Maturity (10%)
3. Ecosystem	15%	Policy Alignment (5%), Derisking Capital Access (5%), Institutional Partnerships (5%)
4. Market Model	30%	Business Model Viability (10%), Exit Potential (10%), Valuation Realism (10%)

Scoring Rubric (0–5 scale per sub-criterion)

Score	Interpretation
5	Strongly meets criterion; high investability
4	Adequately meets criterion, low concern
3	Neutral/untested; needs more diligence
2	Weak signal; requires strengthening
1	Misaligned or underperforming
0	No data / not applicable

Venture Score Interpretation

Score Range	Assessment Summary
4.0 – 5.0	High-potential pipeline; investor-ready
3.0 – 3.9	Strong prospects; requires light diligence or TA
2.0 – 2.9	Promising but high-risk; explore blended finance support
1.0 – 1.9	Pre-commercial; revisit post-pilot or after proof of use
< 1.0	Not investable at current stage

See Annex 7 for an example of how to calculate a Venture Score for a solution.

Note: Option to set Minimum Score Threshold for Ventures as a first-lens

A minimum threshold within Quadrant 1 (Solution) that ventures must meet to proceed can be added, if needed, especially if the venture is in untested/ nascent markets. For instance, a venture may require at least 80% (0.4 out of 0.5) on Problem–Impact Fit alone, or 60% (0.9 out of 1.5) across the first three dimensions-Problem–Impact Fit, Innovation Edge, and Traction & Scalability, before the remaining quadrants are evaluated. These thresholds can be tailored based on the investor's mandate and risk appetite.

Catalytic Capital Suitability Framework

A Catalytic Capital Suitability Framework, builds on the four-quadrant Venture Scoring grid. This light-touch filter identifies trigger conditions where catalytic capital can play a high-leverage role in de-risking or crowding in future investors.

Trigger for catalytic capital suitability	VS Quadrant	Logic	Interpretation
High Impact, Early Innovation	Q1: Solution	High on Problem–Impact Fit or Innovation Edge (≥80%), but Traction < 60%	Early-stage breakthrough; catalytic capital can validate or signal potential
Capital Stack Gap	Q2: Team	Capital Stack Maturity < 60%	Team is capable but hasn't raised or structured financing effectively
Ecosystem Relevance but Misalignment	Q3: Ecosystem	Policy Alignment or Institutional Partnerships ≥80%, but Derisking Capital Access < 60%	Strong systemic relevance, needs catalytic support to crowd in others
Low Commercial Traction	Q4: Market Model	Score < 60%	No clear path to revenue or exit; unlikely to attract venture capital in this round

Catalytic Suitability Score (0–4 scale):

Each trigger counts as 1 point. The total score can guide investor strategy:

CSI Score	Interpretation
3–4 (High)	Catalytic role is critical – venture unlikely to progress without it
2 (Medium)	Partial fit – may benefit from catalytic co-investment or de-risking
1 (Low)	Some gaps, but commercial capital is likely to step in
0 (None)	Venture is commercially viable; catalytic role not needed

6.3 Step 3 - Setting the Baseline: Minimum Viable Score (MVS)

Before applying any macro-level adjustments, investors need a clear baseline to assess whether a venture is investment-ready. This is captured through the ***Minimum Viable Score (MVS)***, the average composite score (on a 5-point scale) a venture must achieve across the four-quadrant framework to be considered for investment. MVS is the first screen, defining what counts as "investable" before market and investor realities are applied.

MVS serves as the primary filter for internal readiness. A venture scoring below this benchmark may lack the traction, maturity, or alignment needed to justify capital deployment, regardless of external conditions.

However, not all solution categories carry the same execution risk. For instance, deep-tech surveillance tools or parametric insurance models face steeper adoption and regulatory challenges than a proven digital health stack. Accordingly, MVS thresholds vary by sector, reflecting underlying complexity.

Indicative Base MVS by Solution Category:

Solution Category	Risk Level	Suggested Base MVS	Rationale
Digital Health Infrastructure	Low	3.2	Stable, high-frequency use cases (e.g., outpatient care, prescriptions), strong Business to Consumer (B2C) and Business to Government (B2G) demand signals in large user markets; well-defined regulatory frameworks, and existing integration with insurance/payors. Platforms typically have lower capex and tech-driven scalability. Repeat usage, digital literacy growth, and public health infrastructure alignment further reduce execution risk.
Solar Cooling / Clean Logistics	Low to Moderate	3.3 – 3.4	While capex-heavy and infra-dependent benefits from growing public procurement interest, alignment with adaptation and climate x health policies, and anchoring in essential services (e.g., maternal health, nutrition delivery). Pilots show strong anchor demand from government and Non Governmental Organizations (NGOs). Execution risk is moderate due to last-mile complexity, but hardware-leveraged business models are gaining traction.
Parametric Health Insurance / Risk Finance	Moderate–High	3.7 – 3.8	This category is innovative but unfamiliar, with nascent regulatory treatment and complex actuarial calibration. Requires robust data infrastructure (weather, epidemiology), and adoption depends on trust in payout logic. However, uptake is growing in South and Southeast Asia for disaster and health shock coverage. High systemic potential, especially when bundled with care delivery or risk pooling. Investors must navigate low consumer literacy and delayed monetization.

AI Surveillance / Remote Sensing	High	3.9 – 4.0	Deep-tech solutions with long development cycles, reliance on real-time public data, and sensitivity to data privacy and algorithmic bias. Adoption often depends on government integration or public health mandates, and trust is a major barrier. Monetization models (e.g., Software as a Service (SaaS) to governments, licensing to health authorities) are still emerging. Requires interdisciplinary capacity (technology + epidemiology + policy), and outcomes are often preventive and hard to attribute.

6.4 Step 4: Adjustment for Macro Risks

While the venture scoring grid provides a structured way to assess internal quality, across solution, team, ecosystem, and market model, investment decisions in the climate x health space must also reflect ***external market realities***. A strong venture may falter in a fragile ecosystem, while a moderate solution can scale rapidly in a favorable environment.

To bridge this gap, we introduce a ***macro-level adjustment layer***: four risk-adjusting coefficients that reflect broader market conditions, sectoral maturity, investor positioning, and exit climate. These modifiers help investors tailor scoring thresholds and expectations to the specific context in which a venture operates.

Macro Adjuster	Covers	Purpose
Sector Beta Modifier (SBM)	Execution risk and sector volatility	Adjusts MVS upward for higher-risk categories
Tailwind Coefficient (TWC)	Market momentum (policy, capital flows, demand signals)	Reflects ease of scaling and market readiness in MVS
Investor Risk Appetite Coefficient (IRAC)	Investor's own posture and fund strategy	Personalizes MVS to match risk thresholds and capital intent
Exit Market Health Coefficient (EMHC)	Liquidity and return outlook (IPOs, M&A, secondaries)	Adjusts the final Venture Score based on prevailing exit environment

Together, these four modifiers allow investors to ***balance micro-level readiness with macro-level feasibility***, ensuring that capital is deployed not only where the need is high, but where the odds of return and impact are realistically aligned.

The next sections unpack each adjuster in detail, including scoring logic, application method, and practical reference tables.

1. Sector Beta Modifier (SBM): Accounting for Execution Risk

The ***Sector Beta Modifier (SBM)*** adjusts MVS to reflect the inherent uncertainty and operational complexity of different climate x health solution categories. Borrowed from financial risk models, this modifier acknowledges that sectors vary in terms of regulatory hurdles, sales cycles, technological readiness, and capital intensity. SBM is applied as a multiplier to the base MVS. Higher-risk sectors receive a higher multiplier, raising the bar a venture must meet to qualify as investment-ready.

Indicative Sector Risk Tiers:

Sector Risk Category	Sector Beta
High-risk	1.25
Medium-high	1.15
Medium	1.00
Low - Medium	0.85
Low	0.80

The following table can be used as a quick scoring reference to help investors assign the appropriate **SBM multiplier** based on the operational risk profile of a climate x health solution—factoring in technological maturity, regulatory friction, scale complexity, and capital intensity.

Dimension	High Risk (SBM = 1.25)	Medium Risk (SBM = 1.00–1.15)	Low Risk (SBM = 0.80–0.85)
Technology Maturity	Deep-tech or experimental models (e.g., AI surveillance, parametric insurance)	Emerging but proven tech (e.g., at-home diagnostics, microgrids, IoT health tools)	Off-the-shelf or mainstream digital infra (e.g., telemedicine platforms)
Regulatory Complexity	Unclear frameworks, high compliance burden (e.g., insurance, health data use)	Partial regulatory coverage; evolving compliance (e.g., diagnostics, public health tech)	Low-friction sectors with existing standards (e.g., logistics, cooling)

Capital Intensity	High upfront capex, long gestation (e.g., resilient infra, sensors)	Moderate capital needs, phased deployment possible	Lean infra-light models; high tech-to-capex ratio
Path to Scale	Long public procurement cycles, policy dependency	Mixed pathways—some private, some public	Quick-to-market B2C/B2B models with replicability

This risk-adjusted MVS better reflects the reality that a 3.5 in a high-beta sector may be less robust than a 3.5 in a proven or de-risked one.

2. Tailwind Coefficient (TWC): Reflecting Market Momentum

The ***Tailwind Coefficient (TWC)*** adjusts for the external enabling conditions that determine how easily a solution can scale—specifically:

- **Policy environment** (legislation, mandates, public procurement),
- **Capital flows** (grants, venture capital, blended finance), and
- **Consumer demand** (B2C and B2G appetite, affordability, uptake).

Tail Wind Co-efficient is applied as a divisor to the Minimal Viable Score —meaning ventures in high-momentum sectors are evaluated more generously, while those in underdeveloped markets must prove stronger internal readiness.

Tailwind Band Guide:	
Sector Conditions	TWC
Strong tailwinds	1.15
Moderate tailwinds	1.00
Weak or Contracting tailwinds	0.85

The following table can be used as a quick scoring reference when assigning TWC for a particular solution or theme in the assessment tool.

Dimension	Strong Tailwinds (TWC = 1.15)	Moderate Tailwinds (TWC = 1.00)	Weak/Contracting Tailwinds (TWC = 0.85)
Policy Environment	Clear mandates, budget-backed programs, institutional ownership	Stated intent, early pilots, limited enforcement or budget	Fragmented mandates, siloed policies, no clear government anchor

Dimension	Strong Tailwinds (TWC = 1.15)	Moderate Tailwinds (TWC = 1.00)	Weak/Contracting Tailwinds (TWC = 0.85)
Capital Flows	High DFI/multilateral inflows, active venture capital/PE, catalytic vehicles present	Mixed flows, grant-dependent, low local venture capital traction	Sparse capital, weak pipeline, donor over-reliance
Consumer Demand	Strong user pull, rising adoption, visible B2C/B2B appetite	Early adopters, public sector still main buyer	Low awareness, weak demand signals, limited willingness to pay

3. Investor Risk Appetite Coefficient (IRAC): Calibrating for Fund Strategy

The ***Investor Risk Appetite Coefficient (IRAC)*** personalizes the assessment tool by adjusting the required MVS based on the investor's current approach-bold, balanced, or defensive. It ensures that the scoring grid remains adaptable to fund cycles, LP mandates, and broader market sentiment.

IRAC is applied as a divisor to the MVS. The bolder the investor, the more tolerant they are of uncertainty and the lower their effective threshold for investability.

Investor Posture Framework:

Fund Risk Posture	Description	IRAC
Bold (Frontier bets)	Actively backing pre-revenue models, early category builders, or markets ahead of regulation	1.10
Balanced (Selective risk)	Prefers de-risked early-stage bets, strong teams, or models with public co-buyers	1.00
Cautious (Downside-protected)	Seeks strong traction, proven revenue, and solid co-investor presence	0.90
Defensive (Preservation mode)	Rarely investing; focusing on low-volatility, post-commercialization deals	0.85

This input is set by the investor themselves, based on internal risk mandates, LP expectations, or current dry powder. It ensures that a frontier venture isn't held to the same standard by a catalytic venture capital as by a late-stage, defensive fund.

4. Exit Market Health Coefficient (EMHC): Gauging Liquidity Signals

The ***Exit Market Health Coefficient (EMHC)*** adjusts the *venture's final score*, not its threshold. It reflects capital market sentiment, specifically the likelihood, pricing, and timing of exits through initial public offering (IPOs), acquisitions, or DFI anchor deals.

EMHC is applied as a ***multiplier*** to the final venture score. A bullish exit market boosts the attractiveness of a deal, while bearish conditions apply a discount, even to strong ventures.

Exit Environment Bands:

Exit Conditions	EMHC	Markers
Bullish	1.2	Multiple recent exits, strong DFI presence, active secondaries
Neutral / Stable	1.0	Selective exits, slow but possible M&A, occasional strategic interest
Bearish	0.8	Exit drought, venture capital hesitation, down-rounds, weak comparables

6.5 Step 5 - Investment Decision Framework

This section integrates ***venture-level scoring*** with ***macro-level adjusters*** to arrive at a final investment decision that reflects both internal readiness and external risk dynamics. It draws from the principle that even high-scoring ventures must be judged within the realities of their market.

First: Calculate Risk-Adjusted Minimum Viable Score (RA-MVS)

The base MVS is adjusted to reflect macro-level realities using three external risk coefficients:

- **SBM**: Sector volatility
- **TWC**: Market tailwinds (policy, demand, funding)
- **IRAC**: Investor's risk posture

Formula:

RA-MVS = (Base MVS × SBM) divided by TWC / IRAC

Second: Adjust Venture Score for Exit Market Health Coefficient (EMHC)

The broader market's exit conditions are applied to the Venture Score to contextualize the overall attractiveness of the deal. This is ***not used to raise or lower the investor's bar*** (like RA-MVS), but rather to ***adjust the final venture score*** for prevailing exit environments.

Formula:

Adjusted Venture Score = Venture Score × EMHC

Finally, Make Investment Decision

Now compare the two values:

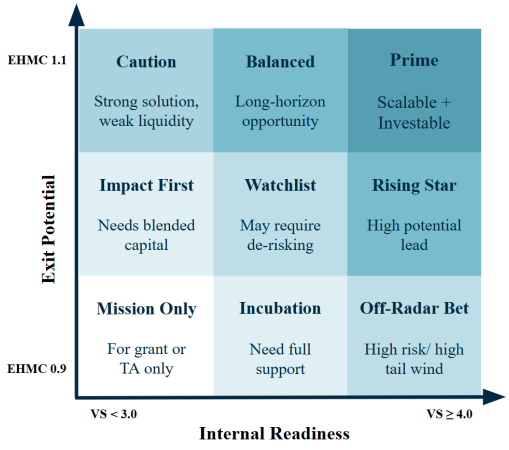
- **If Adjusted Venture Score ≥ RA-MVS** → Investable; proceed with due diligence
- **If Adjusted Venture Score < RA-MVS** → Proceed with caution, reconsider risk appetite or explore blended finance/de-risking instruments.

This framework offers investors a transparent, modular, and analytically grounded method to assess early-stage climate x health ventures. It combines micro (venture-level) scoring with macro (market- and investor-level) adjustments to reduce noise and align investment decisions with systemic realities.

6.6 Tiered Risk–Return Map for Pipeline Building

This matrix offers a dual-lens assessment, combining a venture's internal readiness (Venture Score) with the external exit environment (EMHC). It supports segmentation of opportunities across venture capital, blended, and catalytic strategies, allowing investors to match risk-return appetite with pipeline fit.

Venture Score \ EMHC	EMHC: Bearish Market (0.90	EMHC: Neutral Market (1.0)	EMHC: Bullish Market (1.10)
≥ 4.0 (High Readiness)	**Caution** — Strong fundamentals, but limited liquidity. Suitable for long-horizon or mission aligned capital.	**Balanced Bet** — Investable venture in a stable market. Potential for strategic or blended exits.	**Prime Deal** — Strong venture in a strong market. Ready for scale, likely exit candidate.
3.0 – 3.9 (Moderate Readiness)	**Impact-First Play** — Needs catalytic capital or de-risking to reach investability.	**Watchlist** — Promising but needs traction, partnerships, or price rationalization.	**Rising Star** — Strong upside in improving markets. Anchor or co-lead potential.
< 3.0 (Low Readiness)	**Mission-Only** — Grant, TA, or incubation-only zone. Not venture capital-suitable yet.	**Incubation Play** — May mature with targeted support, especially in underserved geographies.	**Off-Radar Bet**— High-risk/high-reward. Consider only with strong tailwinds and deep conviction.



It is useful as a **visual prioritization tool** during pipeline reviews, internal IC discussions, or fund strategy alignment.

For ventures in the middle zones (3.0–3.9), co-investment or conditional capital may be most effective.

6.7 Key Risks, Impact, and Mitigation Strategy

While the Climate x Health scoring framework supports structured investment decisions, early-stage ventures, especially in low-margin, high-complexity sectors, carry meaningful execution and contextual risk. These risks span across the four quadrants of the framework. Identifying and mitigating them is crucial to protecting capital, reducing scale barriers, and improving long-term outcomes.

Risk Type	Potential Impact	Mitigation Strategy
Quadrant 1: Solution		
Weak or indirect climate x health linkage	Undermines catalytic capital appeal; poor alignment with climate x health mandates	Require clear theory of change; third-party validation; align with SDG or National Adaptation Plan (NAP) priorities
Unvalidated product-market fit	Poor adoption, weak metrics, capital inefficiency	Fund small pilots with milestone-based release; track real user engagement
Inadequate adaptation to low-resource settings	Operational failure; inequitable access	Co-design with last-mile users; conduct environmental stress-testing
Prototype-heavy with unclear scaling path	Low ROI; investor fatigue	Prioritize modular or interoperable models; build and test scale logic early
Quadrant 2: Team		
Inexperience with public/informal systems	Slow procurement, failed government partnerships	Add public sector advisors; TA for government engagement
Overdependence on founder	Institutional fragility; fundraising roadblocks	Broaden leadership bench; governance tools like Employee Stock Ownership Plans (ESOPs) and advisory boards
Weak operational systems	Compliance issues; difficulty absorbing capital	Capacity-building support; use accelerators focused on health/infra markets
Leadership churn or drift from mission	Strategic instability	Maintain alignment clauses; board oversight; invest in team cohesion
Quadrant 3: Ecosystem		
Volatile or misaligned policies	Operational delays, loss of traction	Track policy cycles; co-invest alongside aligned programs
No anchor buyer in system	Revenue volatility; scale stalls	Engage early with health/public institutions; design for system fit

Risk Type	Potential Impact	Mitigation Strategy
Weak infrastructure (e.g., power, roads)	Field delivery failures	Use distributed or mobile-first solutions; partner with infra startups
Fragmented regulatory markets	Difficult multi-region scale	Localize strategy per region; align with state-level missions or donors
Quadrant 4: Market Model (Revenue, Pricing, Exit)		
Unclear paying customer	Unsustainable revenue; high churn	Test B2B/B2G/B2C pricing logic; pilot pay-per-use or outcome-linked models
Grant reliance with no revenue path	Investor fatigue; scaling blocked	Phase in earned revenue streams; stack capital across instruments
Low affordability in LMIC markets	Stifled uptake; margin compression	Design for affordability; consider subsidy layering or pooled demand
No visible exit path	Long capital lock-up; exit hesitancy	Identify potential buyers early; explore royalties, convertibles, revenue-linked notes

The Climate x health Investment Toolkit offers investors, funders, and ecosystem actors a structured way to navigate a fragmented market. By mapping solutions across the readiness, impact quadrants and scoring them on the indicators outlined earlier, the toolkit enables quick visualisation of where opportunities sit, from early-stage pilots needing catalytic grants, to scale-ready ventures positioned for commercial capital.

Beyond static assessment, the toolkit can serve as a living market-intelligence resource. Users can revisit and re-score ventures as they mature, track shifts in enabling policies, and identify when solutions are ready to transition from one quadrant to the next. Over time, the database generated through repeated application can also serve as a lead-generation engine for both grant-makers and venture capital funds, pointing them towards opportunities aligned with their mandate and risk appetite.

The next step is to test the toolkit in live deal-flow settings, for example, through investor roundtables, accelerator cohorts, or blended-finance platforms, and refine its indicators based on user feedback and observed investment outcomes. As adoption grows, the toolkit can evolve from an assessment framework into a shared market-building asset that accelerates the flow of capital into Asia's most promising climate x health solutions.

Next Moves - Climate x Health Investments in Asia

Climate x health intersection is emerging as one of the most consequential investment frontiers in Asia. With rising demand, a growing startup base, early policy traction, and maturing capital infrastructure, the region is primed for catalytic investment. Asia's climate x health market has moved from idea to investable reality, but scale will hinge on four systemic enablers that investors can build into every deal.

Capacity is core infrastructure. Front-line actors, from farmers to community nurses, need training, tools and institutional support. Technical-assistance and skills budgets are therefore not side costs; they are smart de-risking investments that speed uptake and strengthen long-term resilience. ***Gender inclusion multiplies returns.*** Women carry disproportionate climate x health burdens yet control critical household and community levers. Ventures that expand women's assets, agency and income consistently outperform on both social and financial metrics.

Behaviour change is the bridge from design to impact. Solutions such as Devic Earth's clean-air service succeeded because they embedded information, education and local engagement, shifting how users and systems act on risk. ***Credible impact pathways distinguish pilots from durable change.*** Investors are backing ventures that can show layered benefits, adaptation dividends, system strengthening and policy influence, not just outputs. This demands adaptive metrics and cross-sector fluency .

Capital alone, however, is insufficient. Converting current momentum into scalable and sustainable impact requires investors—particularly venture capital and blended finance actors—to move beyond conventional frameworks. Unlocking durable value demands ***a bridging approach rather than siloed action.*** Such bridges must link climate x health mandates, early-stage innovation with long-term resilience, and localized experimentation with system-wide transformation. Achieving this will necessitate patient capital, flexible financial instruments, and ecosystem enablers that extend beyond financing, including public–private partnerships, regulatory support, and narrative alignment. In addition, effective alignment must encompass the integration of finance with public procurement processes, regulatory cycles, and community behaviors to ensure that innovative models transition into mainstream systems. The models that succeed in this regard will not only generate financial returns but also establish new benchmarks for inclusive, climate-resilient growth.

The opportunity is clear: ***shape the market now, or risk missing one of the most transformative capital shifts of the decade.*** Investors who lean in early with sharper frameworks, blended instruments, and a readiness to invest ventures that build systems, not just products stand to unlock not only measurable impact but durable value.

This is not just a risk lens, it is an inter-generational investment opportunity. The question is not whether capital should flow here, but ***how soon, how smartly, and how equitably*** it can be deployed.

The current moment calls for a shift from recognition to redirection, and from fragmented pilot initiatives to systemic scaling. When executed effectively, the returns will extend beyond financial gains, encompassing improved health outcomes, strengthened and climate-resilient systems, and a future in which resilience is proactively built rather than reactively purchased.

Annexes

Annex 0

Guide to Abbreviations and Acronyms

ADB	*Asian Development Bank*
AI	*Artificial Intelligence*
AIIB	*Asian Infrastructure Investment Bank*
AIM	*Atal Innovation Mission*
ATACH	*Alliance for Transformative Action on Climate and Health*
BCtap	*Build Change Technical Assistance Platform (BCtap)*
BIRAC	*Biotechnology Industry Research Assistance Council*
CAC	*Customer Acquisition Cost*
CAGR	*Compound Annual Growth Rate*
CGIAR	*Consultative Group on International Agricultural Research*
CEWS	*Climate Early Warning System*
CMS	*Catalyst Management Services*
CSR	*Corporate Social Responsibility*
Climate x Health	*Climate and Health*
CCC	*Climate Change Commission*
DALYs	*Disability-adjusted life years*
DFIs	*Development Finance Institutions*
LEEDS	*Leadership in Energy and Environmental Design*
LT-LEDS	*Long -Term Low Emission Development Strategy*
LOI	*Letter of Intent*
LTV	*Lifetime Value*
M&A	*Mergers and Acquisitions*
MDBs	*Multilateral development banks*
MFI	*Microfinance Institution*
MHEWS	*Multi-Hazard Early Warning System*
MVS	*Minimum Viable Score*
NAPCC	*National Action Plan on Climate Change*
NASSCOM	*National Association of Software and Service Companies*
NDC	*Nationally Determined Contributions*
NPCCHH	*National Programme on Cli mate Change and Human Health*
NAP	*National Adaptation Plan*
NCCS	*National Climate Change Secretariate*
NCID	*National Centre for Infectious Diseases*
NCAP	*National Clean Air Programme*
NIIF	*National Investment and Infrastructure Fund.*
PE	*Private Equity*

DFAT	*Department of Foreign Affairs and Trade.*
D-TECH	*Disaster technology*
DOH	*Department of Health*
EMHC	*Exit Market Health Coefficient*
ESG	*Environmental, Social, and Governance*
FCDO	*Foreign, Commonwealth and Development Office*
GIF	*Global Innovation Fund*
GCF	*Green Climate Fund*
GIC	*Government of Singapore Investment Corporation*
GIIN	*Global Impact Investing Network*
HAP	*Heat Action Plans*
I-NCAP	*Indonesia- National Cooling Action Plan*
ICAL	*Incremental Climate Adaptation Loans*
IEC	*Information, Education, and Communication*
IFCAP	*Innovative Finance Facility for Climate*
IRAC	*Investor Risk Appetite Coefficient*
IRR	*Internal Rate of Return*
JICA	*Japan International Cooperation Agency*
KPIs	*Key Performance Indicators*
PM	*Particulate matter*
PMFBY	*Pradhan Mantri Fasal Bima Yojana*
PPP	*Public Private Partnership*
PYI	*Person-Year of Income*
PLI	*Product linked incentive*
R&D	*Research & Development*
RF	*Radio-frequency*
ROI	*Return on Investment*
SAPCCHH	*State Action Plans on Climate Change and Human Health*
SBM	*Sector Beta Modifier*
SDG	*Sustainable Development Goals*
SEBI	*Securities and Exchange Board of India*
SaaS	*Software as a Service*
TA	*Technical Assistance*
TWC	*Tailwind Coefficient*
UNDP	*United Nations Development Programme*
UNEP	*United Nations Environment Programme*
UNFCC	*United Nations Framework Convention on Climate Change*
WASH	*Water, Sanitation, and Hygiene*
VBD	*Vector-Borne Diseases*
WHO	*World Health Organization*
WRMS	*Weather Risk Management Services*

Finance terms

Term	Short definition
Adaptation finance	Capital aimed at reducing vulnerability to climate impacts rather than cutting emissions.
Blended finance	Use of concessional money to attract additional commercial investment in the same deal.
Catalytic capital	Flexible or concessionary funding is provided to mobilise other investors.
Concessional debt	Loans below market rate, often carrying a first-loss position.
Credit enhancement	Guarantees or other tools that lower perceived risk and improve borrowing terms.
Crowd-in	Private capital attracted as a result of public or concessional investment.
Currency hedging	Instruments that protect against foreign-exchange losses.
Debt-for-climate swap	Sovereign debt relief exchanged for domestic climate or health spending.
First-loss tranche	Capital layer that absorbs initial losses to protect senior investors.

Guarantee	A pledge that covers lenders if the borrower defaults.
Layered capital stack	Combination of grants, debt and equity arranged by risk tier.
Mezzanine finance	Hybrid of debt and equity that sits between senior debt and common equity.
Missing-middle	Funding gap between small grants and larger commercial rounds.
Outcome-based instrument	Investors are repaid only when agreed health or climate targets are met.
Parametric insurance	Payouts triggered by an index such as temperature or rainfall.
Patient capital	Long-tenor investment that accepts delayed returns.
Revenue-based loan	Debt repaid as a set share of future revenues.
Results-based financing	Disbursements released only when performance milestones are achieved.
Social impact bond	Private investors fund services and are repaid by an outcome payer if targets are met.
Subordinated debt	Debt that ranks below senior loans in case of default.
Technical-assistance facility	Grant funding for project preparation and capacity building.
Ticket size	Amount of capital provided in a single investment round.

This glossary covers the terms most frequently used in the report.

Annex 1-Scope and Methods

1.1 Methodology

The study followed a four-phase process.

1. **Desk research and landscape mapping** across India, Indonesia, the Philippines and Singapore.
2. **Country prioritisation** using a scoring tool that weights innovation environment (30 percent), investment environment (30 percent) and impact-capital availability (40 percent).
3. **Stakeholder engagement** through in-depth interviews and an online survey with investors, multilateral banks and ecosystem builders. The discussion guide covered five themes: priorities, pipeline, risk and return, impact, and policy.
4. **Tool design and validation** in a virtual peer-review session where the draft investment matrix was tested and refined.

This investment landscape draws primarily from in-depth interviews with venture capital and catalytic funders, with a focus on early-stage capital. While applicable to broader stakeholders, the findings foreground a venture capital perspective.

1.2 Key assumptions

- Climate x health adaptation is investable yet under-explored by private capital.
- Existing finance-tracking systems under-count deals because few are labelled climate x health.
- India and Indonesia can generate scalable models when enabling conditions improve.
- Insights drawn from a targeted investor cohort are directional rather than statistically representative.
- A venture capital lens underpins the current version, though the toolkit is modular, its metrics and weightings can be recalibrated for use by other investor types as needed.

1.3 Limitations

- The interview sample is small and illustrative.
- Data are current to June 2025 and may shift with policy or market changes.
- Findings from India and Indonesia may not apply unchanged to other countries.
- Inconsistent taxonomies make cross-country deal tracking difficult.
- Geopolitical or macro-economic shocks could change investor behaviour beyond this study's scope.

1.4 Documents included in this annex

Country-scoring matrix

Dimension	Metric	Indicator	India		Indonesia		Philippines		Singapore	
			Rating	Score	Rating	Score	Rating	Score	Rating	Score
Innovation Environment		Health-tech start-up ecosystem maturity	High	3	Medium	2	Low	1	High	3
		Climate-tech start-up activity	Medium	2	Medium	2	Medium	2	High	3
		Availability of incubators & accelerators	High	3	Medium	2	Medium	2	High	3
	Total Score			**8**		**6**		**5**		**9**
	Average Score			**0.9**		**0.7**		**0.6**		**1.0**
	Weighted Score 30%			**0.27**		**0.20**		**0.17**		**0.30**
Investment Environment		Ease of doing business	Medium	2	High	3	Medium	2	High	3
		Political stability	Medium	2	Medium	2	Medium	2	High	3

		Regulatory environment for health	Medium	2	Medium	2	Low	1	High	3
		Climate investment policy	Medium	2	Medium	2	Low	1	High	3
	Total Score			**7**		**9**		**6**		**12**
	Average Score			**0.6**		**0.8**		**0.5**		**1.0**
	Weighted Score 30%			**0.18**		**0.23**		**0.15**		**0.30**
Impact Capital Availability		CSR expenditure in climate x health relevant sectors	High	3	Medium	2	Medium	2	Low	1
		Presence of ESG/SDG-aligned investors	Medium	2	Medium	2	Medium	2	High	3
		Local philanthropy & family office activity	High	3	Medium	2	Medium	2	High	3
		Donor & multilateral climate x health fund presence	High	3	High	3	Medium	2	Medium	2
	Total Score			**11**		**9**		**8**		**9**
	Average Score			**0.9**		**0.8**		**0.7**		**0.8**
	Weighted Score 40%			**0.37**		**0.30**		**0.27**		**0.30**
		Total Score		**0.81**		**0.73**		**0.58**		**0.90**

Dimensions and Weightage
Innovation Environment – 30%
Maturity of health-tech and climate-tech ecosystems, Availability of incubators, accelerators, and innovation support networks.
Investment Environment – 30%
Ease of doing business, Political and regulatory stability for climate x health investments, Existence of supportive climate x health policies.
Impact Capital Availability – 40%
Presence of CSR funding, ESG/SDG-aligned investors, local philanthropy, and donor interest focused on climate and health sectors.

Scoring & Range
1 = Low Readiness
Weak innovation ecosystem, poor investment climate, limited access to capital.
2 = Medium Readiness
Emerging innovation and investment ecosystem, moderate enabling conditions.
3 = High Readiness
Strong innovation hubs, favorable investment environment, abundant capital and policy support.

Interview Guide

Section 1: Strategic Fit & Market Signals

1. Why does the climate x health space matter to you?
2. Despite alarming data on climate x health-related economic damage in South and Southeast Asia, capital allocation remains modest.
3. Which Asian economies are most exciting to you for the climate x health transition?
4. There seems to be an investment bias toward mitigation over adaptation in climate x health.
5. How do you assess the risk of 'greenwashing' in climate x health deals?

Section 2: Market Dynamics & Investor Behavior

6. Do you find valuations in the climate x health space inflated, or is it still a buyer's market?
7. Is the broader market overheated?
8. Are early-stage tech founders now leaning more toward Big Tech Mergers and Acquisitions (M&A) over venture capital capital?
9. How do state-backed venture capital funds influence the climate x health investment landscape?
10. Is the 'funding winter' impacting climate x health, or are these companies somewhat insulated due to their real-world value proposition?

Section 3: Investment Approach & Target Evaluation

11. When evaluating companies, do you prioritize economic value creation over green impact or are they intertwined?
12. Do you lean more toward supporting solutions that scale proven technologies, or moonshot innovations?
13. Does a focus on revenue-generating markets steer you away from low-income geographies even if those are the ones most in need of climate x health solutions?
14. How do you typically source your pipeline in this space?
15. What specific financial or structural markers do you look for when evaluating a climate x health company?
16. How do you de-risk investments in early-stage or frontier climate x health ventures?

Section 4: Value Creation, Exit & Future Outlook

17. Are startups in this space turning to venture capitals for more than just capital—e.g., global market access, partnerships, credibility?
18. How has your portfolio performed in this sector from an RoI perspective?
19. Can you share a success story — a portfolio company that reflects your ideal climate x health investment?
20. Looking 3–5 years ahead, what trends do you foresee in climate x health investment?

Annex 2 — Country Snapshots

This annex presents a concise, side-by-side look at the four study countries. Each profile follows the same structure, climate vulnerability, population at risk, policy signals and an investment snapshot, so readers can compare gaps and opportunities quickly. Detailed narratives, data tables and sources are kept here; the main report shows only headline figures.

2.1 India

Component	Summary (with data points)
Climate Vulnerability	6th in Climate Vulnerability Index; 255 of 274 days of extreme heat (2024)[38]; over 400 extreme events in 30 years, causing 80,000 deaths, $180B losses[39].
Population Vulnerability	17% urban poor in slums[40]; 250M coastal residents at risk[41]; farmers face erratic rains[42]; elderly, children highly heat-vulnerable[43].
Public Health Impact	700 heat deaths 2024[44]; 1.6M deaths (2021)[45], 1.6M deaths/year from air pollution[46]; dengue transmission now 5.6 months/year[47],34M jobs at risk by 2030 due to heat[48].

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Policy Environment	National Programme on Climate Change and Human Health (NPCCHH), 2019; Long-Term Low Emission Development Strategy (LT-LEDS), 2022[49]; National Adaptation Fund for Climate Change (NAFCC) $120 million for state-level health adaptation[50]; State Action Plans on Climate Change and Human Health (SAPCCHH)[51].
Health Systems	40% districts at high climate risk; gaps in elevated facilities, backup power, flood-proofing[52]
Investment Landscape	Growing venture capital + public investment (e.g., JICA $347M Assam)[53]; NIIF ($4.9B AUM)[54], philanthropy bridging early-late stage gaps; Climate & Health Hub in Delhi[55].

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2.2 Indonesia

Component	Summary (with data points)
Climate Vulnerability	42M at sea-level rise risk by 2050[56]; $16.8B losses over 15 years[57]; 3,000 heat-stress hours/year; dengue climate suitability ↑13%.[58]
Population Vulnerability	28.8% in agriculture; urban poor in flood zones[59]; elderly, children, pregnant women at elevated risk.
Public Health Impact	621 dengue deaths, 88,593 cases (early 2024)[60]; 289,000 air pollution deaths/year[61]; $21.7B labor income loss (2023)[62]; leptospirosis, diarrheal spikes during floods.
Policy Environment	NDC (2021),National Adaptation Plan (RAN-API); $5M GCF[63]-supported climate-resilient health system initiative, 2024; Health Omnibus Law.[64]; CEWS, MHEWS, InaRISK, SIDIK tools[65]; multi-source funding (ADB, WB, GCF)[66]

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Health Systems	Frequent flood/disaster damage; Sulawesi (2018) left 375,000 children without basic health services; health worker dual burdens[67].
Investment Landscape	$4B WB-ADB-AIIB-IsDB national health reform investment[68]; early-stage climate-tech ecosystem, limited growth equity.

2.3 Philippines

Component	Summary (with data points)
Climate Vulnerability	Top of World Risk Index 3 years[69]; 74% population in multi-hazard zones[70]; sea-level rise 13.24 mm/year Manila Bay[71]; $3.8B agri losses (2006–2013)[72].
Population Vulnerability	Urban poor in flood-prone areas; indigenous farmers face crop losses; 44.7% food insecurity[73];
Public Health Impact	7 heat deaths, 77 cases (Jan–Apr 2024)[74]; 66,230 air pollution deaths/year ($44.8B cost)[75]; dengue, malaria, leptospirosis rising; post-disaster mental health toll; GBV risks in shelters.
Policy Environment	National Climate Change Action Plan (NCCAP) 2011–2028[76]; Nationally Determined Contributions (NDCs), National Adaptation Plan (NAP).[77]Climate

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	Change Commission (CCC)[78]; Department of Health (DOH)[79] ; The Universal Health Care (UHC), 2019 .[80]
Health Systems	Haiyan (2013) destroyed 432 health facilities ($1.17B damages)[81]; 2024 heatwave caused school closures, power rationing, health alerts[82].
Investment Landscape	$24B ADB sovereign lending (2024–2029)[83]; $500M WB catastrophe credit line[84];

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[86] National Climate Change Secretariat, "Impact of Climate Change in Singapore," *Singapore's Climate Action*, accessed July 15, 2025, https://www.nccs.gov.sg/singapores-climate-action/impact-of-climate-change-in-singapore/#:~:text=Image%3A%20Effect%20on%20public%20health,the%20elderly%20most%20at%20risk

2.4 Singapore

Component	Summary (with data points)
Climate Vulnerability	Temperature ↑0.24°C/decade[85]; +5°C by 2100; sea-level rise >1m; 41–351 very hot days/year; Urban Heat Island intensifies heat exposure[86].
Population Vulnerability	Elderly, children, migrant workers, low-income, pregnant women at heightened risk from heat, haze, and air pollution.
Public Health Impact	Dengue: 35,315 cases (2020), 32,173 (2022), 9,949 (2023), 5,000+ by March 2024[87]; haze ↑ respiratory hospital admissions ~1.1% per 10 μg/m³ PM[88]; ~45% youth report climate anxiety[89].
Policy Environment	NDC 2035[90], NCCS[91], Green Plan 2030[92], Heatwave Response Plan[93]; NCID Surveillance[94]
Investment Landscape	$600M Temasek ABC Impact fund[95]; S$100M concessional capital[96]; ADB partnerships[97]; SGInnovate med-tech accelerators[98]; regional climate x health launchpad.

Detailed data tables, risk metrics and additional investment cases are available on request.

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88 Ministry of Health Singapore, "FAQ: Impact of Haze on Health," *MOH Newsroom*, November 21, 2016, accessed July 15, 2025 https://www.moh.gov.sg/newsroom/faq-impact-of-haze-on-health

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93 Thailand Public Relations Department, "Singapore Launches National Plan to Combat Heatwaves with Regional Coordination," *PRD Thailand (English)*, published April 2025, accessed July 15, 2025, https://thailand.prd.go.th/en/content/category/detail/id/2874/iid/374672

94 National Centre for Infectious Diseases, "*Climate Change and Infectious Diseases," NCID Health-Professionals Articles, published approximately 1.4 years ago, accessed July 15, 2025, https://www.ncid.sg/Health-Professionals/Articles/Pages/Climate-Change-and-Infectious-Diseases.aspx. https://www.ncid.sg/Health-Professionals/Articles/Pages/Climate-Change-and-Infectious-Diseases.aspx*

95 Temasek-Backed ABC Impact Raises $600M to Scale Asia-Focused Healthcare and Climate Investments." *PE Insights*, April 15, 2025. Accessed July 15, 2025. https://pe-insights.com/temasek-backed-abc-impact-raises-600m-to-scale-asia-focused-healthcare-and-climate-investments/#:~:text=Poland%20&%20CEE-Temasek%2Dbacked%20ABC%20Impact%20raises%20$600m%20to%20scale%20Asia,focused%20healthcare%20and%20climate%20investments

96 Temasek Holdings. "Temasek Sets Aside S$100 Million Concessional Capital for Climate Action on 50th Anniversary." *Temasek*, September 23, 2024. Accessed July 15, 2025 https://www.temasek.com.sg/en/news-and-resources/news-room/news/2024/temasek-sets-aside-100-million-concessional-capital-for-climate-action-50th-anniversary

97 Singapore Government. *Singapore Green Plan 2030*. Accessed July 15, 2025 https://www.greenplan.gov.sg/

98 SGInnovate. *SGInnovate*. Accessed July 15, 2025. https://www.sginnovate.com/

Annex 3 Detailed Investment Data and References

This annex supports Section 2. It holds the full numbers, examples, and definitions that were shortened in the main narrative.

3.1 Access to climate–health finance Globally

- Just 5% of global climate finance of USD 1.46 trillion went to adaptation, and an even smaller fraction to health-specific interventions[99,100].
- In Asia, adaptation needs range from USD 102–431 billion annually, but only USD 34 billion was mobilized in 2021–2022[101].
- Private investment in adaptation, especially for health, remains under 3%[102] of total, and only 13 of 60 major public finance institutions globally have made explicit commitments to adaptation finance[103].
- Only 28% of countries currently access climate x health funds, reflecting persistent structural barriers, from fragmented pipelines and unclear investability, to underdeveloped instruments that can align health resilience with commercial logic[104].
- Between 2018 and 2022, global commitments to climate x health financing rose tenfold to USD 7.1 billion, driven largely by bilateral and multilateral actors[105].
- MDBs have increased commitments, with USD 74.7 billion disbursed to low- and middle-income countries in 2023, yet only a third of that supported adaptation.[106]

3.2 Growth of multilateral and bilateral flows

- Multilaterals raised climate-health commitments from **0.9 billion dollars in 2018** to **7.1 billion in 2024** (compound growth 44 percent)[107].

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100 Global Center on Adaptation. 2024. State and Trends in Climate Adaptation Finance 2024. Co-directed by Ede Jorge Ijjasz-Vasquez and Jamal Saghir. Rotterdam (hosted in the Netherlands): Global Center on Adaptation, April 18 https://gca.org/reports/state-and-trends-in-climate-adaptation-finance-2024/

101 Asian Development Bank. 2024. Asia–Pacific Climate Report 2024: Catalyzing Finance and Policy Solutions. Manila: Asian Development Bank, https://www.adb.org/climate-report/editions/2024

102 Global Center on Adaptation. 2024. State and Trends in Climate Adaptation Finance 2024. Co-directed by Ede Jorge Ijjasz-Vasquez and Jamal Saghir. Rotterdam (hosted in the Netherlands): Global Center on Adaptation, April 18. https://gca.org/wp-content/uploads/2024/04/State-and-Trends-in-Climate-Adaptation-Finance-2024.pdf

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104 WHO (2021). 2021 WHO health and climate change global survey report. https://iris.who.int/bitstream/handle/10665/348068/9789240038509-eng.pdf?sequence=1

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106 Inter-American Development Bank, Climate Financing by Multilateral Development Banks Hits Historic Record in 2023, press release, September 20, 2024. https://www.iadb.org/en/news/climate-financing-multilateral-development-banks-hits-historic-record-2023?utm.

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- Bilateral agencies grew from **0.6 billion to 2.4 billion dollars** in the same period.
  Source: CPI Climate Finance Database 2025 update.

3.3 Public-private split, detailed figures

Source of funds	Share of Asia-tracked climate finance	Ten-year change
Public budgets and DFIs[108]	68 %	+8 pp (percentage point increase in last 10 years)
Private capital	25 %	+3 pp (percentage point increase in last 10 years)
Philanthropy and other[109]	2 %	–1 pp (percentage point decline in last 10 years)

Source: CPI 2025; ADB Climate Finance Roadmap.

3.4 Selected donor and guarantee examples

Donor / instrument	Value (USD million)	Focus	Status
DFAT Indo-Pacific Resilience window	398[110]	WASH, primary health care	Active
FCDO Climate Resilience Guarantee	280[111]	Crop and health insurance	Board-approved
Green Climate Fund – Asia WASH package	976[112]	Water, hygiene, flood control	In implementation

108 Asian Development Bank. 2023. Climate Finance Landscape of Asia and the Pacific. Manila: Asian Development Bank Asian Development Bank (ADB). https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf

109 Climate Policy Initiative. 2023. *Global Landscape of Climate Finance 2023*. San Francisco: Climate Policy Initiative. Accessed July 18, 2025. https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/.

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111 DLA Piper. 2024. "DLA Piper advises Foreign, Commonwealth & Development Office on multi-donor climate financing facility." News Release, November 18. DLA Piper advises Foreign, Commonwealth & Development Office on multi-donor climate financing facility |https://www.dlapiper.com/en-us/news/2024/11/dla-piper-advises-foreign-commonwealth-development-office-on-multidonor-sustainable-finance-fund

112 Asian Development Bank. 2023. Climate Finance Landscape of Asia and the Pacific. Manila: Asian Development Bank Asian Development Bank (ADB). https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf

3.5 Philanthropic actors and programmes

Organisation	Commitment	Programme highlight
Bill & Melinda Gates Foundation	USD 315 million[113]	Heat-resilient vaccines, surveillance
Wellcome Trust & Rockefeller Foundation	USD 11.5 million[114]	Climate-sensitive infectious-disease modelling
Rockefeller Foundation and IFC	USD 150 million[115]	Renewable energy for health facilities
Temasek Trust – CIIP seeding fund	USD 20 million[116]	Early prototypes in ASEAN

3.6 ESG and safeguard frameworks referenced in Section 2.3

- **IFC Performance Standards** (2012, updated 2023) – worker health, community safety, pollution prevention[117].
- **ADB Safeguard Policy Statement** (under revision 2025) – mandated climate-risk screening, health co-benefits[118].
- **World Bank Environmental and Social Framework** (2018) – ESS 4 Community Health and Safety, ESS 3 Resource Efficiency and Pollution[119].

Full text and compliance tools are available on each bank's website.

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113 Bill & Melinda Gates Foundation. 2021. "Bill & Melinda Gates Foundation Pledges $315 Million to Support Innovations That Help Smallholder Farmers Adapt to Climate Threats." Gates Foundation Media Center, November 2.https://www.gatesfoundation.org/ideas/media-center/press-releases/2021/11/gates-foundation-pledges-315-million-smallholder-farmers-cgiar-climate-change

114 The Rockefeller Foundation. 2025. "Rockefeller Foundation and Wellcome Partnership Drives Global Climate-Informed Health Action." May 21. https://www.rockefellerfoundation.org/news/rockefeller-foundation-and-wellcome-partnership-drives-global-climate-informed-health-action

115 International Finance Corporation. 2021. "IFC and The Rockefeller Foundation Partner to Advance Distributed Renewable Energy Solutions in Emerging Markets." *IFC Pressroom*, June 16, 2021. Accessed July 18, 2025. https://www.ifc.org/en/pressroom/2021/ifc-and-the-rockefeller-foundation-partner-to-advance-distributed-renewable-energy-solutions-in-emerging-markets.

116 Temasek Trust. 2024. "Centre for Impact Investing and Practices and Philanthropy Asia Alliance Unveil Amplifier Programme's First Cohort of Five Climate and Nature Impact Innovators." Temasek Trust, April 15, 2024. Accessed July 18, 2025. https://www.temasektrust.org.sg/newsroom/centre-for-impact-investing-and-practices-and-philanthropy-asia-alliance-unveil-amplifier-programme-s-first-cohort--of-five-climate-and-nature-impact-innovators.

117 International Finance Corporation (IFC). IFC Performance Standards on Environmental and Social Sustainability. Washington, DC: International Finance Corporation, 2012. https://www.ifc.org/en/insights-reports/2012/ifc-performance-standards

118 Asian Development Bank. 2024. Environmental and Social Framework. Manila: Asian Development Bank, September 25, 2024. Accessed July 18, 2025. https://www.adb.org/documents/environmental-social-framework-draft

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3.7 Private-capital trends and funds

Metric	2011	2022	Change
Venture capital assets under management in Asia[120] (USD billion)	15	315	×21 (315/15)
Share of Venture capital flows into climate tech[121]	3 %	10 %	+7 pp (Increase in percentage point)

Selected climate-health funds and accelerators

- **Synapses** (Singapore) – 30 early-stage deals, ticket size 0.5–2 million dollars.
- **Decarbonisation Partners** (Temasek and BlackRock) – earmarks up to 100 million dollars for climate-health co-benefits.
- **Mirova Climate Fund** – minority stake in low-carbon cold-chain logistics for vaccines.
- **InsuResilience Investment Fund** – invests in parametric health and crop insurance solutions[122].

3.8 Financial-instrument glossary (brief)

Term	Short definition
Flexible debt	Venture or revenue-based loans that adjust repayment to cash flow.
Concessional finance	Loans below market rate; often first-loss to attract private co-investment.
Guarantee	Risk-sharing pledge that protects lenders against default.
Outcome-based instrument	Investors are repaid only if agreed health targets are met (e.g., social impact bond).

[120] Singh, Prakhar, and Mark Watson. 2025. "Asia's Evolving Venture Capital Market." Wellington Management Insights, August 31. https://www.wellington.com/en/insights/asias-evolving-venture-capital-market

[121] United Nations Development Programme. 2025. Deep Dive into Climate Technology Startups. Prepared in collaboration with the Government of Egypt. New York: UNDP. Marchhttps://www.undp.org/sites/g/files/zskgke326/files/2025-03/climatech_report_update.pdf

[122] InsuResilience Global Partnership. Vision 2025: Strengthening Climate and Disaster Risk Finance and Insurance Solutions. Bonn: InsuResilience Secretariat, 2022 (updated 2024). Accessed June 26, 2025. *https://www.insuresilience.org/wp-content/uploads/2025/04/Vision-2025-Update_Achievements-in-2024.pdf*

Blended structure	Layered mix of grants, concessional debt, and commercial equity in one deal.

For full legal definitions see the Blended Finance Working Group Handbook (2024 edition).

3.9 Timeline of notable pilot deals

Year	Instrument	Lead investor(s)	Ticket	Health focus
2019	Concessional debt and equity	Asian Development Bank (ADB) , Rockefeller Foundation	USD 30 million[123]	Solar power for provincial hospitals
2021	Guarantee and venture capital equity	United Kingdom's Foreign, Commonwealth & Development Office (FCDO), local bank	USD 15 millions[124]	Parametric dengue-risk insurance
2023	Revenue-based loan	Government of Singapore Investment Corporation (GIC), Vertex	USD 8 millions[125]	Remote heat-exposure monitoring
2025	Outcome-based bond	Temasek Trust, Synapses	USD 20 millions[126]	Urban clean-air interventions

All figures are in constant 2024 dollars unless indicated.

[123] The Rockefeller Foundation. 2019. "The Rockefeller Foundation Announces $30 Million Grant to the Adrienne Arsht Center for Resilience at the Atlantic Council." *PreventionWeb*, April 1, 2019. Accessed July 18, 2025. https://www.preventionweb.net/news/rockefeller-foundation-announces-30-million-grant-adrienne-arsht-center-resilience-atlantic.

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[125] MarketScreener. 2022. "Vertex Technology Acquisition Corporation Ltd. Announced That It Expects to Receive SGD 8 Million in Funding from Vertex SPV." January 6, 2022. Accessed July 18, 2025. https://in.marketscreener.com/quote/stock/VERX-TECHPAR-131885369/news/Vertex-Technology-Acquisition-Corporation-Ltd-announced-that-it-expects-to-receive-SGD-8-million-in-39316458/.

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Annex 4- Interview Evidence and Practitioner Insights

This annex captures the qualitative material that underpins Section 3 of the report. It includes a profile of interviewees, practical tactics for pipeline building, a library of proxy metrics, and interview guide.

4.1 Respondent profile

Category	Details
Number & Type of Participants	10 capital providers: early-stage venture capital firms, catalytic funds, blended finance platforms
Investment Focus	70% invest at the climate x health intersection through various instruments
Catalytic/Concessional Role	30-40% provide grants or concessional finance to de-risk innovation and strengthen ecosystem resilience
Ecosystem Enablement Role	30% act as platforms, collaboratives, or conveners to crowd in capital, unlock co-financing, and raise visibility for climate x health opportunities
Geographic Focus	Indian subcontinent, Southeast Asia, Asia-Pacific; some active in niche areas like Pacific Islands
Thematic Focus	Heat resilience, air and water quality, food and nutrition security, early warning systems
Investment Stage	Seed, pre-Series A, Series A+, with flexibility across stages depending on opportunity strength
Instruments Used	Equity, debt, blended finance, convertible notes, non-dilutive capital
Typical Ticket Size	USD 500K–2 million (noting variation depending on opportunity)
Return Expectations	Flexible, shaped by co-investor structure and impact intent

Strategic Priority	>50% identify climate x health as a strategic investment focus for the next three years, signaling growing institutional commitment to this convergence

4.2 Practical tactics for building the pipeline

1. Partner local accelerators to source climate-health founders early.
2. Offer convertible grants or recoverable equity for prototypes; keep legal terms simple.
3. Provide technical-assistance pools for regulatory approvals and health-data validation.
4. Link ventures to public procurement channels; guarantee offtake reduces early-stage risk.
5. Use outcome-based tranches tied to proxy metrics rather than full clinical endpoints.

4.3 Proxy metrics library

Theme	Practical proxy metric	Rationale
Heat resilience	Days with workplace heat index below 32 °C	Easy to measure via sensors; links to productivity and morbidity.
Vector control	Percentage drop in *Aedes aegypti* larvae in sample traps	Predicts dengue incidence; cheaper than full epidemiological survey.
Clean air	PM2.5 micrograms per cubic metre in target schools	Direct health relevance; data widely available.
Supply-chain resilience	Vaccine-cold-box failure rate	Correlates with spoilage and immunisation gaps.
Digital surveillance	Average days from symptom report to public alert	Measures speed rather than absolute case numbers.

Annex 5 - Country Data Tables & Summaries

5.1 India

S.No.	Category	Details
1.	Context Population	• Population: 1.4B and the 7th most climate-vulnerable country[127] • 93% days with extreme weather (2024) and 90% high heat stress risk[128]
2.	Climate x Health Risks	• Extreme Heatwaves: 700 heatstroke deaths (2024).[129] 34 million loss of jobs by 2030[130]. • Air Pollution and NCD Burden: Fifth most polluted country(2024)[131]; 1.6 million deaths (2021)[132] • Vector / Water borne disease: Rising heat and rainfall have extended dengue season to 5.6 months[133]
3.	Policy & Enablers	• National Programme on Climate Change & Human Health (NPCCHH): climate resilience in health; surveillance, training, awareness, capacity building[134] • India Cooling Action Plan (2019):Aims 30% cooling reduction by 2037, promotes efficient cooling and green jobs[135]

[127] Tripathi, Sibu Kumar. "India 7th Most Vulnerable Country to Climate Change: Economic Survey." India Today, January 31, 2025. https://www.indiatoday.in/environment/story/india-7th-most-vulnerable-country-to-climate-change-economic-survey-2672890-2025-01-31

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[134] Climate Laws. "National Programme on Climate Change & Human Health (NPCCHH)." Climate Laws (database)https://climate-laws.org/document/national-programme-on-climate-change-human-health-npcchh_4f4f

[135] National Disaster Management Authority (NDMA). India Cooling Action Plan (ICAP). New Delhi: NDMA, January 2024. https://ndma.gov.in/sites/default/files/PDF/Heatwave-workshop/14012024/session6/ICAP.pd

		• State Heat Action Plans: 37+ Heat Action Plans at state, district, city levels; early warning, public awareness, health preparedness[136] • Ayushman Bharat Digital Mission: enables digital health, AI diagnostics, and telehealth nationwide.[137] • The Production Linked Incentive (PLI) scheme local manufacturing, green cooling.[138]
4.	Investment Landscape	• 23% CAGR (2020–2024)[139], • 124 new climate investors entered the market, with rising interest in climate x health[140]. • DFIs are piloting <$10M deals[141] • The Harit Bharat Fund is another catalytic fund that supports climate innovation across sectors, including agriculture, water, and green infrastructure.
5.	High-Potential Solutions	• Cooling tech, clean-air (Devic Earth) • Parametric insurance (WRMS SecuRisk), • AI disease surveillance
6.	Flagship Case	WRMS "SecuRisk" parametric insurance: instant payouts via satellite/IoT; scaling from 1,300 to 85,000+ users[142]

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5.2 Indonesia

S.No.	Category	Details
1.	Context	• 17,500+ islands, high climate risk[143]. • 75% of cities on coast; 42M at sea-level rise risk by 2050[144]. • 300+ disasters since 1990; $16.8B economic losses[145]
2.	Climate x Health Risks	• Heat Stress & Economic Losses: US$21.7 billion income loss[146]. • Air Pollution: 289,000 deaths in 2021[147] • Disease Outbreaks: 1.24M cases (2010–2020), 88,593 cases and 621 deaths in early 2024.[148],[149]
3.	Policy & Enablers	• Indonesia Cooling Action Plan (ICAP 2024) & Health Resilience "Prima" framework: for improving thermal comfort and resilience to extreme heat[150] • SDG Indonesia One (Blended-Finance Platform, PT-SMI): mobilized over US $3 billion toward climate and health. [151] • BPJS-K Health Insurance Reforms: integrating climate x health resilience into its digital ecosystem[152]

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4.	Investment Landscape	• Indonesia's venture capital landscape: Early-stage deals < $10M dominate; healthtech, climate tech, agritech rising; shift to impact and real-economy sectors.[153]
5.	High-Potential Solutions	• Resilient housing retrofits (Build Change ICAL) • Air-quality data platforms • Cooling solutions for clinics & cold chain • Digital diagnostics targeting dengue & malaria
6.	Flagship Case	Build Change + KOMIDA retrofitted 2,000 women-led homes for heat/flood resilience; seeking $1–2M to scale nationwide[154]

[153] Kidd, Tom, Soegeng Wibowo, and Meng Yang Lee. 2023. *Indonesia Venture Capital Report 2023*. Jakarta: Bain & Company and AC Ventures. *https://www.bain.com/insights/indonesia-venture-capital-report-2023/*

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Annex 6: Case Studies

Singapore | Krosslinker: Aerogel-Based Insulation for Cold Chain and Cooling

PROBLEM

Cooling divide" impacts 1.2B people[155]; pharma loses $35B/year from cold chain failures[156].

SOLUTION

Krosslinker's ***ASPIRE® platform***- low-cost, water-based aerogels[157]. Its flagship, ***Cryar®***, delivers 5x energy savings and 10x faster production than conventional aerogels[158].

BUSINESS MODEL

The company follows a ***platform approach***, addressing verticals including vaccine logistics, buildings, and industrial cooling.

IMPACT

- ✓ Stable vaccine delivery in high-heat regions
- ✓ Lower energy costs and insulation waste
- ✓ Non-toxic, green-compliant materials

INVESTMENT POTENTIAL

The global aerogel market is projected to grow from ***USD 1B 2023 to USD 3.4B by 2030[159]***

Krosslinker raised $1.25M seed (500 Startups, SEEDS), added ADB Ventures[160] , won Temasek's $1M grant (2025) for pilots and scale[161].

155 Sustainable Energy for All. 2022. "1 in 7 People Globally Currently at High Risk Due to Lack of Access to Cooling." *Press Release*, May 17 https://www.seforall.org/press-releases/1-in-7-people-globally-currently-at-high-risk-due-to-lack-of-access-to-cooling#:~:text=on%20access%20to%20energy,more%20than%20450%20million%20p

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158 ANI/PR Newswire. 2023. "Accelerating Energy Efficiency Adoption, Deep-Tech Startup KrossLinker Develops a Cost-Effective Aerogel Insulation." *PR Newswire*, February 2https://theprint.in/ani-press-releases/accelerating-energy-efficiency-adoption-deep-tech-startup-krosslinker-develops-a-cost-effective-aerogel-insulation/1349323/#:~:text=KrossLinker%20is%20a%20Singapore,solutions%20for%20a%20better%20world

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160 ANI/PR Newswire. 2023. "Accelerating Energy Efficiency Adoption, Deep-Tech Startup KrossLinker Develops a Cost-Effective Aerogel Insulation." *PR Newswire*, February 2 https://theprint.in/ani-press-releases/accelerating-energy-efficiency-adoption-deep-tech-startup-krosslinker-develops-a-cost-effective-aerogel-insulation/1349323/#:~:text=The%20role%20of%20ADB%20Ventures

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Case Study: India | Devic Earth – Clean Air as a Scalable Service

PROBLEM

Air pollution remains a major health crisis in India; traditional mitigation (smog towers, filters) is costly and limited, leaving vulnerable communities exposed[162]

SOLUTION

Devic Earth's Pure Skies uses RF waves to clear air pollution passively and efficiently, creating wide-area clean air zones without filters or heavy infrastructure[163].

BUSINESS MODEL

Devic Earth offers "clean air as a service" via subscription, with modular, plug-and-play systems for industries and cities, removing upfront costs and enabling ESG integration[164].

IMPACT

- ✓ By 2021, Devic Earth deployed at 40+ sites[165].
- ✓ At ACC Cement, PM□.□ and PM□□ dropped by ~50% in 30 days[166].
- ✓ At a 35,000-runner event, PM□.□ reduced by 30% with no health incidents[167].

INVESTMENT POTENTIAL

Devic Earth has ***raised $2.5 million from investors including Blue Ashva Capital and Axilor Ventures***[168]. $1.7 billion for implementation across 132 cities[169]

162 Times of India. "PCB Identifies Air Pollution Hotspots in Kol and Beyond." Times of India, June 22, 2025.https://timesofindia.indiatimes.com/city/kolkata/pcb-identifies-air-pollution-hotspots-in-kol-and-beyond/articleshow/122008387.cms

163 https://devic-earth.com/pure-skies/

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165 Sudhir Chowdhary, "Devic Earth: Fighting Air Pollution with Modern Technology," *The Financial Express*, May 24, 2021, https://www.financialexpress.com/life/science-devic-earth-fighting-air-pollution-with-modern-technology-2256682/.

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168 Tracxn. "Devic Earth - Funding, Financials, Valuation & Investors." Tracxn, 2024.

169 World Bank. "Catalyzing Clean Air in India." World Bank, June 2024.https://www.worldbank.org/en/country/india/publication/catalyzing-clean-air-in-india

Case Study: India | WRMS – "SecuRisk" Parametric Insurance Platform for Climate Adaptation

PROBLEM

Extreme weather in India threatens farms, food security, and health. Traditional insurance is slow and inaccessible, delaying relief for low-income households[170]

SOLUTION

WRMS's SecuRisk offers mobile parametric insurance with automatic payouts triggered by real-time climate data, using satellites and IoT for instant disbursal[171].

BUSINESS MODEL

SecuRisk's open-API platform integrates with Aadhaar and digital payments, enabling automated claims. Revenue from SaaS, bulk contracts, and partnerships; complements PMFBY; piloted in India and Fiji[172].

IMPACT

SecuRisk has ***reached over 1,300 households in its initial deployments, with planned expansion to 85,000+ users***[173].

INVESTMENT POTENTIAL

The parametric insurance market is projected to surpass USD 29 billion by 2031, ***Secured €2.1 million in grant capital*** from the InsuResilience Solutions Fund[174]

170 Clarke, Daniel J., and Stefan Dercon. *Dull Disasters? How Planning Ahead Will Make a Difference.* Oxford: Oxford University Press, 2016. https://library.oapen.org/bitstream/handle/20.500.12657/32368/611710.pdf?sequence=1&isAllowed=y.

171 WRMS Global. "SecuRisk." WRMS Global, accessed June 26, 2025.https://wrmsglobal.com/securisk/

172 Weather Risk Management Services Pvt. Ltd. 2024. "WRMS – Pioneering Parametric Insurance in South Pacific Countries." *WRMS Global*, October. Accessed June 16, 2025 https://wrmsglobal.com/wrms-pioneering-parametric-insurance-in-south-pacific-countries-2/#:~:text=Policyholders%3A%201%2C380%20households%20,individuals

173 Weather Risk Management Services Pvt. Ltd. 2024. "WRMS – Pioneering Parametric Insurance in South Pacific Countries." *WRMS Global*, October. Accessed June 16, 2025 https://wrmsglobal.com/wrms-pioneering-parametric-insurance-in-south-pacific-countries-2/#:~:text=Policyholders%3A%201%2C380%20households%20,individuals

174 Munich Re Foundation. 2025. "WRMS – Pioneering Parametric Insurance in South Pacific Countries." In *Proceedings of the International Conference on Inclusive Insurance 2024*, Session PS7, October 21–25, 2024, Kathmandu, Nepal; Reference report. Berlin: Munich Re Foundation. https://www.munichre-foundation.org/content/dam/munichre/foundation/publications/inclusive-insurance/2024-icii/ICII2024_PS7_WRMS.pdf/_jcr_content/renditions/original./ICII2024_PS7_WRMS.pdf#:~:text=Grant%20support%20of%202.billion%20India%20Crop%20Insurance%20Program
Moneycontrol. "WRMS Gets €2.1 Million Grant to Provide Solutions for Yield Guarantee to Small Farmers." Moneycontrol, April 10, 2024.

Case Study: Indonesia | Build Change – Climate-Resilient Housing Loans[175,176]

PROBLEM

Low-income women in Indonesia face overheating homes, health risks, and lost productivity

SOLUTION

Build Change's ICALs, via KOMIDA, offer microloans plus digital guidance for low-cost, climate-resilient home retrofits.

BUSINESS MODEL

KOMIDA loan officers use BCtap to assess, tailor retrofits, and disburse microloans, enabling affordable repayment and scale across 50 branches.

IMPACT

- ✓ Pilot aims to support 2,000 women-led households in heat-vulnerable zones.
- ✓ Retrofitting reduces indoor heat exposure,improving comfort, health, and potential productivity
- ✓ The modular approach promotes gradual asset-building and resilience.

INVESTMENT POTENTIAL

- ✓ Global Innovation Fund (GIF) pilot investment of USD 460k
- ✓ Aims for nationwide expansion through KOMIDA's network
- ✓ Scalable model: estimated USD 1–2M investment per MFI partner for regional rollouts.

[175] Global Innovation Fund. 2024. "Climate Resilient Housing Loans (Build Change)." *Global Innovation Fund*. https://www.globalinnovation.fund/investments/build-change-2

[176] Asian Development Bank. Beating the Heat: Investing in Pro-Poor Solutions for Urban Resilience. Mandaluyong City: Asian Development Bank, 2021.https://www.adb.org/sites/default/files/publication/815696/beating-heat-pro-poor-solutions-urban-resilience.pdf

Annex 7-Sample Assessment of VBD Inc. using the Investor Toolkit

The following is an illustrative example assessment of a deep-tech start-up developing an AI-based early warning system for vector-borne diseases based on surveillance water bodies in India called "VBD Inc.". The table calculates the venture score for VBD, such as:

- The solution is very relevant to solving pressing health problem of for mosquito-borne diseases and has a strong innovation edge with its use of drones and AI, hence those scores are high
- There are concerns regarding traction as the solution has very small pilots with limited success so the Traction & Scalability score was lower
- There is a lot of philanthropic capital available for solving for community health solutions in India with visible impact on metrics like mortality reduction, and hence the policy alignment score is high

Quadrant	Sub-Criterion	Weight	Score (0–5)	Weighted Score	Max Score
Q1-Solution	Problem–Impact Fit	10%	5	0.4	0.5
	Innovation Edge	10%	3	0.5	0.5
	Traction & Scalability	10%	2	0.2	0.5
		30%		**1.1**	**1.5**
Q2 - Team	Founder-Market Fit	5%	4	0.2	0.25
	Execution Capacity	10%	3	0.3	0.5
	Capital Stack Maturity	10%	3	0.3	0.5
		25%		**0.8**	**1.25**
Q3-Ecosystem	Policy Alignment	5%	4	0.2	0.25
	Derisking Capital Availability	5%	4	0.2	0.25
	Institutional Partnerships	5%	2	0.1	0.25
		15%		**0.5**	**0.75**
Q4 – Market Model	Business Model Viability	10%	4	0.4	0.5
	Exit Potential	10%	3	0.3	0.5
	Valuation Realism	10%	2	0.2	0.5

Quadrant	Sub-Criterion	Weight	Score (0–5)	Weighted Score	Max Score
		30%		**0.9**	**1.5**
Total Score				**3.3**	**5.0**

The overall venture score for VBS Inc. is 3.3.

Therefore, based on the VBS Inc. has strong investment prospects, provided there is diligence on some critical areas.

MVS for VBS Inc.

In case of VBS Inc, being an AI Surveillance type solution, its MVS would be set at 3.9, which is much higher than its Venture Score of 3.3

Adjustment for Macro Risks

- For VBS Inc, it is considered a high-risk sector due to its unproven success at scale, and hence **SBM is assessed at 1.25**.
- For VBS Inc, there are strong tailwinds due to there being a strong policy environment to support community health, large capital inflows from various donor types, and strong consumer appetite from institutional buyers, hence **TWC is assessed as 1.15**.
- For VBS Inc, the investor is assumed to take frontier bets on exciting, novel innovative solutions and hence the **IRAC is taken to be 1.10**.
- For VBS Inc, the current market trends of significant valuation and secondary funding coming into AI solutions improves exit possibilities and **EHMC is assessed at 1.2** .

Investment Decision Framework

Calculate Risk-Adjusted Minimum Viable Score (RA-MVS) for VBS Inc.

- **MVS = 3.9** for a Deep Tech Surveillance Solution
- **SBM = 1.25** for High Risk
- **TWC = 1.15** for high tailwinds
- **IRAC = 1.10** for a frontier investor

RA-MVS = (3.9 × 1.25) ÷ 1.15 ÷ 1.10 = **3.85**

Adjust Venture Score for Exit Market Health Coefficient (EMHC) for VBS Inc.

- **Venture Score = 3.2**
- **EMHC = 1.2** (bullish market for AI)

Adjusted Venture Score = (3.2 × 1.2) = **3.96**

Final Investment Decision for VBS Inc.

Adjusted Venture Score (**3.96**) **>** **RA-MVS** (**3.85**)

Hence, despite the raw venture score being lower than the threshold set for the sector, due to strong tailwinds, investor appetite for frontier tech, and strong exit signals, the adjusted venture score surpasses the threshold, making VBS a good bet for investment.