

RESILENS

Make Adaptation Happen

A manifesto on why adaptation
needs better decision logic —
and what we are building at Resilens

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CLIMATE PROOF 

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A change of mind

For a long time, I was quietly skeptical of climate adaptation.

It felt like a concession — a tacit admission that mitigation had failed, and that the sensible response was to divert capital away from cutting emissions and toward building sea-walls. Every dollar spent adapting, I assumed, was a dollar not spent decarbonizing. And decarbonization was the real work we had to exclusively focus on.

I no longer believe that, and this report is in a way a record of how I changed my mind.

The shift came from tracing financing data to the sources. Studying the climate finance flows laid out by the UNFCCC¹, following the recent discourse on the adaptation gap, and looking closely at where climate impacts are actually landing, three things became impossible to ignore.

The first is that mitigation and adaptation are not competing — they are coupled. There are many reasons to keep pushing on mitigation. None of them is a reason to neglect the adaptation we can still do in parallel. Just because the former is essential does not mean the latter is wasteful.

The second is the geography of harm today. When you overlay climate hazard maps with economic data, the picture is stark: the hardest-hit zones are the already-hot ones, and the people living in them tend to have the least capacity to adapt. The communities that contributed least to the problem are absorbing the most severe consequences, with the thinnest financial cushion. That is not a side-effect of climate change, it is the shape of it. Any serious response has to begin there.

But the central point here is that adaptation is an investment, not an unbearable cost. A growing body of evidence shows that well-targeted adaptation saves many multiples of what it costs, potentially billions in avoided damages, lost opportunities, and needless infrastructure, if capital is channeled into the right measures. The problem is that we do not yet have a shared, credible way to demonstrate that return before a project is built, at the level of the specific asset, the specific community, the specific manager trying to secure a budget line. Without that, adaptation stays stuck in the language of expense.

Oliver Marchand
CEO, Resilens

THE PURPOSE OF RESILENS

The purpose of Resilens is to make adaptation happen. We do so by striving to co-creating a new global standard for calculating the costs and benefits of adaptation: what we call AdaptationReturn. It accounts for the 'triple dividend' of benefits delivered by an adaptation investment: the damages it prevents, the economic returns it generates, and the wider social and environmental benefits it creates. Our 'Decision Engine' converts complex, fragmented data into actionable intelligence, giving organizations of all kinds a path from adaptation theory to real-world practice. As the platform scales and our insights proliferate, it is our sincere hope that this work contributes to a safer, stronger world for future generations.

¹ [UNFCCC Standing Committee on Finance. \(2024\). Sixth biennial assessment and overview of climate finance flows: Technical report. United Nations Framework Convention on Climate Change.](#)

Six Core Beliefs on Adaptation

1

Scaling adaptation requires a digital-first approach

Meeting climate challenges at the necessary speed, scale, and quality demands effective digital tools – including the responsible use of AI where it adds value.

2

Adaptation is an investment and produces multiple dividends

Adaptation creates direct economic benefits today as well as preventing damages tomorrow, making investment profitable both in the short and long run.

3

Traditional cost-benefit analyses need practical application

Current approaches for quantifying adaptation benefits are unable to meet practical demands.

4

Adaptation needs better use of data, not just more data

The real challenge is not simply collecting more information, but making existing data usable for clear, consistent, and decision-ready action.

5

Adaptation benefits from standardization

Current approaches for quantifying adaptation benefits are limited in capturing how trade-offs and lock-ins compare across multiple investment paths.

6

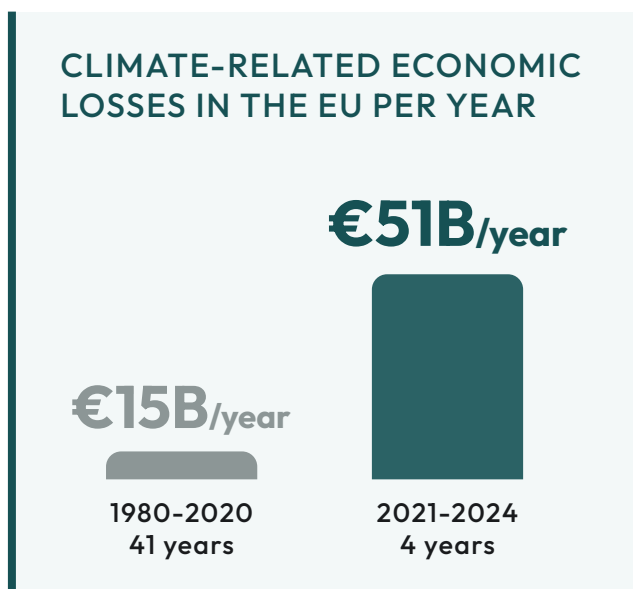
Adaptation requires coordination

Adaptation does not scale through isolated decisions. It depends on alignment across stakeholders, methods, and data — and on a shared language for comparing adaptation costs, benefits, and priorities.

The state of adaptation today

Climate adaptation refers to the adjustment of systems to changing climate conditions. Adaptation actions are those that help reduce the vulnerability of these systems to climate hazards, including 'acute events', like extreme weather, floods, and heatwaves, and 'chronic events', like sea-level rise, desertification, and nature loss. Through successful adaptation actions, systems acquire climate resilience: the ability to withstand, and perhaps even flourish, amidst these acute and chronic events.

Every human and natural system is in the process of adapting to climate change. But the pace and scale of adaptation by public and private organizations today is lagging behind the mounting costs of climate impacts.



This has resulted in an erosion, and in some cases the wholesale destruction, of public infrastructure, together with wealth destruction on a massive scale. For context, the European Union has experienced economic losses estimated at €822 billion from weather- and climate-related extremes between 1980 - 2024, with around one-quarter of these experienced in the four years 2021, 2022, 2023, and 2024² — a jump from around €15 billion per year on average to €51 billion per year. The US has sustained 431 billion-dollar-plus loss events from climate-related disasters between 1980 - 2026, with 192 in just the last ten years, for a total cost of \$1.5 trillion³.

As these trend lines suggest, every delay to adaptation increases the likely costs of future climate disasters. For example, the Canadian Institute for Climate Choices has calculated that proactive adaptation measures could lower net climate-related costs for road repair and replacement in Canada by 77% to 84% by mid-century, compared to doing nothing⁴.

Why, amidst overwhelming evidence of worsening climate impacts, is adaptation falling behind? Myriad interlocking political, economic, and even behavioral factors are to blame. But at the level where decisions are actually made — among adaptation practitioners — a single chokepoint stands out: the data-to-action gap.

This gap has three originators. One, there is a popular narrative that adaptation is not profitable, built around the difficulties in comparing profits and benefits relative to more traditional business endeavours. Two, current cost-benefit models struggle to capture differences across geographical contexts and are hard to translate to investment decisions. And three, fragmented, siloed data makes it difficult to assemble a coherent picture of climate risk and opportunity. This report examines these three blockers and how they can be dismantled.

² [Economic losses from weather- and climate-related extremes in Europe](#), European Environment Agency, October 2025

³ [U.S. Billion-Dollar Weather and Climate Disasters](#), Climate Central

⁴ [Under water: the costs of climate change for Canada's infrastructure](#), Canadian Institute for Climate Choices

Confronting the Data-to-Action Gap in Adaptation

The effectiveness of adaptation relies on public and private organizations understanding the hazards they face, and knowing what measures to prioritize in response.

Yet the benefits of adaptation remain poorly understood in the mainstream. Data and information gaps on relevant climate risks persist, together with entrenched assumptions about building and infrastructure design. Organizations often lack the internal capacity to calculate adaptation benefits, while supporters of adaptation face resistance when pushing against the status quo. Together, these factors have reinforced a narrative that adaptation is an unprofitable enterprise.

Changing this narrative is essential to preventing climate losses from spiraling ever higher. Doing so starts with organizing relevant data in new ways. In practice, this means stitching together disparate information on climate exposure and vulnerability, and layering this with quantitative data on current and potential future climate impacts. And that is only the beginning. Practitioners also need to interpret that data and match their understanding of climate risk to the resources available to address it. In other words, **data alone isn't enough.**

Practitioners need to convert the complex data into defensible insights on the effectiveness of measures to guide investment. They need reliable metrics that fit within their existing 'business-as-usual' workflows and can be easily digested by senior stakeholders.

Without that foundation, adaptation stalls.

THE HESITATION IS UNDERSTANDABLE

Why should practitioners authorize major investments and commit to complex, multi-year resilience projects without knowing whether those efforts will actually address the risks they're designed for, or whether implementation costs would outweigh the losses avoided?

This data-to-action gap is impeding adaptation. Currently, public and private investments in preparing for, and protecting from, climate hazards are not taking place at the necessary scale. The European Union (EU) alone requires adaptation investments of €70 billion per year until 2050 to reduce exposure to worsening climate hazards, according to the European Commission, compared to around €20-33 billion actually invested each year today⁵. Notably, its assessment flagged significant gaps in cost data and the lack of a standardized taxonomy for adaptation measures across Member States — shortcomings that introduce uncertainty into both investment estimates and projections of adaptation effectiveness.

Addressing the data-to-action gap, therefore, is an essential prerequisite to meaningful progress on adaptation.

⁵ [Assessment of EU and Member States adaptation investment needs](#), European Commission, January 2026

A New Cost-Benefit Paradigm

For adaptation practitioners, the decision of where to direct time and capital often comes down to a single question: does the expected benefit of a given action justify its cost? But in this context at least, traditional methods of cost-benefit analysis are limited in scope and may fall short when used to compare and contrast across multiple potential adaptation investments, for the following reasons:

- ▶ **No standard method to calculate ROI (return of investment) before implementation (ex-ante):** Practitioners are unable to quantify the economic benefits of different adaptation measures in a comparable, consistent way before implementation takes place. This is because modeling the potential reduction in climate exposure/vulnerability is challenging, as this relies on forward-looking assessments of changing climate conditions rather than historical weather and climate data.
- ▶ **Disaggregating economic, financial, and environmental benefits:** When returns from a climate adaptation project are calculated ex-post, tracing avoided or reduced losses back to a particular action or investment is challenging, as is assigning the financial benefits of the project to the various stakeholders involved.
- ▶ **Monitoring effectiveness through space and time:** Adaptation measures are typically location-specific, and implemented for the long term. Tracking the benefits of these measures over extended periods of time, and accounting for local idiosyncrasies in climate, weather, and population, complicates any cost-benefit analysis, as does the fact that the climate itself keeps shifting, continuously reshaping the risk profile of the system a measure was designed to protect.

CURRENT BOTTLENECKS IN SCALING ADAPTATION

Existing models typically provide hazard-specific analysis

Most frameworks for cost-benefit analysis cover only one type of adaptation measure and studies are ex-post, creating a gap between theory and applicability.

Outcomes and ROIs are site-specific and not comparable across portfolios

Consultants and academic analysis can provide accurate site-specific estimates; however, the insights are hard to translate across changes in sites and investment portfolios.

Global evidence on adaptation is limited and fragmented

The evidence on the effectiveness of adaptation measures is scattered across a wide range of estimates of costs and benefits, undermining the business case for investment.

Without fit-for-purpose cost-benefit analysis, practitioners are unable to bridge the data-to-action gap and struggle to justify needed adaptation expenditures out of what are often highly constrained budgets. Clear, credible ROI figures for each adaptation measure — across a given system or physical asset — are essential for sound decision-making and for directing scarce resources where they will yield the greatest risk reduction and value for money.

The Climate Adaptation Manager

Human capital matters as much to adaptation as financial resources. In organizations all over the world, the 'adaptation manager' is becoming an increasingly familiar figure, responsible for assessing climate risks to whole portfolios of physical assets and properties and orchestrating adaptation measures that strengthen and support them.

While they may not all carry this exact title, adaptation manager roles are proliferating across local governments and private organizations around the world as political leaders struggle to preserve their tax bases and corporate leaders maintain their balance sheets amidst climate-related disruptions.

OUR ANALYSIS OF ADAPTATION MANAGERS IN EUROPE FINDS THEY HAVE THE FOLLOWING TASKS:

- 1 Identify and quantify risks**
Managers have to survey the physical infrastructure under their jurisdiction for climate exposure, and attempt to quantify the actual and financial losses that could ensue from their impairment or service interruption.
- 2 Quantify adaptation and prioritize measures**
Once climate risks are known, managers must cost out potential adaptation measures and triage interventions based on the importance and vulnerability of exposed assets.
- 3 Secure funding and budget approval**
Once a cost-benefit analysis has been compiled for prioritized adaptation measures, managers have to navigate internal budget processes to obtain the necessary finance.
- 4 Engage stakeholders**
Managers have to communicate the benefits of adaptation, in terms of potential losses avoided and opportunities captured, to multiple parties across their organization to ensure initial buy-in and ongoing support for adaptation measures.
- 5 Track and report**
Once adaptation measures are implemented, managers must monitor how effective they are at addressing climate risks over time and calculating their return on investment. They must also report periodically on performance through public disclosures and internal scrutiny processes.

As climate impacts grow in frequency and intensity, the role of the adaptation manager is expected to become much more prominent across organizations. But like their peers elsewhere, these professionals face real constraints: limited budgets, a lack of available expertise, and traditional risk assessment methods that are resource-intensive by design.

In a typical engagement, climate modeling resources have to be secured, along with location-specific hazard maps and granular vulnerability assessments. The resulting data-points then have to be synthesized by trained experts, and integrated with the organization's internal systems. Finally, the manager

must present findings to multiple stakeholders, many of whom have little familiarity with climate risk or what adaptation actually means in practice.

Given the scope of these assessments, adaptation managers have typically outsourced the heavy work to external consultants. But not all organizations can afford this option, and those that can are pushing against already stretched consulting budgets. This points to a clear supply-demand imbalance in the nascent climate adaptation intelligence market, one that risks widening the gap between known climate risk exposures and meaningful adaptation action.

Where Adaptation Managers Operate

Cities & Municipalities: Officials charged with overseeing social infrastructure such as hospitals, care homes, schools, where climate risks pose immediate health, safety, and operational threats.

Corporates & Facility Operators: Managers in sectors with zero tolerance for disruptions, such as data centers, logistics, and real estate.

Consultancies & Engineering Companies: Firms where adaptation expertise is central to serving public and private clients.

National & Regional Authorities: Officials working to standardize adaptation plans, metrics, and targets.

Funders & Grant Bodies: Managers looking to compare proposals for adaptation ROI and monitor ongoing impact.

The Case for a New Decision Engine for Adaptation

Public and private organizations face mounting pressure to close the data-to-action gap and conduct cost-benefit analyses that are actually fit for adaptation. New approaches are needed: ones that account for the real constraints adaptation managers operate under, today and in the future, and that can support adaptation at scale.

For example, consider the decision to choose between installing a green roof or a white roof on a building. There's the direct benefit of lower temperatures in both cases. **Yet it's hard to translate the gains from each investment into monetary values** even when the benefits seem obvious: the gains in productivity generated from lower temperatures, the reduced probability of heat-stress among building inhabitants, and the savings in energy costs related to cooling systems. There are additional co-benefits that often get ignored as well. For example, the roofs last longer, and contribute to reductions in the urban heat island effect. Green roofs can also limit the need for sewage treatment, leading to direct savings from lower sewage fees.

The gains from an adaptation investment are therefore often multi-dimensional and scenario-specific. Each measure brings benefits unique to the location, the number of people impacted, and the synergies in cost savings. Static frameworks and knowledge sources do not allow for a meaningful, systematic comparison of these returns with any measure of consistency. In practice, this can bias decision-making towards less advantageous investments at best, and lead to substantial underinvestment and maladaptation at worst.

Practitioners need a means to **compare and contrast these benefits with an internally consistent ROI so they can make informed decisions** regarding scale and choice of measures. In short, they need a new 'Decision Engine'.

THIS IS WHAT WE ARE BUILDING AT RESILENS.

We created AdaptationReturn, a valuation metric for comparing investments across sites and portfolios that accounts for both the complexity of climate risk and the many dividends of adaptation measures. AdaptationReturn produces a standardized, five-year ROI for all kinds of investments, and is rigorous in measuring the full spectrum of financial benefits that are delivered: the financial losses avoided, the reductions in energy costs and emissions achieved, and the many positive social and environmental spillovers.

It is explicit in covering the risks from maladaptation. It is flexible in adapting to different portfolios of adaptation coverage and investment. It provides unique decision support that is broad in the scope of adaptation measures covered, and yet customizable dependent on local variables and decision-maker priorities.

AdaptationReturn places power in the hands of adaptation managers themselves, and transforms scattered climate risk and adaptation data into coherent, decision-useful insights.

AdaptationReturn: The Resilens Decision Metric

AdaptationReturn converts complex climate risk into quantifiable impact, making it a necessary decision tool for investment prioritization. For practitioners facing hard choices about where to act, AdaptationReturn cuts through the complexity, helping prioritize the projects that deliver the greatest impact for people and the planet.

ADAPTATION RETURN CHARACTERISTICS

- ▶ Calculates a unified, ex-ante ROI
- ▶ Allows for a comparison of investment options based on different scopes of benefit
- ▶ Ranks adaptation options
- ▶ Enables comparison of ROI across geographies
- ▶ Accounts for the risks of maladaptation
- ▶ Enables ongoing impact tracking to justify and adjust spending

Conclusion

Climate change is here. Its impacts are with us. Adaptation has to occur if human and natural systems are to survive and thrive in the new world it is ushering in.

And yet, despite the spiraling costs of climate hazards and a clear warming trajectory pointing to an even more costly future, adaptation is unfolding at a slow, stop-start pace, and in a disjointed manner. This current state of affairs is preventing adaptation efforts from taking place at the speed and scale necessary to confront rising climate risks.

To move adaptation out of this rut, adaptation managers first have to overcome the 'data to action gap': the fragmentation

of climate risk, exposure, and vulnerability information that prevents effective decision making. To do this, new cost-benefit analysis approaches are needed, and the friction taken out of the calculation of adaptation ROI.

The market is responding. At Resilens, we have developed a "Decision Engine" to identify adaptation measures and project their financial, economic, and environmental returns, because adaptation will not scale until organizations can evaluate and prioritize measures with credible ex-ante decision logic.

GET IN TOUCH

We'd love to talk to you.
Please visit resilens.com.

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