

ADAPTATION FINANCE

Emerging approaches to solve the climate adaptation finance gap



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EXECUTIVE SUMMARY

THE PROBLEM: THE ADAPTATION FINANCE GAP

The financial sector today resoundingly identifies climate change as an area of focus, both for risk management and opportunities. At the 2019 World Economic Forum Annual Meeting in Davos, the world's most prominent business and political leaders found that climate change-related impacts made up seven of the top ten major threats to the global economy.¹ The problem is there is a mismatch between acknowledging this urgent need to adapt, and the amount of investment flowing to adaptation projects. This situation is referred to as the adaptation finance gap. The result of this gap is a significant and growing risk to the Australian and global economy which, if unaddressed, will have major economic consequences, entrench inequality and stagnate social prosperity. Against this backdrop, the Adaptation Finance Project (the Project) was formed. This Project brought together a group of leaders from finance and government who recognised the need and wanted to act. This report shares the insights from the Project's two-year long journey.

THE PROJECT APPROACH: CONFRONTING THE ADAPTATION FINANCE GAP

To overcome the adaptation finance gap, Climate-KIC Australia (**Climate-KIC**) brought together a cross-sectoral group of experts from state and local government, climate risk analysis service providers, insurance and banking with a goal to demonstrate how the financial sector could invest in climate adaptation to deliver commercial returns and greater community resilience. Aligned on a goal, this multi-sectorial group and were motivated to see real world action.

Initially the group collectively set investment criteria for finance ready adaptation projects. This was used to run a market scan to find adaptation projects which matched the criteria. The idea was, projects which met the criteria would be wrapped up into an investment deal, for example the first adaptation bond in Australia. The aim was that this deal, and the underpinning investment criteria developed through the process, would set a precedent and catalyse broader investment in adaptation projects in Australia.

The problem was it did not work. No investment ready adaptation projects were found. This fundamental Project impasse sparked an iterative process of testing new theories and reflecting why they may or may not achieve the Project goals. Eventually this process led to a breakthrough by articulating the deeper cause of the adaptation finance gap.

This report shares those insights and makes recommendations so that current and future projects focused on addressing the adaptation finance gap might benefit. These insights reframe the discussion on how to address the adaptation finance gap and demonstrate why the initial Project approach

did not work. The intention is to open a new, more productive conversation about what is causing this gap and how to confront it so that communities have a chance to thrive in the future.

INSIGHTS INTO THE REAL CAUSE OF THE ADAPTATION FINANCE GAP

No investment-ready adaptation projects exist in Australia, as current projects are designed to access funding, and not private finance.

The initial clear learning from the scan phase was that most adaptation projects in the current context are designed to access government funding, not finance. There is no pipeline of investment-ready adaptation projects in Australia. A market for adapting to climate change does not exist. Adaptation projects are context specific, with their value often distributed among multiple stakeholders. These characteristics mean the revenue streams which would lead to adaptation projects being investment-ready are unclear.

The Project approach did not align to the systems dynamics causing the adaptation finance gap.

In the scan phase, the logic was that individual projects seeking finance would be found and that by demonstrating a financial model further investment would flow to ultimately build a market for adaptation. When no projects were found, the focus of the Project shifted to defining the barriers that inhibited the profitability of individual adaptation projects. But this also did not work – there was no coherent logic to solving the adaptation finance gap resulting from efforts to break-down barriers.

¹ Myers, J., and Whiting, K. (2019). These are the biggest risks facing our world in 2019. *World Economic Forum*. Retrieved from: <https://www.weforum.org/agenda/2019/01/these-are-the-biggest-risks-facing-our-world-in-2019/>

The impasse was more fundamental - it was caused by the underlying paradigm of the Project approach. The Project approach did not match the system dynamics of the problem. Adaptation is referred to as a complex problem. It is the consequence of interconnected, ongoing, multi-layered interventions and has non-linear, interconnected systems properties. Yet the underlying paradigm of the Project approach was that it could be solved with discrete, linear interventions (Figure.1) i.e. at the single-asset level.

The result of the single asset paradigm is a significant investment mismatch between what is required by society and where funding is flowing, i.e. the adaptation finance gap. Existing finance industry methods—better data and alignment of value applied at the single asset level—will not solve the climate change adaptation finance gap. Instead, to confront the challenge, the Project approach should align with the dynamics of the system you are aiming to influence. Analogous to a square peg in a round hole, this impasse demonstrates the need to shift the unit of analysis—from single asset to inter-connected/systems.

EMERGING APPROACH TO SOLVING THE ADAPTION FINANCE GAP

Solving the adaptation finance gap requires a shift from a single asset view to a systemic view.

The alternative approach is to utilise a systems lens to create a coherent logic for how value is created in the real economy (i.e. how to shift to the top right of Figure..1). Adaptation is not created by establishing financial products, rather these products are the beneficiaries of interventions which are shaped by multiple interventions, across both investable and non-investable assets which enhance the value of each other over time. The *output* is an investable pipeline of investment-ready individual projects.

At its core, a systems mindset with respect to adaptation finance accepts that the value realised by an asset is a function of the interconnections between that asset and a complex investible, and non-investible, 'eco-system'. From an investment perspective, a systems view assesses a portfolio of connected interventions or innovations, and

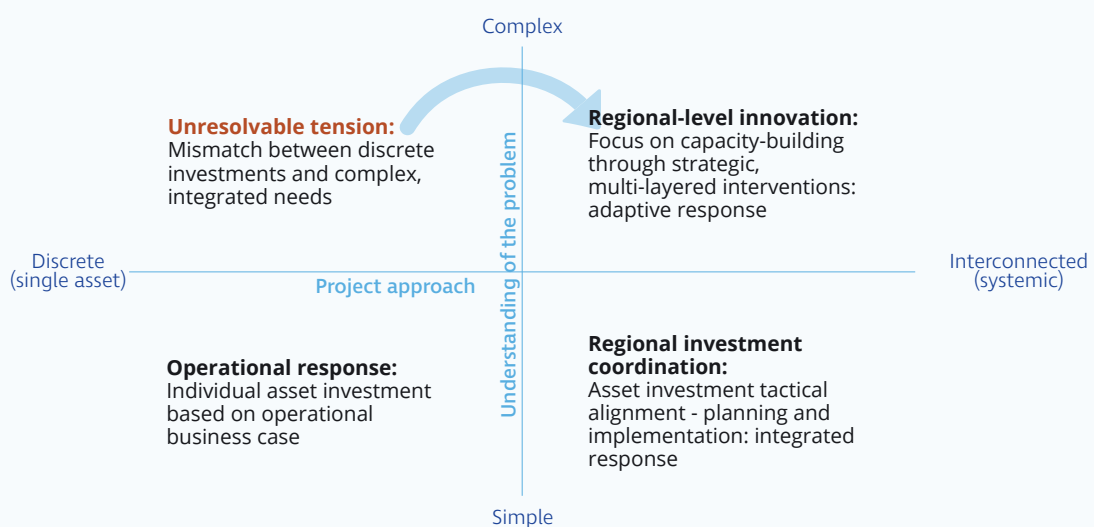


Figure 1: Aligning the understanding of the problem to Project approach

poses the question: how do these enhance the value of each other?² Researchers, for example, have modelled the benefits from an integrated, multi-layered approach, within the context of mission-oriented urban development. They were able to show that combining projects with different typologies, risk and return characteristics not only converts some projects from non-viable to investable (through cross-subsidy effects), but also maximises non-financial impact at the portfolio level.³ Similarly, catchment revegetation projects have found similar cross sector serendipitous benefits.⁴

The opportunity for future initiatives aiming to solve the adaptation finance gap is clear. The aim stays the same: to demonstrate how the financial sector can invest in climate adaptation to deliver commercial returns and greater community resilience. The unit-of-analysis and underlying paradigm changes: from the single asset-level to the system-level. In the next adaptation finance Project 'simple' concepts like 'optimisation' and 'addressing low-hanging fruit' will be of limited value. Instead, the concepts strategic, catalytic and synergistic will be embedded as part of the paradigm or approach of any future initiatives.

A systemic approach provides the opportunity for future Projects to move from incremental to transformative change

The upside is of any future systemic adaptation finance initiative is it has the potential to be far more impactful than what was contemplated at the outset of this Project. While a single asset logic would focus on solutions to prove a model, a systemic logic allows the design of the intervention points in the system which lead to adaptive regions i.e. the enablers of

adaptation. The top right corner of [Figure 1](#). demonstrates that new, bolder and ultimately transformative questions can be asked.

A systemic methodology empowers agency in different actors to be future creators, rather than problem solvers. As elected officials and society's civil servants, **Government** (at all levels) is well placed to take a systemic perspective to design, whilst shaping the future value of adaptation. Government can work with **regional leaders, community leaders**, and other **interrelated sectors** to design systemic transition pathways to achieve an adaptive society. The governance structures underpinning this transition provide confidence to the finance sector that the future state of the region can be increasingly adaptive. This approach gives clear signals that adaptation is a worthwhile new driver for innovation and investment.

Financiers are able to observe how maintaining a systemic investment logic shapes returns over time. It provides opportunities to connect and enhance the future value of, adaptation, through investments that align portfolios with connected, value-enhancing, financial and non-financial assets. In utilising a systems view, financiers are better able to determine a methodology for deploying finance that catalyses the value of assets when aligned with a clear goal.

RECOMMENDATIONS FOR FUTURE ADAPTATION FINANCE PROJECTS

This Project makes three recommendations for current and future projects that are

² Dark Matter Labs. (2019). *Building Civic Capital*, available at <https://www.civic.capital/>.

³ Medda et al. (2013). *Assignment 29 – Strategic UDF Investing and Project Structuring*, submitted to the European Investment Bank, published by Mazars LLP, available at https://www.eib.org/attachments/documents/jessica_strategic_udf_appendix_4_en.pdf.

⁴ Catskills Project New York <https://cwconline.org/>.

focused on addressing the adaptation finance gap.

RECOMMENDATION 1:

Bring together a diverse set of stakeholders who have a shared intent to transform systems and develop principles to guide the project development phase for both the government and finance sectors.

Public and private sectors to work together to implement a strategy that uses a multitude of different levers to grow the market for adaptation. This approach shifts governments' role from aiming to fix a market failure—or the public good logic—to a role as a catalyst for broader market value for adaptation.

Convening a diverse set of multi-disciplinary actors with a shared goal is not sufficient in solving the adaptation finance gap. This Project did not lack in stakeholder diversity. The difference for the future is that the group needs to take a systems approach, and be prepared to challenge cultural, disciplinary, and institutional assumptions.

RECOMMENDATION 2:

Partner with challenge owners and adaptation programs that take a systems view.

Seek out challenge owners who are taking a systemic approach to designing what an adaptive system looks like. Climate-KIC are aware of some initiatives that are already doing this. Two important examples are the collaboration between CSIRO, NAB, and IAG with the development of the Resilient Investment Vehicle, and the 'Communities in Transition' program sponsored by Queensland Department of Environment and Science. This second program has developed transition and adaptation roadmaps for

several regions in Queensland, taking a scaled portfolio approach to overcome the barriers identified in our project.

RECOMMENDATION 3:

Incorporate the system view to finance practice.

Collaborate with financiers and economists who are seeking to apply systemic thinking to investment practice.

For many people in the industry, this requires different data and the application of new creative thinking, methodologies and tools; nothing short of an industry paradigm shift. There are substantial cultural, disciplinary, and institutional barriers to this, which ought to be made explicit as a core requirement for any subsequent adaptation finance project.

THE NEXT STEPS

Through this Project, the seeds of a new methodology to break down the adaptation finance gap has been outlined from a theoretical perspective. The next step is to turn this into on-ground action. Climate-KIC are looking for regional leaders, systems thinkers, innovation practitioners, investment professionals, ecosystem shapers, and creative voices to join the next iteration of an Adaptation Finance Project aimed at deploying financial capital in aid of the transformation to an adaptive Australia.

PROJECT CONTEXT

THE PROBLEM: A SHORTFALL IN ADAPTATION INVESTMENTS

Many public and private assets will need to adapt to withstand the effects of climate change. The impacts from climate change are diverse; from acute (such as flooding), to chronic (such as sea level rise). Hence the measures to respond to these threats are also diverse; from large infrastructure projects (such as a seawall), to small alterations to ecological/biological projects (such as restoring mangroves).

However, global investment in climate adaptation is broadly acknowledged to be inadequate in much of the world,^{5,6} leaving individuals and property unnecessarily exposed to the effects of extreme weather, natural disasters, and other impacts exacerbated by climate change. This shortfall is referred to as the adaptation finance gap. Existing mechanisms, instruments and frameworks to finance climate adaptation measures are not meeting either market appetite, or the needs of the beneficiaries of adaptation. The scale of climate adaptation

investment requirements suggests that financial intermediation will be required to help channel capital towards these projects.

THE RESPONSE: CONVENE A MULTI-STAKEHOLDER GROUP TO CO-CREATE A SOLUTION

To form the Project Steering Committee for this Project, Climate-KIC brought together a group of stakeholders from state government, local government, climate risk analysis service providers, insurance and banking. These organisations are listed in [Table 1](#). The list included key sectors that have a stake in identifying a mechanism for commercial adaptation financing in Australia.

The Steering Committee agreed there was need for adaptation finance. However, existing mechanisms and policy frameworks provided insufficient incentives for financiers to invest in adaptation projects, thus leaving communities and businesses vulnerable to climate change impacts.^{7,8}

Table 1: The Project Steering Committee

Organisation	Sector
National Australia Bank	Banking
Suncorp	Insurance
Sustainability Victoria	State Government
NSW Department of Planning, Industry & Environment	State Government
Queensland Department of Environment and Science	State Government
Local Government Association for South Australia	Local Government
XDI	Climate Risk Analysis
Investor Group on Climate Change (IGCC)	Industry Body for Investors
Queensland Investment Corporation	Government-owned investment company

⁵ United Nations Environment Programme (UNEP). (2018). The Adaptation Gap Report 2016. *United Nations Environment Programme (UNEP)*, Nairobi. <https://www.unenvironment.org/resources/adaptation-gap-report>.

⁶ World Economic Forum, (2015), *Global Risks 2015, 10th Edition, Insight Report*, http://www3.weforum.org/docs/WEF_Global_Risks_2015_Report15.pdf.

⁷ UNEP. (2016). The Adaptation Gap Report 2016. *United Nations Environment Programme (UNEP)*, Nairobi. Retrieved from: <https://www.unenvironment.org/resources/adaptation-gap-report>

⁸ World Economic Forum. (2015). *Global Risks 2015, 10th Edition, Insight Report*, http://www3.weforum.org/docs/WEF_Global_Risks_2015_Report15.pdf.

The Project was active for two years, and its progress can be retrospectively categorised into three distinct phases. [Figure 2](#) in the following chapter provides both a summary of these phases and the Project timeline, and identifies the key engagements, workshops, and project outputs.

WHY NOW?

There is a growing interest from within the financial sector, and amongst asset owners, in finding solutions for adaptation finance. Their interest is driven by multiple factors, including a desire for diversification; hedging; responsible or sustainable investment; and exposure to emerging opportunities. Investors are generally becoming more aware of climate change, and are increasingly interested in 'physical risk' and opportunities. Advances in climate science, computing power, and other fields (such as satellite imaging and engineering) increase the feasibility of identifying where

adaptive measures are required, whilst assisting in the evaluation of the financial implications of climate impacts. Methods and means for calculating the benefits of such investments are advancing rapidly. A small number of concepts and pilot projects have been developed in the past few years. Some are variations on existing financing methods (such as resilience bonds, which draw heavily on catastrophe bonds). Others, such as the Environmental Impact Bonds, are innovative in the application of the pay-for-success mechanism to new 'green resilience' measures.

[Table 2](#) provides a detailed list of the drivers for investment in climate change adaptation projects.

With this backdrop, the project aimed to build on this momentum to find a project and build the investment vehicle. The logic followed that finding a project, while simultaneously working together to define adaptation, would provide a breakthrough.

Table 2: Drivers for Climate Change Adaptation Finance

Market drivers	<ul style="list-style-type: none"> • Insurance premiums (reducing or increasing due to changing climate risk exposure). • Assets becoming insurable/uninsurable due to changing climate risk exposure (adding or removing assets from the insurance market). • Risk to underlying mortgage-value of assets. • Ratings agencies and reinsurance increasingly requiring investors and other financial actors to demonstrate climate resilience. • Exposure to climate risk may lead to a risk to credit ratings, i.e., threat to Treasury AAA rating. • Pension and superannuation funds increasingly seek investments with long-term time horizons consistent with those of adaptation projects. • There are examples of natural disasters undermining local government ability to repay loans, i.e., rate-paying base moving elsewhere. • Demands for sustainable investment portfolios from shareholders and superannuation funds.
Strategic drivers	<ul style="list-style-type: none"> • Knowledge of the importance of climate risk is increasing across both the public and private sector. • Modelling of financial impact of some climate-related risks is becoming more robust. • For institutional investors, adaptation represents a diversification of their portfolio. • Investors seeking a first leader advantage are willing to move quickly to invest in projects. • The impacts of social disruption and exacerbated disadvantage of the most vulnerable, due to physical impacts of climate risk, are already occurring, and there are clear financial impacts. • There is a spectrum of political risk of a 'business-as-usual' approach, whilst community and citizen sentiment for action on climate change grows. • Sovereign risks, as the number of climate refugees increases. • Litigation risks, e.g., governments and private sector being brought to account for failing their duty of care, or not disclosing. • Environmental values at risk of being irreversibly lost, e.g., coastal squeeze of coastal ecosystems.

PROJECT AIM & JOURNEY

In May 2018, the Project was established by Climate-KIC Australia, in order to demonstrate how the financial sector could invest in climate adaptation to deliver commercial returns and greater community resilience.

Over the course of two years, the project moved through three distinct phases as described in [Figure 2](#).

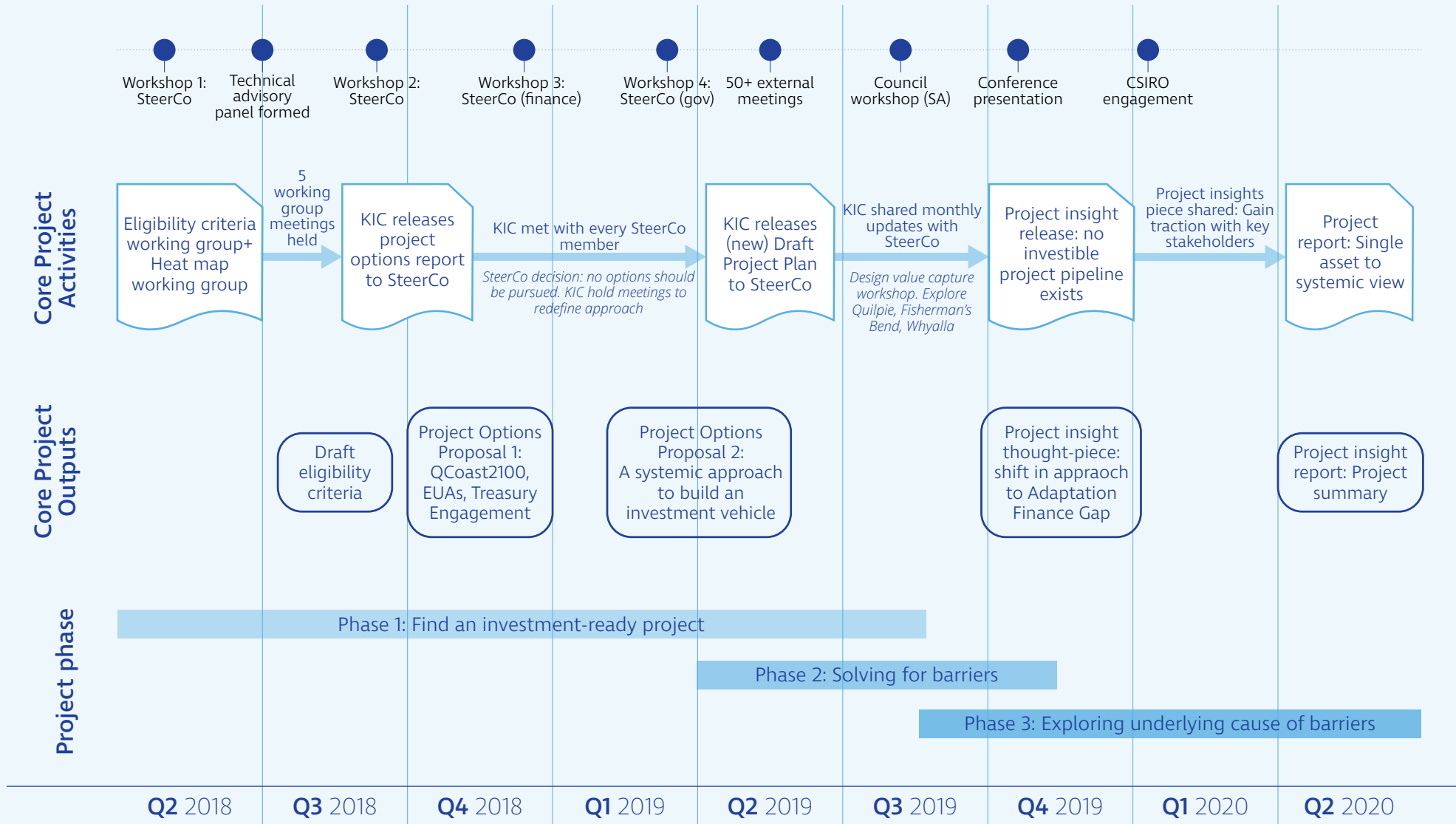


Figure 2 - Summary of the Project activities over time (note SteerCo = Steering Committee) (Appendix 3 has more information on the number and type of engagement).

PHASE 1: FIND AN INVESTMENT-READY PROJECT AND DEFINE ADAPTATION

From May 2018 the Project focused on finding and securing an investment deal on a significant adaptation project that was deemed to be investment-ready. ‘Investment-ready’ was defined as projects that matched the eligibility criteria specified in [Table 3](#). The eligibility criteria were developed by the Project Working Group, and its purpose was to allow the Steering Committee to assess project candidates against agreed criteria, to ensure they delivered adaptation and financial outcomes. Given the project aim was to increase private investment in adaptation, a key eligibility criteria for any project is profitability. In other words, any adaptation project which would fit the eligibility criteria would have a clear return stream, as well as adaptation benefits. Concurrent with the development of the eligibility criteria, a separate Working Group was created to complete a project heat mapping process. The purpose of this process initiated the search for an adaptation project, by identifying readily available adaptation project databases. [Appendix 1](#) provides a summary of the information sources that were explored during the heat map work, and lists the possible projects that were identified.

Because adaptation is not easily defined, and different actors (financers and government) may understand it differently, as a group we sought to get a collective understanding of adaptation. During the initial phase of the Project, the Steering Committee sought to develop a definition for an adaptation project. The first definitional work was to differentiate the scale of adaptation—small, medium and large. This is particularly important because it relates to the scale of how projects are financed by institutional investment, and bond issuers, starting at around \$300million. Projects deemed ‘small’ were replicable household level interventions that could be scaled; ‘medium’ projects were defined as a project and farm,

or those that span across multiple assets that would need to be aggregated; whilst the ‘large’ category extended to those that were stand-alone projects at a scale large enough to attract institutional investment. A diagram of these categories appears in [Appendix 2](#).

The Steering Committee discussed the characteristics of adaptation, including taxonomy, however the Climate Bonds Initiative and the European Taxonomy for sustainable activities were both found to be addressing this issue with significant effort and funding. Therefore, rather than conducting extensive work in defining a taxonomy, the Steering Committee for the Project resolved to keep up-to-date with what was provided by these groups.⁹

By November 2018, Climate-KIC had shared two projects with the Steering Committee that were deemed to have potential to fit the eligibility criteria. These projects were ‘QCoast2100’ in Queensland, and ‘Adaptation in Environmental Update Agreements’. Importantly, both these projects required significant engagement and discussion, including with policy makers, to better understand if they generated an investment-ready project. Following engagement with the Steering Committee on these two options, it was agreed that these projects would not be pursued at this time, within the scope of this Project, as these projects would likely not meet the eligibility criteria, since they did not offer sufficient scale of investment and/or they were not easily replicable.

The workshop with the Steering Committee held in November 2018 articulated a new path forward for the Project. A new ‘Project Scan’ process and project proposal were devised, where the purpose was to explore the Australian landscape for broad adaptation projects, then bundle projects that met the eligibility criteria, packaging them up into an adaptation deal (i.e. an adaptation bond).

⁹ European Commission. (2020). EU taxonomy for sustainable activities. European Commission Website. Retrieved from: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

Table 3 - Project eligibility criteria (continued overleaf)

Criteria	Description: For projects, measures or programme	Assessment method: Project, measures, or programme	Weighting
FINANCIAL			
1. Profitable	<ul style="list-style-type: none"> Risks of damage/impacts are quantified and evaluated. Beneficiaries can be identified. Payers can be identified (either beneficiaries or on behalf of). Benefits are expected to exceed costs in a way that can be financially evaluated. Benefits can be realised in timeframes that can be aligned to a financing mechanism. 	<ul style="list-style-type: none"> Benefits exceed costs: Y/N. Risks estimated: Y/N. Beneficiaries identified: Y/N. Quality of cost/benefits estimates (Qualitative). Quality of risk estimates (Qualitative). Dependent upon instrument, e.g., Risk transfer = 1- up to 5 years (upper end). Debt = up to 20 years Pay for Performance 	Hurdle
2. Additional	<ul style="list-style-type: none"> Projects/measures that would otherwise not be financed. 	<ul style="list-style-type: none"> IGCC list for guidance to type of project/measure: Y/N. Project beneficiaries are typically unable to access existing forms of financing: Y/N 	Hurdle
3. Measurable	<ul style="list-style-type: none"> Has program logic, established output and outcome measurement. 	<ul style="list-style-type: none"> Are benefits measurable?: Y/N. What is the method for identifying benefits? (i.e. if not obvious, how well established or comprehensive is the methodology for identifying benefits?) 	Hurdle
4. Scalable	<ul style="list-style-type: none"> Provides for aggregation of small projects. Able to be grown to scale over time. 	<ul style="list-style-type: none"> Is there a trusted aggregator or simple assessment mechanism that can take on the due diligence? 	7
5. Replicable	<ul style="list-style-type: none"> Able to be replicated in another geography, or for another physical risk. 	<ul style="list-style-type: none"> Expert opinion (due to the novelty of the mechanism). 	5
EFFECTIVE			
6. Resilience Building	<ul style="list-style-type: none"> Reduces vulnerability and risk of damage from chronic or acute physical impacts of climate change. Minimum requirement of the project; project proponents have identified risk of vulnerability reduction potential. Longevity/resilience of measure/project. 	<ul style="list-style-type: none"> Pass or fail - minimum requirement of the project; project proponents have identified potential risk reduction. 	Hurdle
7. Catalysing	<ul style="list-style-type: none"> Able to be structured to bring other investors into the market. 	<ul style="list-style-type: none"> Qualitative. 	5
8. Critical	<ul style="list-style-type: none"> Delivers or protects essential services (water, electricity, food supply, housing). Delivers or protects critical infrastructure with high levels of systemic inter-dependency. Provides protection for a large population of beneficiaries. 	<ul style="list-style-type: none"> Number of people benefitting. Ranking of the basic need it provides. Level of redundancy. 	10
9. Responsible and Inclusive	<ul style="list-style-type: none"> Benefits most vulnerable communities. Improves access or affordability. Meets precautionary principle to mitigate any potential negative environmental, health or social consequences. 	<ul style="list-style-type: none"> Qualitative assessment based on submission by project proponent. 	10

Criteria	Description: For projects, measures or programme	Assessment method: Project, measures, or programme	Weighting
CO-BENEFITS			
10. Socially positive	<ul style="list-style-type: none"> Delivers economic co-benefits in employment or local content. Delivers social co-benefits in social capital building, health or behaviour change. Delivers outcomes for Indigenous peoples. 	<ul style="list-style-type: none"> Quantitative assessment based on evidence by project proponent. 	5
11. Environmentally positive	<ul style="list-style-type: none"> Reduces carbon emissions. Delivers ecological, biodiversity or water outcomes. 	<ul style="list-style-type: none"> Quantitative assessment based on evidence by project proponent. 	5
RELIABLE			
12. Organisational capability	<ul style="list-style-type: none"> Has strong organisational governance, financial stability, and project implementation track record. 	<ul style="list-style-type: none"> Due diligence conducted on project proponent. 	7
13. Regulation	<ul style="list-style-type: none"> Has strong public policy framework. Has clear pathway through regulatory approvals. 	<ul style="list-style-type: none"> Qualitative assessment based on submission by project proponent. 	5
14. Stakeholders	<ul style="list-style-type: none"> Has strong local community support and third-party support. 	<ul style="list-style-type: none"> Qualitative assessment based on submission by project proponent and outcomes of community engagement activity. 	5

Subsequently Climate-KIC led a comprehensive scan of the adaptation project landscape in Australia. This was done through key-stakeholder meetings, by attending and presenting at conferences, and through desk-top research. Despite over 60 stakeholder meetings and attendance at eight adaptation-related conferences or workshops, no additional projects meeting the established criteria were found. [Appendix 3](#) provides a summary of all the stakeholder engagements that were conducted throughout the Project. At this point of the Project, there was considerable confidence that an adaptation project, or projects, that met the Steering Committee's eligibility criteria, did not readily exist in Australia.

PHASE 2: SOLVING FOR BARRIERS

After an extensive search, no adaptation projects were found to be investment-ready, according to the criteria. Despite not achieving the original aim, the Project Scan phase did provide deeper insights into the barriers to finding investment-ready adaptation projects in Australia. The central problem was the difficulty in establishing investible business models for adaptation that could be replicated at the scale necessary to be of interest to institutional

finance. There are clear benefits—particularly long-term benefits—to implementing climate adaptation, but these benefits were not translated into revenue. Climate-KIC documented the reasons for this throughout the Project, and the summary is shown in [Table 4](#). The key to unlocking private finance is to have robust, investible business models for adaptation. Any subsequent attempt to solve the adaptation finance dilemma would need to have this as its central goal.

The logical next step for the Project was to explore ways to unlock the value of adaptation in a way that can lead to an investible business model. To refine this approach, a sub-working group with National Australia Bank, Suncorp and Climate-KIC was formed. There were two main approaches to achieving this, broadly categorised as 'value capture', or initiatives to improve climate risk data and its use. Value capture methodologies identify what and where financial and non-financial value is created, and then implement mechanisms to capture this value. Here, individuals and organisations are 'assigned' their proportional benefit derived from implementing a particular adaptation project. The logic is, those who benefit pay more through mechanisms that include grants, subsidies, taxes, commercial benefits and development contributions.

Hence, value capture provides a path to establish a business case by capturing the dispersed value of adaptation projects. Improving the quality and usability of climate risk data was considered a key enabler to finding a business case, because it put the 'right' price on climate risks. Groups like The Lightsmith Group invested in climate data as a first step in generating longer term value of adaptation.

The design phase focused on workshops and conversations that articulated the value of revenue streams, for adaptation projects, or adaptation components of projects. Ultimately, the goal of this Project phase was to demonstrate business models for adaptation and consequently meet the investment criteria. The working group focused on a value capture approach for a large single asset within a region. During the design phase, it became increasingly clear that the level of complexity (because of the inter-relationships between benefits, costs capacity to pay, and the mechanisms of financial return-on-investment) represented a significant barrier to this approach. Climate-KIC met with other organisations who had taken a similar approach and determined that following a value capture logic for a large single asset would not overcome the systemic barriers that had been identified, and would be unlikely to meet the eligibility criteria. [The next chapter](#) of this report provides more detail about these barriers.

PHASE 3: EXPLORE UNDERLYING CAUSES OF BARRIERS

Phases 1 and 2 yielded no investable projects, and no clear pathway to removing the barriers that prevent adaptation projects from being investment-ready. This realisation presented an impasse for the Project. Climate-KIC's

response to this was to expand the scope of our consultation and research. Climate-KIC connected with the National Resilience Taskforce to access their Profiling Australia's Vulnerability report¹⁰ and EIT Climate-KIC in Europe. In July 2019, Climate-KIC joined EIT Climate-KIC for a workshop in London focused on exploring 'Transformation Capital', a new investment logic for systemic investing.¹¹ These organisations were not orientated solely on solving the adaptation finance gap, however, the principles of their work provided the seeds for a learning pivot.

The next stage of engagement dealt with orienting the understanding of organisations towards the underlying cause of barriers to adaptation: the lack of finance being channelled into complex societal transformations. Indeed, this is an important framing for the adaptation challenge in Australia. The focus on finding investible business models is ultimately in support of a broader goal of adapting the real economy. This conversation sparked a fundamental shift in the Project framing; what is referred to as a shift from 'single asset' to 'systemic'. A systemic view seeks to identify ways to value the interconnected nature of adaptation.

After pivoting the project, Climate-KIC searched during the first half of 2020 for tangible examples of stakeholders who were taking a systemic approach to adaptation (as opposed to searching for a single project, i.e., a single asset approach). The [Next Steps](#) section of this report details some potential avenues for a follow up project.

¹⁰ Commonwealth of Australia National Resilience Taskforce. (2018). *Profiling Australia's vulnerability: The interconnected causes and cascading effects of systemic disaster risk*. Retrieved from: <https://www.aidr.org.au/media/6682/national-resilience-taskforce-profiling-australias-vulnerability.pdf>.

¹¹ EIT Climate-KIC. (2019). *Transformation Capital Initiative*. EIT Climate-KIC website. Retrieved from: <https://www.climate-kic.org/programmes/transformation:capital/>.

ADAPTATION FINANCE PROJECT INSIGHTS

© Roebuck Bay WA, Australia. Image: NASA Earth Observatory.

This section explains the lessons from the Project and the insights generated. A key strategic intention of this report is to provide a clear narrative of what was undertaken, and what conclusions were reached, in order to help fast track future projects, and avoid the pitfalls this Project encountered. This section will detail the sensemaking journey and insights generated at each phase.

No investment-ready adaptation projects exist in Australia as current projects are designed to access funding and not finance.

Despite a wide search, no investment-ready adaptation projects that met eligibility criteria were found to exist in Australia. Through the engagement effort completed in the scan for the Project, it was clear that most adaptation projects in the current context are designed to access funding, rather than finance. For example, most local councils develop an adaptation plan and design adaptation projects that are reliant on state or federal government funding. In many jurisdictions across Australia, governments are unable or unwilling to raise rates to finance adaptation. In other words, projects do not generate a cash-flow that can be used to generate a financial return, whilst additionally paying back the interest.

The clarity from such a comprehensive finding has its benefits; the need to revisit the assumptions of the Project was obvious. Despite the interest it received, the alignment of a goal, and having a multi-disciplinary Steering Committee with direct links to ready-to-be-deployed capital, the overarching aim of the Project (being to demonstrate investment in adaptation to achieve community resilience and financial returns) was not achieved. The sticking point was that the business model for adaptation was unclear.

Methodologies that aim to remove barriers as the single-asset level will not scale to create significant numbers of investment-ready projects.

As the project scan phase did not yield any clear answers, the next step was to, in greater depth, articulate barriers for adaptation finance. The logic was that the Project should deconstruct, unpack and eventually solve for these to unlock a business model for individual adaptation projects.

There are several widely acknowledged reasons why the business model for adaptation are not clear. These range from a variety of market failures, to an

acknowledgment that many of the adaptation benefits are public goods with dispersed beneficiaries. These reasons, among others, make it hard to determine a traditional business case for investment. A detailed list of the barriers to producing investment-ready adaptation projects are provided in [Table 4](#). This table, developed by Climate-KIC, builds on the Investor Group on Climate Change's (IGCC) 'From Risk to Return: Investing in Climate Change' report, which had previously characterised barriers and drivers to climate change adaptation, and included additional information based on broad consultation with the Steering Committee and other adaptation finance leaders.

Further, Climate-KIC delineated how these barriers impact the flow of investment to adaptation projects ([Figure 3](#)). [Figure 3](#) became a central frame of reference in Phase 1 and 2 of the project. In Phase 1, we attempted to find projects that were investment-ready and, hence, did not encounter these barriers. The most distinct opportunity was identified in the cases where the adaptation benefit created a clear and new commercial benefit, e.g., coastal reclamations used to build esplanades that enhanced adaptive capacity, and created new land that attracted new waterfront business and development. The broader challenge in the Australian context was that projects with clear commercial benefit, where adaptation is a positive externality, would not mitigate the climate change threat we were trying to address.

To remove the barriers—i.e., to remove the orange crosses shown in [Figure 3](#)—a value capture approach was explored. Value capture applied to adaptation projects, and improving climate risk data for individual projects, were two approaches that aimed to help establish a business case for an adaptation project.

The value capture methodology aims to provide a path to establish a business case by capturing the dispersed value of adaptation projects. There have been several organisations that have completed great work in deconstructing this process, i.e., Value

Table 4 - Barriers for Climate Change Adaptation Finance[#]

Market barriers	<ul style="list-style-type: none"> • There is no real basis for making confident assumptions about the likely effectiveness of adaptation interventions and how much of the benefits from avoided costs can actually be attributed to the intervention. • The capital markets, and the methodologies they use to assess investments, require certainty and high confidence measures, and to do this, they make assumptions that ignore reality of complex, adaptive systems. In other words, conventional risk profiling for investment decisions often won't scale for adaptation. • Value capture remains a challenge, i.e., these projects tend to have their value in avoided costs and risk reduction, rather than easily identifiable savings and revenue, and can create 'positive externalities', where the benefits are diffuse and cannot always be captured by the Project proponent. • Adaptation is often a social welfare-improving undertaking, in that it has public good characteristics that provide benefit that are non-rival and non-excludable.¹² • Some organisations apply a narrow vision of 'value', which does not incorporate the long-term and diverse benefits and beneficiaries of adaptation. • Legal hurdles to capturing the value of some adaptation project includes, for example, competition law, which may prevent revenue capture insurance premiums, i.e., if an insurance company were to conduct adaptation works to protect their customers, they are unable to lock these customers in to long term contracts to repay the value of those works. • Future risks may not be appropriately priced in property markets. • Uncertainty is associated with estimates of future possible benefits from adaptation (although we cannot project with any certainty the possible future events and impacts or costs).
Political/ organisational/ regulatory barriers	<ul style="list-style-type: none"> • Many adaptation responses, i.e., flood and land use, are explicit constitutional responsibilities of the government,¹³ therefore government is responsible for the legal mandate for adaptation (can be a barrier or a lever). • Given some climate change events are infrequent, public perception of the risk can be low, hence the rewards for government for making investments in adaptation may be low.¹⁴ • Adaptation investments are made to avoid damages, and decisions-makers are rarely rewarded for avoiding damages (because these benefits are largely unseen) • The localised nature of investing in adaptation means there are questions of equity distribution, i.e., federal or state funding may be considered unfairly funnelled to local adaptation works in one region, but not another. This issue is potentially most acute in coastal adaptation, where funding may be distributed to adapt high-value private assets. • Uncertainty in a country's institutional environment, including regulatory and legislative risk, and even currency risk, can make investing in adaptation a challenge. This is likely not highly relevant in the Australian context. • Establishing a distribution of liabilities between public actors and private investors may be challenging (i.e. who pays the damages if the adaptation Project does not mitigate the risk).¹⁵
Strategic barriers	<ul style="list-style-type: none"> • Adaptation projects are conceptually challenging because climate impacts are diverse, from acute (such as bushfires, storms and flooding) to chronic (exposure to long-term shifts in climate patterns like sea-level rise or heatwaves (heat stress)).

[#] Table 4 builds on information in IGCC 'From Risk to Return: Investing in Climate Change' 2017 and workshop discussion.

¹² Bisaro, A., & Hinkel, J. (2018). Mobilizing private finance for coastal adaptation: A literature review. *Wiley Interdisciplinary Reviews: Climate Change*, 9(3), e514.

¹³ Schneider, S.K., 2014. *Dealing with Disaster: Public Management in Crisis Situations*. Routledge.

¹⁴ Bisaro, A., & Hinkel, J. (2018). Mobilizing private finance for coastal adaptation: A literature review. *Wiley Interdisciplinary Reviews: Climate Change*, 9(3), e514

¹⁵ Bisaro, A., & Hinkel, J. (2018). Mobilizing private finance for coastal adaptation: A literature review. *Wiley Interdisciplinary Reviews: Climate Change*, 9(3), e514

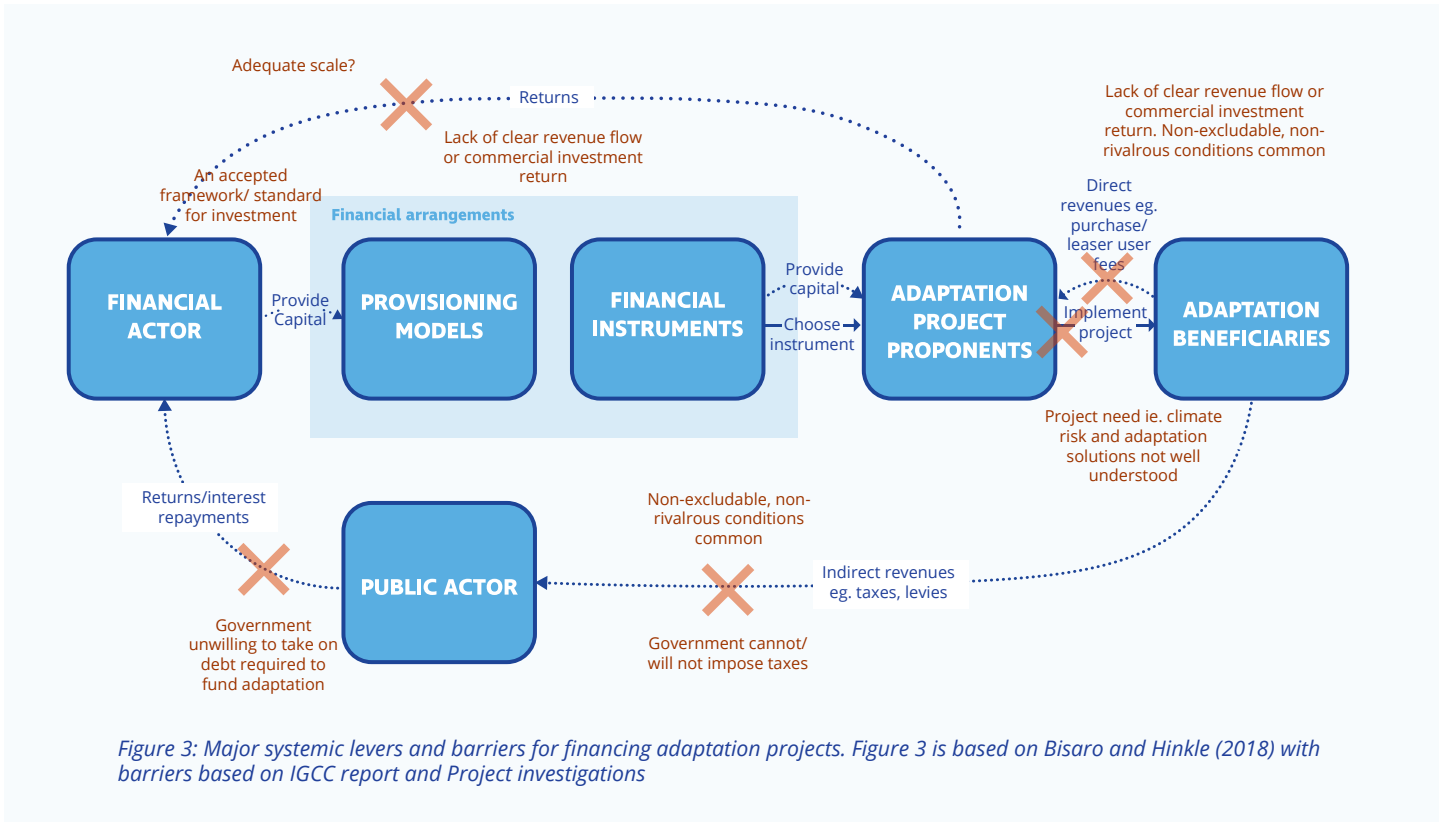


Figure 3: Major systemic levers and barriers for financing adaptation projects. Figure 3 is based on Bisaro and Hinkle (2018) with barriers based on IGCC report and Project investigations

Advisory Partners, Deltares (in the Netherlands) and the Victorian Institute for Strategic Economic Studies. These organisations have developed models that allocate qualitative and quantitative benefits to different organisations, to demonstrate their overall benefit.

The challenge with this approach is that implementation has proved to be complex and slow. Based on broad engagement, the concern is this approach will likely lead to investing in incremental changes and/or bespoke solutions which are not scalable. Each step along the way is subject to numerous, lengthy and contested conversations about the level of benefit attributed to each of the stakeholders. These conversations, by design, will be followed by consideration of the legal and contractual methods required to get many disparate beneficiaries to pay their share and establish a business case. Further, value capture would ultimately result in economically efficient outcomes rather than equitable outcomes. There is a highly contestable discussion here about the role of government

in protecting citizens against climate change, versus a user-pays approach. Theoretically, this can establish a business case, but we do not see it happening at any practical scale.

However, there are value capture methodologies that will form part of a solution to adaptation finance, particularly when they combine with value creation methodologies. For example, value capture has worth in being applied at the strategic level around problem framing and options identification, as well as at the 'project' or 'portfolio' assessment level, to inform more detailed business case assessments. The criticisms against value capture is when it is applied to the single asset/project level only.

A second area widely considered as a key enabler to finding a business case for adaptation is to improve climate risk information at a scaled down level, so individual asset or project risk is known. There are two instances where data is used in the adaptation finance markets: project proponents use it in the disclosure process

(i.e. to respond to TCFD) (project proponent), and the finance and insurance industry seek this data to establishing the 'right' price for adaptation risk.¹⁶ Insurance and associated financial industries are the industries who price risk. The logic is that more usable and transparent climate risk information, which could be used in existing models to judge climate risk to individual assets that make up a portfolio, would allow participants in the market to better understand the likelihood of a climate event occurring, and would therefore be able to better price the risk.

The challenge with this approach is multi-faceted. Firstly, the absence of climate risk information is used as an excuse to wait for better information before acting. Secondly, there is a risk that a focus on having definitive data biases the construction of broad-sweeping, hard infrastructure designed to withstand specific climate risk events, rather than driving the economy towards becoming systemically more adaptive. A belief that the climate risk data provides the right threshold feeds a mindset that the future can be predicted, and infrastructure optimised to withstand that future. Alternatively, an assumption of unpredictability would incentivise solutions that are more *adaptive* in nature (as opposed to *adapted*). This potentially creates a mismatch in the outcomes. Whilst such outcomes currently work for financial accounting methodologies through the delivery of private and economic values, they do not reflect the many non-economic and public values that are important for society. Thirdly, an expectation that climate risk information is accurate may create unintended consequences at the regional or country level. Rather than incentivising investment to improve the adaptive capacity of a region, investment systems, which view climate risk information as definitive and trustable data, may drive divestment, or a higher cost of capital, in those regions defined as high risk.

Instead of spurring investment, this approach could increase the pace of economic decline in some regions. Finally, some experts advocate that there is already sufficient decision-ready information, and the real problem is that it is not being utilised. This suggests that it is sometimes not the unavailability of climate data that is holding back action, rather the ability to use this data effectively in organisations that is at issue.

Indeed, for the broader community, the 'correct price' of climate risk on an individual asset is not as important as the right and ability (including affordability) to feel safe and secure in a climate-changing world. Ultimately, this is what a market for adaptation should deliver. A focus on generating improved climate risk information as a key enabler to finding a market may miss the progress we can make immediately, and risks driving solutions that are not systemic responses to the challenge (i.e. *adapted* societies, as opposed to *adaptive*).

The Project approach did not align to the system dynamics causing the adaptation finance gap.

These findings made clear that the impasse was more fundamental - it was caused by the underlying paradigm of the Project approach. The Project approach did not match the system dynamics which would achieve adaptation. Adaptation is referred to as a complex problem. It is the consequence of interconnected, ongoing, multi-layered interventions and has non-linear, interconnected systems properties. The mindset or framing of the Project at the single asset level was creating the problem. In other words, the adaptation finance gap will not disappear if we continue addressing it under the single asset investment logic. Future initiatives that aim to solve the adaptation finance gap should address the cause, not the symptoms of the adaptation finance gap.

¹⁶ The Global Innovation Lab for Climate Science. n.d. *Climate resilience adaptation finance and technology transfer facility (CRAFT)*. Retrieved online at: <https://www.climatefinancelab.org/project/climate-resilience-adaptation-finance-transfer-facility:craft/>.

For a long time, the sustainable development sector has understood that single interventions rarely lead to systemic change. They miss out on combinatorial effects that arise when investments are aligned and coordinated to create strategic synergies. Assessing and selecting one asset at a time is not an effective strategy for generating impact at the systems level. Adaptation, like many other areas of sustainability, deals with an interconnected, contextual and dynamic system. Due to these characteristics, the value of adaptation is not created at the single asset level; rather, it is the consequence of interconnected, ongoing, multi-layered interventions. Table 5 identifies some of the mismatches between the properties of resilience to climate change and the current dominant single asset investment logic.

In applying single asset investment logic to climate change adaptation, the resulting limitation is a significant investment gap between what is required by society, and where funding is flowing. Even with innovation, this gap will not disappear if we continue attempting to address it using single asset

investment logic, as it is the logic of these markets itself that is creating the gap in investment in the first place. The alternative approach is to take a systems lens, and explore how a portfolio of interventions work together to shape value in any single asset. For example, researchers at University College London have developed an integrated portfolio composition approach that produces greater non-financial impact, compared with the single-asset approach, whilst making a greater set of projects investable based on financial risk/return criteria.¹⁷

Solving the adaptation finance gap requires a shift from a single asset view to a systemic view.

A shift in the unit of analysis to ‘systems’ level unlocked potential avenues to explore the market value of adaptation. A system is a complex, interconnected network which is inter-dependent, i.e., changes in one part of the system impact another. A ‘geographic system’ is a city or a region; ‘structural systems’ could be a combination of transport, primary production and the natural

Table 5 - The mismatch between the qualities of adaptation and a single asset investment logic

	Characteristic of climate change adaptation	The current dominant, single asset investment logic
Scope	Climate change resilience is an emergent property of a complex system. Resilience is the result of many inter-dependent actions that interact unpredictably with multiple actors.	Valuation at the single asset level requires simplification. Value is found using reductionist, atomistic approaches, where societal needs are disaggregated into sub-systemic units/ indicators.
Timeframe	Adaptation is long-term. It requires setting long-term societal visions, recognising that progress will be non-linear.	The single asset investment logic struggles to account for long-term benefits and disproportionately values short-term benefits.
Managing Change	Adaptation is a process, not an end-state. We are aiming to be adaptive. Learning occurs when feedback is produced, e.g., through actions that interact with each other and with their external environment. Change happens through prototyping, learning and refinement to mitigate risk to the vision.	Learning occurs through fast-cycle feedback on individual investments and sectors, often informed solely by price signals. Change happens as investors react to perceptions of risk and opportunity at the level of individual investments.
Role of finance	To maximise strategic synergies and future, long-term value, harnessing self-organising capacity of complex systems.	To minimise cost and manage risk.

¹⁷ Medda et al. (2013). *Assignment 29 - Strategic UDF Investing and Project Structuring* [submitted to the European Investment Bank]. Published by Mazars LLP. Available at https://www.eib.org/attachments/documents/jessica_strategic_udf_appendix_4_en.pdf.

environment. Clearly, the interconnectivity of systems is endless.

As previously stated, the crux of the challenge is demonstrating a value for adaptation in a form that is valued by markets. Applying a systems lens to the adaptation unlocks previously unseen opportunities to harness value in two main ways:

1. The value of adaptation is inherently a function of the interconnected, contextual system, resulting in the value of a single asset being dependent on the dynamics of the system in which it operates. A systems lens allows for better characterisation of the value of the asset.
2. The opportunity to design a system where the future value of adapting can increase over time. A single asset view misses the agency, that actors in this system must shape, and is what is valued in the future. A coordinated strategic plan, at sufficient scale aligned around a clear mission, will shape future value and attract investment to those projects.

A systemic approach provides the opportunity for future Projects to move from incremental to transformative change.

The opportunity of adaptation finance is to take a strategic approach and create future value by shaping new markets. A system view of adaptation finance allows the exploration of combinatorial effects between different assets, through a strategic lens. Structured interventions change preferences in society, which shapes the market value of products and projects where value was previously hidden, or non-existent. For example, if a region's ambition were to electrify the transport system, limiting a policy and investment lens to just invest in companies building electric vehicles is not a strategic approach. Instead,

optimising strategic synergies would mean exploring how multiple levers of change work together—i.e., behavioural change, status change, micro-grids, dispersed energy systems, and innovation systems—to maximise serendipitous new technologies. Over time the combination of strategic and well-implemented interventions will increase in value. These assets reinforce each other to catalyse value.

The combined, holistic use of change levers has led to a transformation in renewable energy value, to the point where it is seen as commercially viable (in most scenarios), and attracts a large amount of private capital on commercial terms. The outcome of embedding these concepts into an approach to address adaptation finance is an exploration of the opportunity for the public and private sector to work together to implement a strategy that uses a multitude of different levers, which shape a broader market for adaptation. This approach shifts governments' role from aiming to fix a market failure, or the public good logic, to a role as a catalyst for broader market value for adaptation. If done strategically, applying market shaper logic, and money invested in adaptation, can shape the future market for adaptation. The logic applies Mariana Mazzacato's¹⁸ economic theories and concerted efforts aimed at intervening holistically in systems to create market-shaping forces. This is particularly true in the context of public sector missions led by 'entrepreneurial States'.¹⁹ Investments made in alignment with such missions will arguably enjoy more compelling risk/return characteristics than those made in isolation.

The benefits from building strategic portfolios is being increasingly recognised by some of the most progressive mission-oriented investors. For instance, under the label of 'ecosystem investing', a growing number of

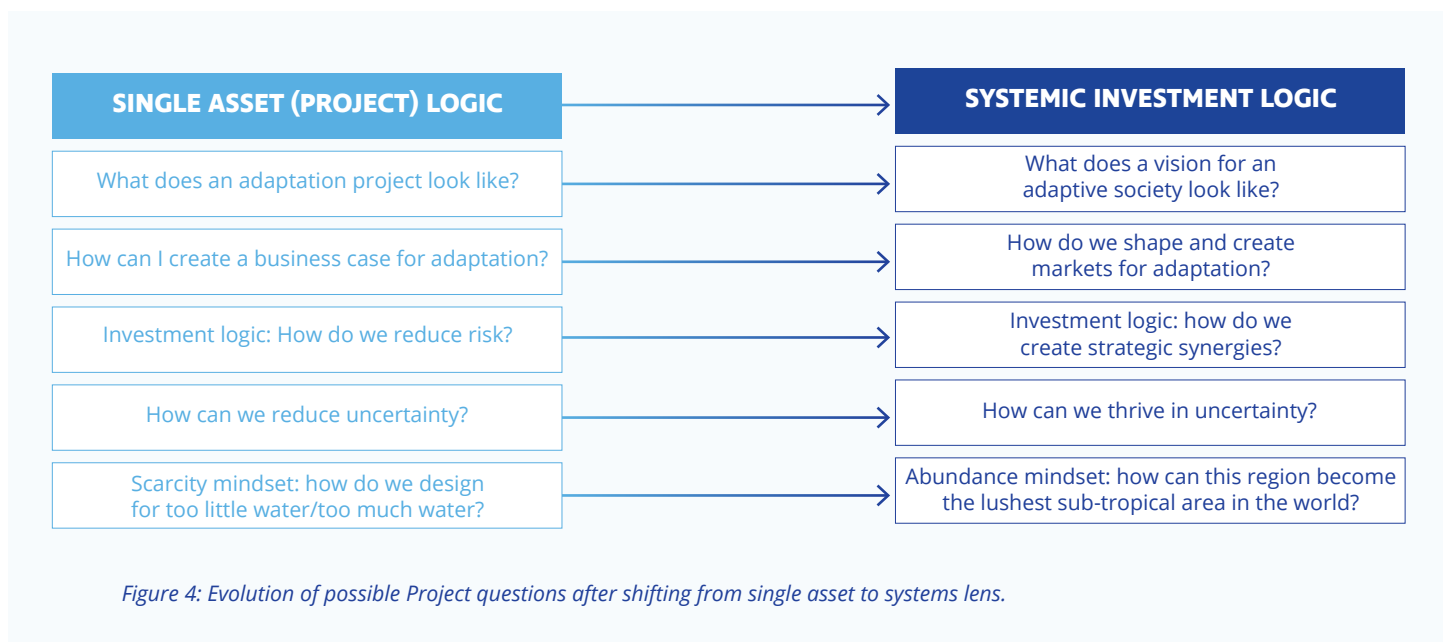
¹⁸ Mazzucato, M. and Ryan-Collins, J. (2019). *Putting value creation back into public value: From market-fixing to market-shaping*. Retrieved from: https://www.ucl.ac.uk/bartlett/public-purpose/sites/public-purpose/files/public_value_final_30_may_2019_web_0.pdf

¹⁹ Mazzucato, M. (2015). *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, Penguin

impact investors have started to pursue an approach that emphasises the engagement of a multitude of players that drive outcomes within a social system of interest. Researchers have modelled the benefits from such an integrated, multi-layered approach in the context of mission-oriented urban development. They were able to show that combining projects with different typologies and risk/return characteristics not only converts some projects from non-viable to investable (through cross-subsidy effects), but also maximises non-financial impact at the portfolio level.²⁰ The single asset lens does not allow for the analysis to be strategic, by dismissing the hidden powerful forces of systems which work together to manipulate the future value of adaptation.²¹

The exciting aspect of taking a systems view is that it allows us (leaders wishing to solve the adaptation finance gap) to ask bolder, truly transformative questions that address the

adaptation finance dilemma. It is the ability to create, understand and ultimately manipulate strategic synergies between assets, that opens the important conversation about the *agency that each actor has to drive change* towards a shared vision. Whereas the early discussion applied a problem solvers' discourse, a systems view opens a discourse around emergence and future enabling and creating. The hope is these new systemic questions will lead to more holistic approaches to deliver long term value of adaptation. [Figure 4](#) shows the difference between a question targeted at the single asset level, and systemic questions. [Appendix 4](#) has an even longer list of the new questions we were asking when taking a systems view.



²⁰ Medda et al. (2013). *Assignment 29 – Strategic UDF Investing and Project Structuring* [submitted to the European Investment Bank]. Published by Mazars LLP. Available at https://www.eib.org/attachments/documents/jessica_strategic_udf_appendix_4_en.pdf.

²¹ Civic Capital Initiative, Dark Matter Labs. (2018). *Civic Capital: Transforming how we generate and allocate value*. <https://darkmatterlabs.org/Civic-Capital-Transforming-how-we-generate-and-allocate-value>.

NEXT STEPS

© Cooper Creek, Lake Eyre SA, Australia. Image: NationalMap, Digital Transformation Agency

This report has detailed the process it undertook, and outlined key insights, to speed and support the design of future projects focused on Adaptation Finance. One thing this report makes clear is that an approach focusing on a single intervention will not solve the dilemma.

Climate-KIC hopes that the report provides a balance between humility and the provision of inspiration and motivation to those leaders who have been contributing the knowledge in this space for many years and decades. Humility is needed because implementing a systemic approach will be challenging. Equally the intention of this report is to increase the motivation of leaders to tackle this challenge – the learnings made through this Project, a conversation for how genuine transformation can be achieved - without needing to challenge some of the fundamental premises of market economics. The impact of a well coordinated, strategic project may unlock a transition that is far more comprehensive than the members of this Project thought possible at the outset.

The next Adaptation Finance Project will bring together a diverse set of stakeholders who have a shared intent to transform systems and develop principles to guide the project development phase for both the governmental and finance sectors. From this work there are two clear criteria for forming the next Adaptation Finance Project:

1. Find people and organisations that Climate-KIC refer to as ‘challenge owners’: those who are designing transitions to a resilient and adaptive society in a way that considers the systemic and complex nature of the challenge.
2. Find people and organisations who have capital to deploy, and who are ready and willing to explore how this capital can be deployed in aiding a systems transformation.

In other words, the next iteration will design the capital and investment side of the challenge, considering the fundamentally systemic nature of the problem. Where the single asset paradigm is analogous to a square peg in a round hole, a new

approach will be profoundly based in a logic of complexity and systems thinking. The group formed in the next iteration of the Project should be open to working together to develop principles that guide the project development phase.

Partner with challenge owners who apply a systems view

Future Projects will seek out challenge owners leading system transformation programs that have the following criteria:

1. a clear goal or mission—a vision of the feature of the society which you are trying to shape toward;
2. identified a structured portfolio of connected interventions/innovations (projects that learn from and rely on each other to increase transformation);
3. a plan that considers a wide range of levers—considered policy, governance, and capacity building; and
4. targeted at or are at a regional scale.

Climate-KIC found one program of work that seemed to match these criteria. Through engagements with Queensland Department of Environment and Science (DES) in February 2020, Climate-KIC are collaborating with the Communities in Transition (CIT) program, which is being supported by DES and co-developed by University of Southern Queensland, James Cook University, CSIRO and The Eco Efficiency Group. The Communities in Transition Program is working closely on future pathways for economic transition and recovery in Cook Shire, Rockhampton and Charters Towers (three northern Queensland communities), as well as Central Highlands, Barcaldine and Goondiwindi (three southern Queensland communities). They have developed six regional roadmaps and 19 pre-feasibility

business cases which build clean growth choices for communities delivering for transition, understanding and adaptation. This program:

- had a clear goal and mission to build resilient regions in terms of the environment and economy;
- appeared to meet the criteria, as it was structured as a portfolio of connected interventions/innovations (business cases that learn from and rely on each other to increase transformation), e.g., in Rockhampton, the pathway explores how investments in river infrastructure could offer interconnected opportunities to provide flood resilience and new jobs in a circular economy, aquaculture, eco-tourism and lower impact agriculture;
- focused across a wide range of levers—investable business cases were built, but the importance of policy, governance and capability building to create the transition was recognised; and
- interventions that had scale—Communities in Transition was looking at regional scale business cases, not small pilots.

Climate-KIC are actively seeking to work with more challenge owners.

Partner with leaders in finance who take a systems view.

The other side of the adaptation finance puzzle is a methodology to use capital as an active lever of change to transform the system, rather than a passive receptor of change. To this end, it is less important to

specify the quantity of capital allocated to a specific area (i.e. sustainable finance); rather, it is more important to show how this money is to be spent. A single asset paradigm positions capital as a passive recipient of value that already exists. A systems view allows capital to work with each other across multiple assets to enhance the value of each other, and do this over time. The key questions area; ‘who is ready and willing to explore how this capital can be deployed in aid of a systems transformation?’ and ‘what does it look like in practice?’

An answer to the second question is being currently developed in Europe, through an initiative called Transformational Capital. The Transformational Capital initiative recognises the world as a complex adaptive system and applies systems thinking to all stages of the investment process. At its core, Transformational Capital explores how investors can more effectively deploy investment capital as a lever of change in service of a transformation, whilst generating commensurate financial returns. Where our current approach focuses on short-term return on single investments, systemic financing steers capital by linking investment in interventions that share common purpose.²² This allows investors to leverage synergies, capture value and drive system transformation.

A [White Paper on Transformation Capital](#) has been released in September 2020. We welcome leaders responsible for deploying capital (from the public and private sector) to form part of a initiative which puts systemic investment logic into action in Australia.

²² Dark Matter Labs. (2019). *Building Civic Capital*. Available at <https://www.civic.capital/>.

CONCLUSION

The crux of this problem has always been relatively simple: where are the business models for adaptation so that we can use market dynamics to scale any efforts for a single intervention to a broader economic transition? Through this Project, the seeds of a new logic for a way to achieve this has been outlined. The next step is to turn this into on-ground action.

A future Adaptation Finance Project will coordinate a group of actors who are not only aligned to a goal, but who also share a fundamental logic of the cause, and ultimately the approach, to address the Adaptation Finance Gap. Climate-KIC believes that this sets any future project up to have a much higher chance of success.

This work has never been more important. With the backdrop of Covid-19, the public and private sector need to play a role in rebuilding an economy in a way that allows future generations to be more productive, and

ultimately more able to pay back the public debt that has been created. The way to do this is to invest in a way that is catalytic, highly strategic, and leveraged. Catalytic investment means that a smaller sum of money catalyses much larger sums of money to be invested i.e., spending thousands to catalyse millions or billions of further investments. 'Strategic' refers to a long-term goal of that investment being in productive, future-proofing and future-enabling assets. 'Leveraged' means that a single organisation's investment aligns with those of other organisations towards complimentary aims, so that, for example, an individual \$200k investment leverages a million dollar impact.

A systems view of the adaption finance challenge allows for a potential agent of change to turn up all these powerful economic forces.

APPENDICES

© Great Sandy Strait, Hervey Bay QLD Australia. Image: NASA Earth Observatory.

Appendix 1: Heat Map

Appendix 2: Defining Adaptation

Appendix 3: Stakeholder
Engagements

Appendix 4: Systemic Questions

APPENDIX 1: HEAT MAP

The 'Heatmapping' working group was formed to determine organisations that already have potential adaptation projects and/or identify projects directly. The list below is a list of the Organisations that keep relevant databases, which were identified during the heatmapping exercise.

Data Source For Planned or Completed Climate Adaptation Projects:

- CDP/KIC Cities 'matchmaker programme'
- XDI/Climate Risk Pty Ltd
- Victoria's Climate Change Adaptation Plan 2017-2020
- Green Climate Fund
- Agricultural department - Victorian Governments
- Tourism department - Victorian Governments
- Queensland Climate Resilient Council program
- Dairy Victoria
- South Australian Wine Industry Association
- NSW Government Regional engagement and adaptation planning
- Shelter Belts in WA
- Queensland Reconstruction Authority (QRA)
- FRAC
- Coast Adapt Website
- Townsville CHAS
- Mount Crosby pumping station risk assessment
- NSW Dept Primary Industries
- Climate Change Research program
- Climate Smart Capital - Unlocking Private Sector Financing for Climate Change Resilience in Victoria
- LGSA
- ICLEI: Local governments for sustainability survey
- Green finance initiatives in the European Union (EU)
- Green finance initiatives in the United Nations (UN)
- Climate Investment Fund (CIF)
- Adaptation fund

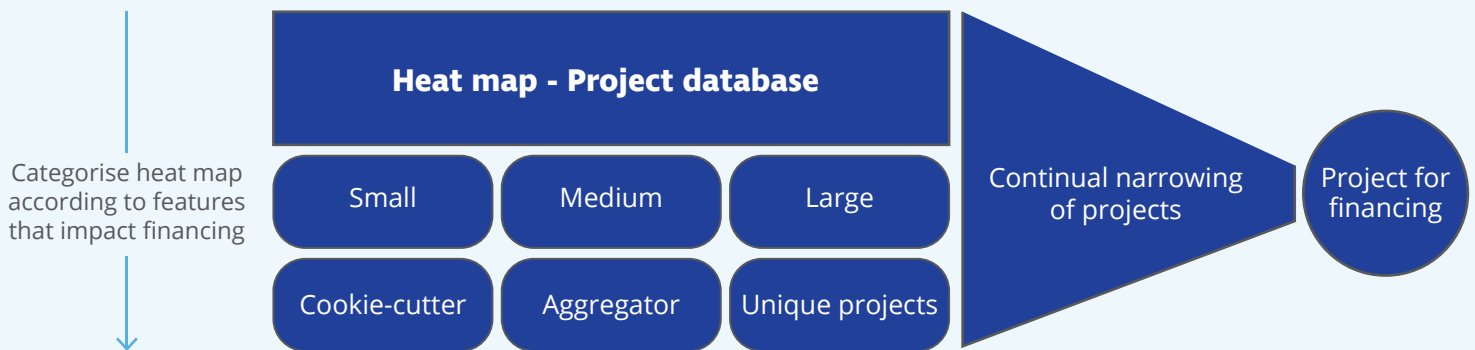
Projects that we shared with the Steering Committee because they were judged to warrant further investigation:

- Flood Resilient Homes Program
- State Infrastructure Strategy 2018 - 2038
- WAGA, NET Balance, Federation UNI, Monitoring and evaluations program.
- Global Centre of Excellence on Climate Adaptation
- National Climate Change Adaptation Research Facility (NCCARF)
- Climate Adaptation Knowledge Exchange (CAKE)
- Townsville Coastal Hazard Adaptation Strategy
- Green Climate Fund - adaptation initiatives
- Healthy Home in Victoria
- EUAs

APPENDIX 2: DEFINING ADAPTATION

ADAPTATION FINANCE PROJECT

Categorising projects according to features that impact financing

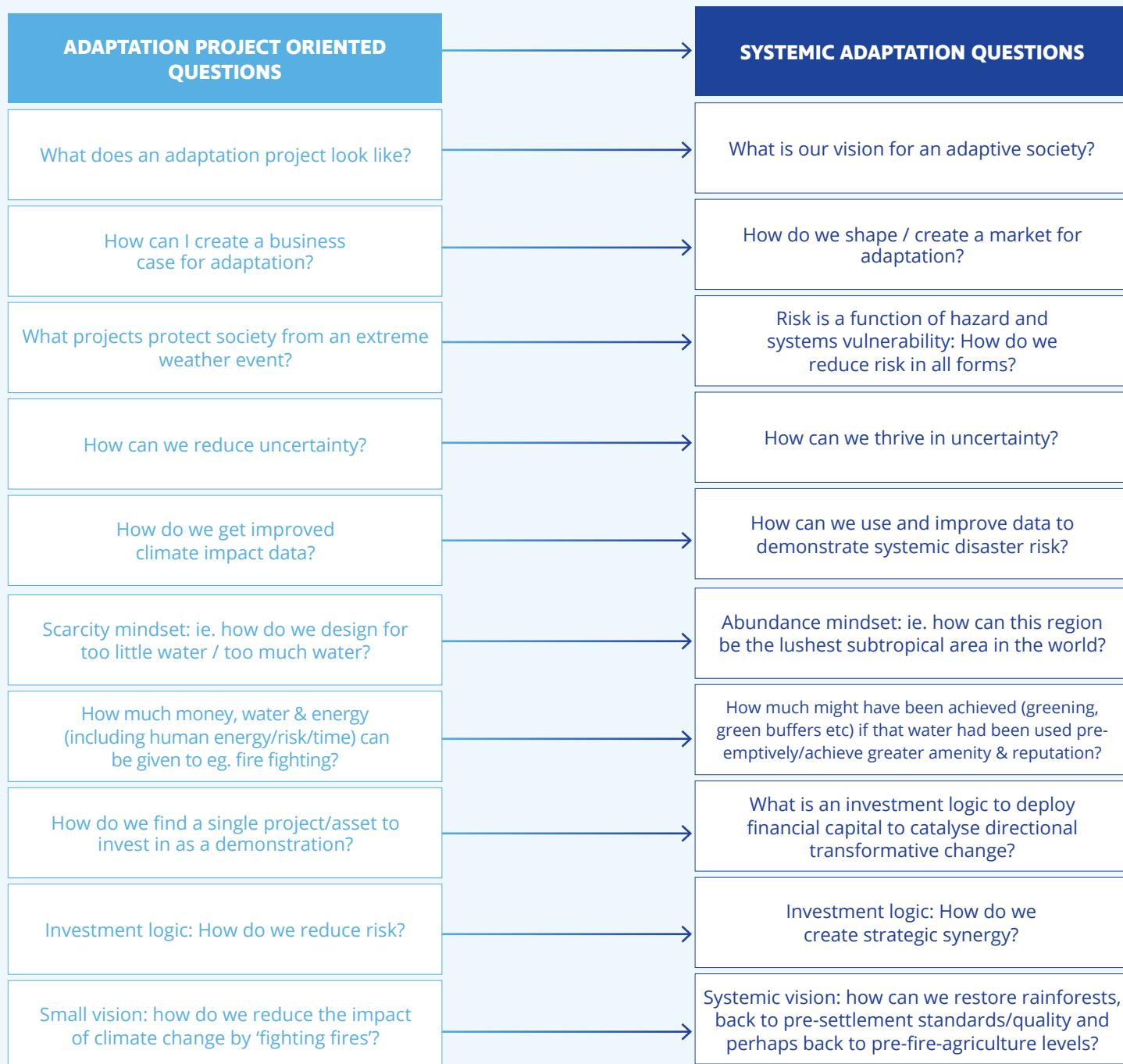


APPENDIX 3: STAKEHOLDER ENGAGEMENTS

STAKEHOLDER ENGAGEMENTS

Stakeholder engagement type	Purpose of the engagement
2 Steering Committee meetings, 5 Project workshops and 5 prep-meetings for value capture workshop design.	KIC facilitated the co-creation of new ideas and sharing of project options with the broader group. The 5 meetings were preparing to run a value capture workshop in Melbourne, which for reasons outlined in the report was, after sensemaking sessions, deemed to not be the right approach for this Project.
10 working group meetings.	A smaller group of the project, formed to push forward at a quicker pace on the development of key project drivers (i.e. the project eligibility criteria) and specific barriers (i.e. identifying issues around project options).
70 internal project meetings.	Engagement with individuals, or individual organisations, who are in the Steering Committee or technical advisory committee, to dive deeper into specific project drivers of barriers, in order to support project development.
60 external stakeholder meetings.	The purpose of these meetings was to connect with other organisations who potentially had adaptation projects that needed funding, or were able to provide leads to organisations who did.
8 conferences, and related symposiums, attended or presented at.	Climate-KIC presented on the findings of the project at 2 conferences participated in other adaptation finance related symposiums

APPENDIX 4: SYSTEMIC QUESTIONS





IN COLLABORATION WITH:



Climate-KIC Australia is a knowledge and innovation community established and funded by a national collaboration of private and public sector organisations in 2017. We are an independent, not-for-profit organisation that aims to link research, business, entrepreneurs, investors and government to drive transformational activities that unlock change at the speed and scale the climate challenge needs. Climate-KIC Australia works in collaboration with EIT Climate-KIC.

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