

Developing regional climate resilience investment plans and project pipelines

Implementation guidance to support regions
through the Adaptation Investment Cycle



Authors:

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Help us improve this document:

This document represents the current best thinking available from the literature and within the consortium of how regions can develop Investment Plans which help them mobilise the resources. However, it is a rapidly evolving area, with new approaches and examples constantly being generated. In addition, piloting this work with 100 regions will result in significant amounts of new learning and understanding. Therefore, the guidance will be updated over the lifetime of the Pathways2Resilience project, based on our learning from working with our 100 regions.

If you have any feedback on how it could be further improved throughout the lifetime of the Pathways2Resilience programme, please provide feedback to

hello@Pathways2Resilience.eu

What's new in this draft?

Version two of this guidance is a significantly updated version of the guidance on developing Climate Resilience Investment Plans and Project Pipelines. It incorporates learning from work with the first cohort of regions and their feedback, as well as developments from across the field since the first iteration.

Guidance has been reviewed and strengthened throughout, as well as being edited to be clearer and more concise. It includes specific updates to the processes in Phases, two, three and four. In Phase two, the focus on barriers has been expanded from merely focusing on sources and instruments to focusing on all barriers to finance. In phase three there is more emphasis on costing packages of adaptation, before undertaking detailed economic and financial appraisal and finance matchmaking in phase four. This is a more targeted process, which should ensure a stronger focus on developing costed packages which result in improved analysis, whilst also reducing the resource requirements on regions.

The guide also provides new resources. This includes two new phases of guidance on developing bankable projects (Phase five), and monitoring, evaluation and learning (phase six). There are also additional case studies included across all phases of the AIC. Finally, there are new annexes on enabling conditions, and an appendix on Just Resilience, demonstrating how equity considerations are mainstreamed throughout the process.



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Foreword

Adapting to ever more challenging climate futures provides significant economic, societal and environmental benefit to European regions and Europe as a whole. But numerous assessments have shown us that the amount of money being spent on adaptation is significantly below what is needed, and that public finance alone will not be enough. At the same time, the EU Adaptation Mission sets very ambitious goals, stretching regions further.

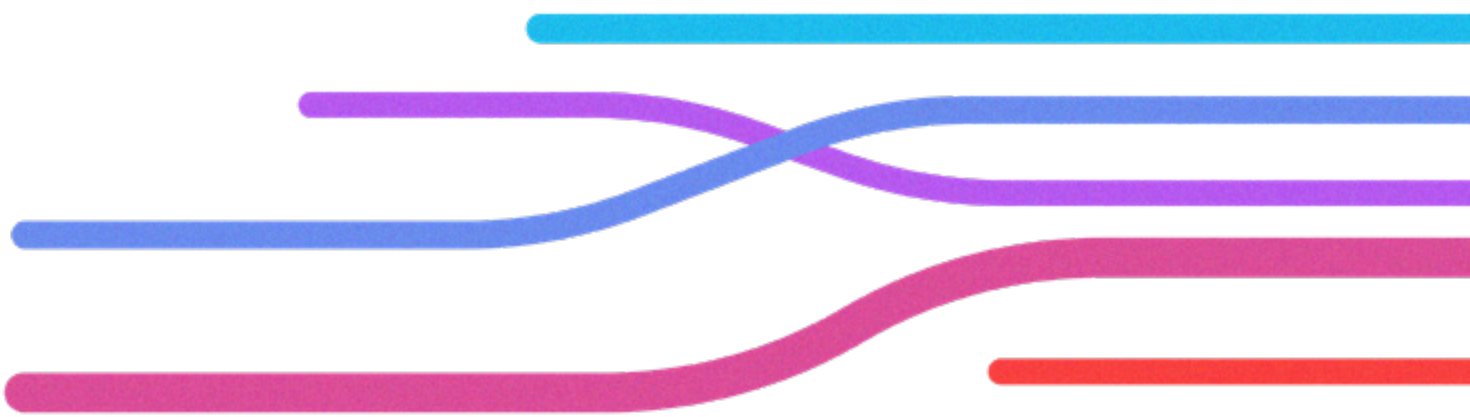
We know why the funds being allocated to adaptation are insufficient – there are issues relating to information, finance, market failures, policy and governance, and behaviours. There are also many practical barriers. But whilst the solutions will look different from region to region, we also know what to do to shape and redirect regional economies towards increased climate resilience through the use of strategic public financing, policy, regulation, and incentives.

Pathways2Resilience is supporting regions to develop Climate Resilience Investment Plans. These help regions translate their visions into bankable projects, helping quantify and structure the financing of their adaptation. In doing so, it encourages them to prioritise projects and diversify the range of sources and instruments, crowding in finance and action from the private sector, communities and citizens.

This practical guide outlines the process involved in this and helps regions to create an Investment Plan to boost their adaptation financing. As such, it is a significant step forward, but in many senses, it just marks the beginning – the real change will happen once regions start to pilot it, and work with us to enhance it further. We are eager to see what we manage to accomplish together.

Thomas Koetz
Coordinator, Pathways2Resilience





Executive Summary

This guidance is designed to support regions participating in Pathways2Resilience (“Pathways2Resilience regions”) to develop Climate Resilience Investment Plans (CRIPs). It aims to :



Outline the Adaptation Investment Cycle - the process to develop a Climate Resilience Investment Plan as part of the Regional Resilience Journey.



Help regions scope, prepare and deliver their Climate Resilience Investment Plans.



Build the adaptation financing knowledge and capabilities of those involved in developing a region’s Climate Resilience Investment Plan.



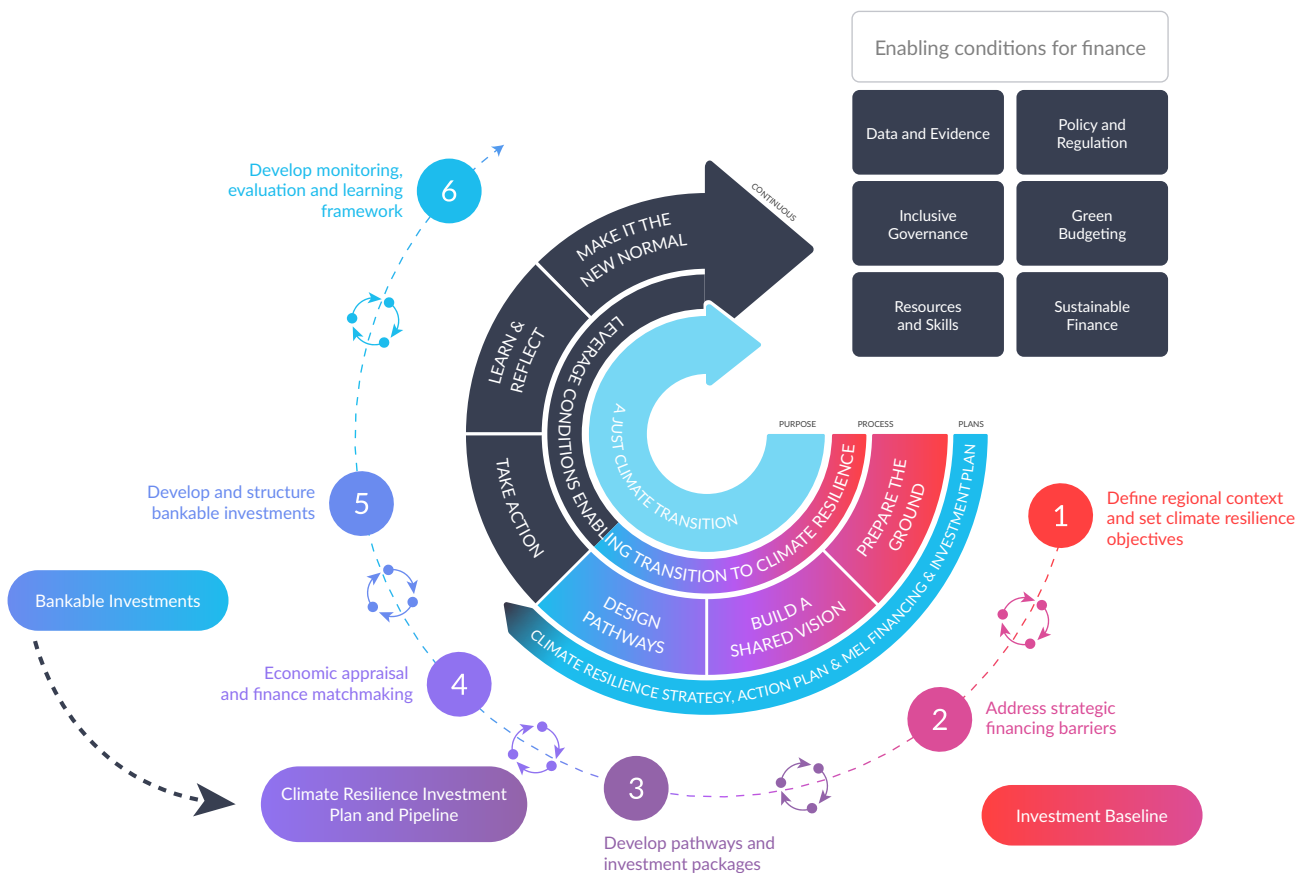
Provide an entry point for further training and learning on adaptation finance.

The guidance provides a model process for a region to develop a Climate Resilience Investment Plan to meet the regional investment needs identified in the Strategy and Action Plan, in collaboration with investors and the private sector. It helps regions move from high-level adaptation visions to a pipeline of bankable actions. Part one of the guide explores the concept of an Adaptation Investment Cycle and its benefits, Parts two, three and four provide detailed guidance to follow the cycle and produce a Climate Resilience Investment Plan.

The Regional Resilience Journey, Adaptation Investment Cycle and Investment Plans

Proper consideration of economics and finance throughout the adaptation cycle is a key enabling condition for adaptation. The delivery of a Climate Resilience Strategy and Action Plan depends on the availability of finance. Likewise, robust financing plans depend on knowing what you want to do. Because of this the processes are designed to be undertaken together. Pathways2Resilience has integrated a financing process into the Regional Resilience Journey (RRJ), known as the Adaptation Investment Cycle (AIC). This alignment is shown below:

Figure 1: The Adaptation Investment Cycle phases supporting the Regional Resilience Journey.



What an Investment Plan is and why it is needed

Climate Resilience Investment Plans translate your region's vision and Strategy into a pipeline of bankable projects for your action plan. They have a number of characteristics:

Figure 2: Characteristics of Climate Resilience Investment Plans.



Climate Resilience Investment Plans focus on financing the near-term actions of a region, whilst anchoring them in an equitable, region-wide, long-term approach to financing all regional adaptation needs. The approach is aligned to the economic and financial planning frameworks of public and private sectors, helping maximise the use of public money to crowd in additional investment,

Producing a Climate Resilience Investment Plan opens up new possibilities to fill funding and financing gaps for Strategies and Action Plans.

They ensure regions cost their total finance needs, appraise their economic and financial benefits, and use a diverse range of sources and instruments to structure bankable projects and a positive investment environment as part of a longer-term investment strategy for their pathways and innovation agendas.

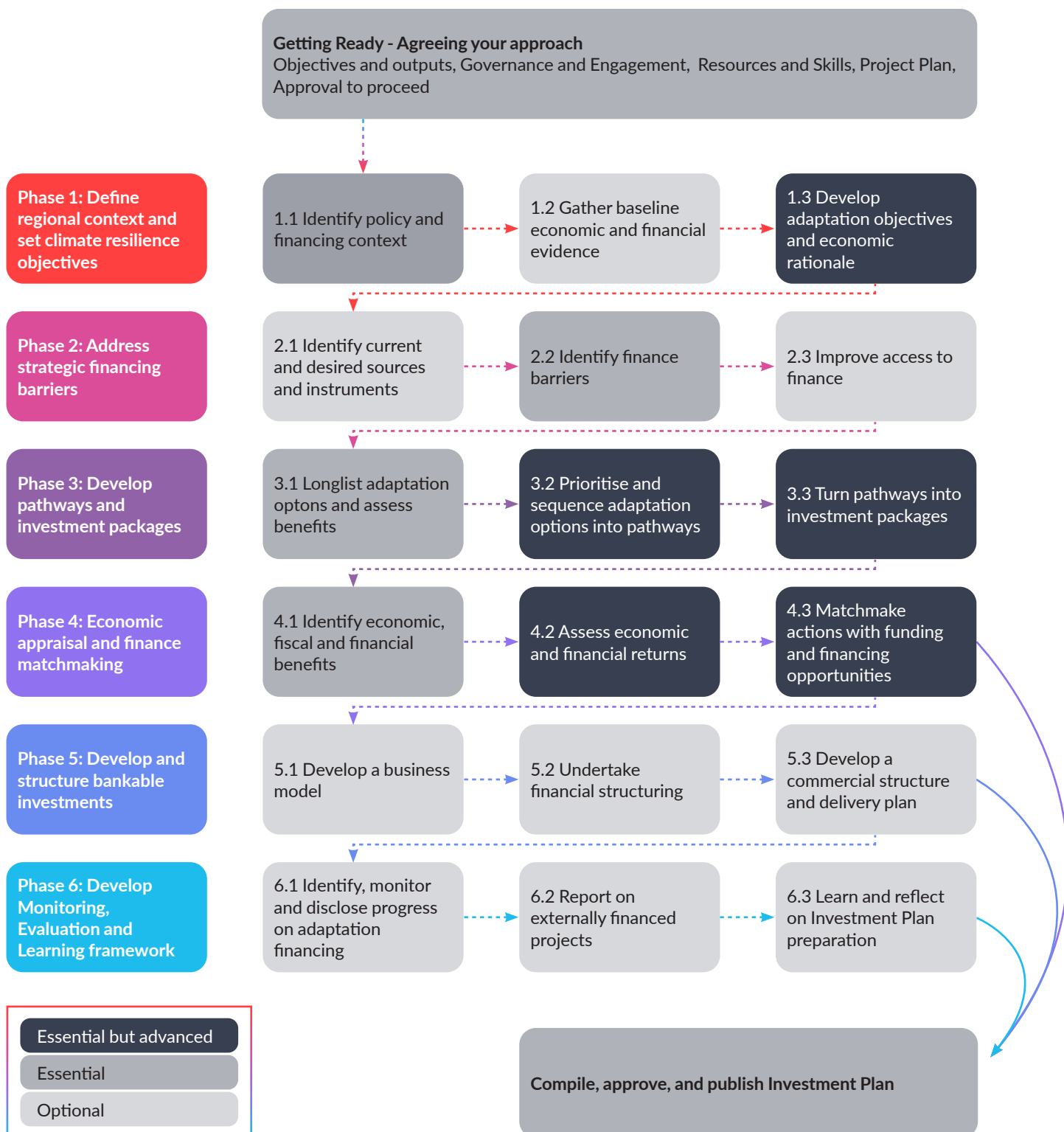
The process maximises economic benefits and helps fit adaptation needs within the limited budgets of the public sector by acknowledging that not all adaptation is urgent now. By sequencing and prioritising actions based on timings of risk, benefits, and existing policy and investment decisions, Investment Plans can help you meet adaptation needs within budgetary constraints and prioritises options which offer good value for money.

Developing an Investment Plan also maximises the chances of financing by activating and mobilising stakeholders, increasing the visibility of investment needs and opportunities. Finally, the process helps regions better understand the state of play, and builds region's collective skills, knowledge and capabilities in adaptation finance.

How to produce and implement an Investment Plan

The AIC consists of six phases. The Adaptation Investment Cycle has 18 tasks that help regions to move through these phases and develop their Investment Plans. **These are shown below:**

Figure 3: Phases and tasks to develop a Climate Resilience Investment Plan. Colours indicate relative importance for development.



Each Task is supported by a series of case studies, resources and materials to help you apply them in practice. A summary of each phase and its main activities are as follows:

1

Phase 1 – Define regional context and set climate resilience objectives

The aim of this phase is to understand the context for adaptation. This involves the policy and financial context, this includes regional development objectives, policy goals for adaptation, as well as the relevant financing processes and criteria, as well as existing relationships with the private sector and future investment decisions in the region. It also involves identifying an indicative budget envelope for thinking about the investment plan development.

Task 1.2 then involves collecting data on the historic financial and economic impacts of extreme weather, as well as on future costs on inaction, to help frame adaptation as a positive economic narrative and demonstrate it can help meet wider economic, social and environmental policy goals. Finally, these should be used to identify an initial budget envelope and develop a rationale and spending objectives to underpin the Investment Plan.

2

Phase 2 – Address strategic financing barriers

The aim of this phase is to understand the potential to diversify and scale the range of strategic financing options available to the region for adaptation. You can do this by exploring range of financing approaches already being used by the region and identifying future strategic sources and instruments that you may wish to use. Finally, regions identify barriers to unlocking these approaches and actions that are needed to help realise them either during the lifetime of the region's Strategy and Action Plan, or during their development.

3

Phase 3 – Develop pathways and investment packages

The focus of this phase is putting together a longlist of adaptation options that are economically effective, prioritising and sequencing them into pathways and then turning them into packages of similarly grouped actions ready for economic appraisal and financing. This links heavily with the RRJ tasks in the RRJ to explore options, assess their effectiveness and sequence them into pathways with short, medium and long-term actions.

4

Phase 4 – Economic appraisal and finance matchmaking

The aim of this phase is to identify the economic, fiscal and financial benefits, undertake detailed appraisal of the economic and financial returns before matchmaking to ensure a strong set of funding or financing for the actions in the action plan.

5

Phase 5 – Develop and structure bankable investments

For projects with more challenging financial arrangements, you may need to develop bespoke financing approaches. This phase involves building bespoke business models and financing arrangements, as well as associated commercial structures and delivery plans.

6

Phase 6 – Develop monitoring, evaluation and learning framework

This phase involves identifying indicators for the Investment Plan, before monitoring and disclosing progress. It includes monitoring requirements for private sector projects. Finally, it involves undertaking learning and reflection to identify improvements for future Investment Plans.

Once these phases are completed, you should compile your Investment Plan, ensure it has senior management and political approval and publish it. The pipeline of projects can be published on an investment prospectus, or submitted to the InvestEU portal, or other funding or financing mechanisms such as the Cities Capital Hub or the EIB's ADAPT Advisory platform.

Whilst the AIC is presented as a set of sequential phases and tasks developing an Investment Plan is not necessarily a linear process, and instead it is likely you may need to iterate a number of times. Therefore, the Adaptation Investment Cycle should be considered illustrative, and you may need to adapt the process to fit the local context.

The development of a Climate Resilience Strategy and Action Plan and Investment Plan go hand in hand. This means some of the Tasks are common to both the RRJ and AIC phases and tasks (for example economic appraisal of pathways), whilst others rely on inputs from the other journey (e.g. the list of options produced in the RRJ that are appraised for economic and financial viability). Throughout the guide we have highlighted where outputs from the RRJ can be used as inputs into the AIC process and where outputs can support the RRJ tasks. The specific linkages are discussed at the start of each phase of the AIC tasks.



Further guidance and support

In addition to this guide, there are a much wider set of resources available to support the process, and build your knowledge and understanding of adaptation finance. Pathways2Resilience has brought these together in the [Climate Toolbox](#). It includes guidance, training, presentations, websites and tools that provide more detailed examples of the topics referred to throughout this guide. Initial further resources referred to throughout the guide can all be found in the toolbox.



About Pathways2Resilience

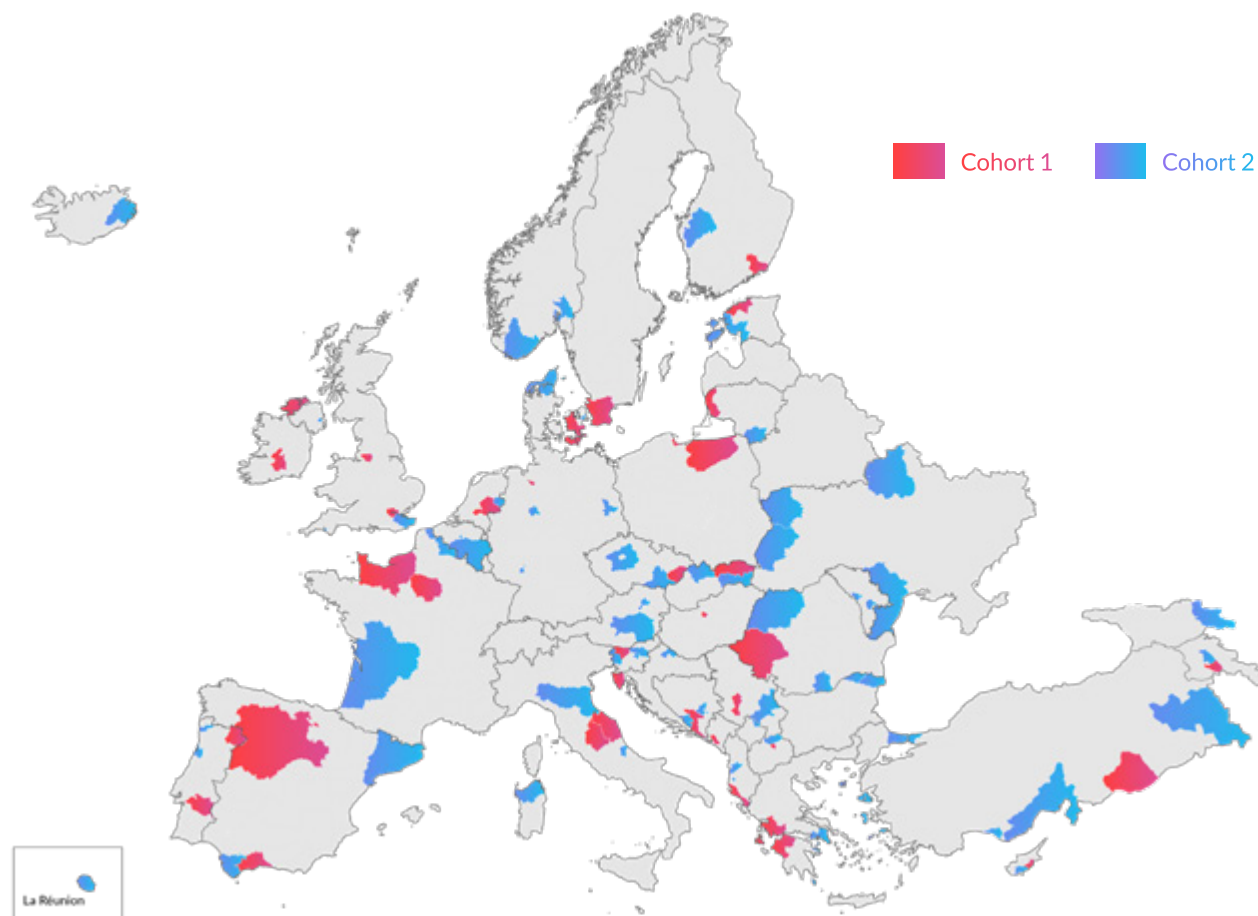
Adapting to climate change and building climate resilience in Europe has become crucial, as the disastrous impact of global warming starts to affect our continent, and especially its most vulnerable communities.

Pathways2Resilience is an EU-funded programme supporting more than 100 regions and communities across Europe to co-design innovative visions of a climate-resilient future. It is a flagship initiative of the EU Mission on Adaptation to Climate Change, building on assessment of climate risks and resilience opportunities, and helping regions formulate pathways to transformative adaptation in a locally-led and participatory way.

Thanks to practical guidelines, tools, and hands-on training and mentoring, the programme is supporting regions and communities in creating their own transformative adaptation strategies. Through two public calls, allocating a total of €21 million in cascade funding, selected regions will develop ready-to-implement innovation plans with concrete interventions supporting climate resilience.

Pathways2Resilience also provides locally-led Innovation Practice Groups engaging regions, local practitioners and citizens groups (with particular attention to vulnerable communities) and an Adaptation Finance Innovation Lab, to increase knowledge on innovative adaptation solutions and promote access to adaptation finance.

Pathways2Resilience Participating Regions



Albania

Selenicë
Tirana Region
Roskovec

Armenia

Ararat
Akunk

Austria

Elsbeere-Wienerwald
Styria

Belgium

Etterbeek
Ixelles
Wallonie

Bosnia & Herzegovina

Herzegovina-Neretva Canton
Blidinje Nature Park
Sarajevo

Bulgaria

Dobrich
Silistra

Croatia

Istria County
Križevci Prigorje

Cyprus

Aradippou Municipality
Limassol

Czechia

Zlín
Přerov
Podřipsko
South Moravia

Denmark

Zealand
Aalborg
Egedal

Estonia

Saue
West Estonian Archipelago

Finland

Kymenlaakso
South Ostrobothnia

France

Normandy
Île-de-France
Département du Nord
Nouvelle-Aquitaine
La Réunion

Georgia

Khaketi

Germany

Bremen
Luckau
Lippe
Worms

Greece

Ithaki
Western Greece
Attica
North Aegean

Hungary

Budapest

Iceland

Austurland

Ireland

Tipperary
Donegal

Italy

Marche
Umbria
Emilia-Romagna
Pescara
Tepilora Natural Park

Kosovo

Podujevë

Lithuania

Klaipeda
Alytus Region

Montenegro

Cetinje

Moldova

Cimişlia
Nisporeni

Project Coordinator:



Consortium Partners:



Netherlands

Gelderland
Arnhem-Nijmegen
Twente

North Macedonia

Municipality of Sveti Nikole
Northeastern Region

Norway

Akershus County
Kristiansand Region

Poland

Warmińsko-Mazurskie Voivodship

Portugal

Alentejo Central
Terras de Trás-os-Montes
Aveiro
Braga

Romania

West Region
North-West Region
Teleorman County
Cluj

Serbia

Arilje Municipality
Southern Serbia region

Slovakia

Prešov
Košice
Žilina

Slovenia

Gorenjska
Goriška
Trbovlje

Spain

Castilla y León
Málaga
Cádiz
Catalonia

Sweden

Skåne

Türkiye

Şanlıurfa
Alanya
Çukurova
Van Subregion (TRB2)
Üsküdar

Ukraine

Chernihiv Oblast
Lviv Oblast
Odesa Oblast
Volyn Oblast

United Kingdom

Greater London
Greater Manchester
Belfast
Kent
Plymouth

An aerial photograph of a coastal city, likely Lisbon, Portugal, showing a dense cluster of buildings with orange-tiled roofs. The city is situated on a hillside overlooking the ocean. A large, semi-transparent blue arc graphic curves across the right side of the image. The text '01' is positioned in the upper left, and 'INTRODUCTION' is centered below it.

01

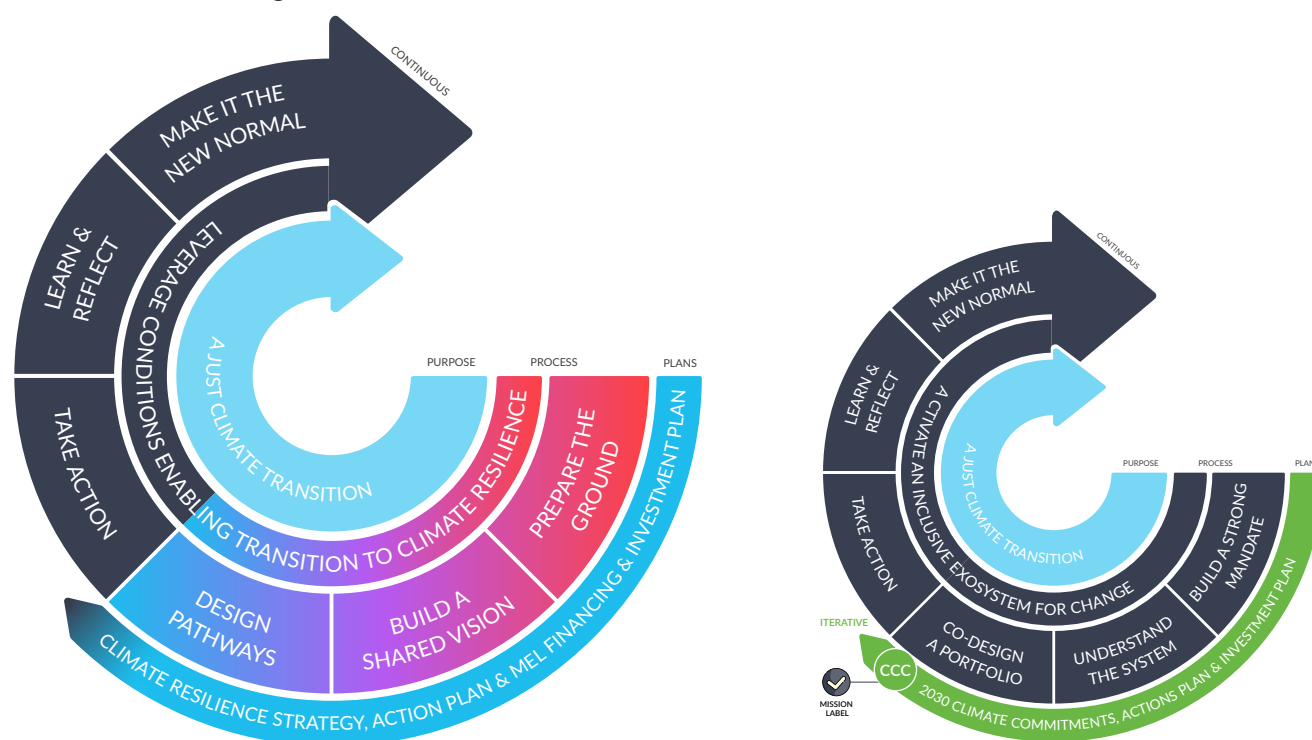
INTRODUCTION

Gabrielle Maurer | Unsplash

The EU Mission on Adaptation aims to create 150 climate-resilient regions and 75 demonstrations of systemic transformations by 2030. This will require significant investment -and the Mission Implementation Plan plans to leverage Horizon Funds to mobilize public and private funding. Regions and subnational governments, traditionally recipients of public adaptation funds, must now transition into stewards of adaptation capital to realise this approach. This involves leading financial planning processes to scale and target adaptation finance, similar to cities' roles in the [EU Mission on Climate Neutral and Smart Cities](#). In that initiative, cities develop climate neutrality and investment plans, forming a Climate City Contract, as supported by the [NetZeroCities](#) project.

Pathways2Resilience aligns with this approach, using a new adaptation planning approach, the Regional Resilience Journey, to move regions beyond being funding recipients to leading the mobilisation of finance for climate resilience as shown below:

Figure 4: The Regional Resilience Journey for the Adaptation Mission (left) and the Climate Transition Map from NetZeroCities (right).



This in turn unlocks additional investment support through the Mission Cities Capital Hub, a new dedicated investment facility from the European Commission (EC) and the European Investment Bank (EIB) to help finance the mitigation and adaptation missions. But the additional financing challenges presented by adaptation (such as context-specific nature of adaptation, the low revenues or returns, the uncertainty of future climate change and the need for coordinated collective action to implement adaptation options) means that planning for adaptation investment warrant a different process. This combines financial structuring with Strategy and Action Plan development to address these barriers effectively.

As regions you are the perfect scale to play this role. You understand their local economic, social and environmental needs. You understand risks and robust adaptation options, are networked enough to engage a wide range of actors, and large enough to lead action and push for stronger enabling conditions from member states and the Commission when things are not working. And many of you already have robust financial and investment management processes to build on to develop and structure bankable projects.

Who is this guide for?

This guide is for individuals within the Pathways2Resilience regions who will lead the development of their regional Climate Resilience Investment Plan as part of the Regional Resilience Journey. This includes the Pathways2Resilience programme manager and the adaptation finance officer, as well as those in the local team inputting into its development, such as technical officers and consultant, community engagement coordinators, politicians and innovation experts (see diagram below).

The guide is designed to ensure you are familiar with the Investment Plan process, in turn ensuring you can help engage and involve others in the efforts. However, the guide will also be useful to other audiences, including:

- Public institutions, large businesses, SMEs and communities in regions being engaged in the development of a Climate Resilience Strategy and/or Investment Plan, who want to understand the process in more detail.
- Financing institutions supporting regional adaptation or looking for investment opportunities.
- Consultants supporting regions in developing elements of their Climate Resilience Investment Plan. Member states considering their own national Adaptation Investment Plan
- Countries outside of Europe (e.g. supporting Investable Nationally Determined Contributions, or Adaptation Communications) under the Paris Agreement)
- Subnational governments beyond Europe seeking to mobilise resources for adaptation.



Figure 5: The model Pathways2Resilience local team.





Explainer: Key terms in adaptation and climate resilience financing

Just like any other topic, climate financing has its own range of terms and language. This guide uses a range of finance-related terms to help describe the process and its individual tasks. The most common ones used throughout this guide to aid understanding are:

Sources – Sources are defined as the entities able to provide the money to fund adaptation activities within a region. Examples of sources include the European Commission, the European Investment Bank, Businesses, Commercial Banks, SMEs, and Universities.

Instruments – Instruments are the mechanisms which enable the provision of finance from one actor to another, or to a dedicated project which delivers adaptation. Examples include Grants, Loans, Taxes, Debt. Note: Instruments vary in complexity – they can be generic (e.g. grants) or tailored (e.g. the Hamburg Green Roof Subsidy), or somewhere in between.

Enabling conditions – a set of measures and conditions which support the overall fundability or bankability of regional adaptation projects. This includes policies, regulations, incentives, data, access to finance, and governance, as well as capacity building measures and domestic financing to implement them (institutional strengthening, improvements to government information).

Bankable project – A project is bankable if it meets the terms required by the source to provide the finance. Bankable projects typically tend to relate financing, rather than funding, but it is also used in this context to relate to funding, in recognition of the fact that there are often conditions attached to grant funding which projects or activities would be required to meet to be successfully awarded funds.

Investable project – a project that is suitable for investors – i.e. that has higher returns and growth potential. These types of projects are more attractive to equity investors and venture capital.

Two further important definitions relate to funding and financing. In international climate negotiations, and in many general conversations the word ‘finance’ in very broad terms to refer to all sources of money (including grants, lending). However, there is some nuance to these terms, and in practice, they mean different things and so this guide has adopted more specific terms:

Funding - Funding refers to money provided without expectation of being repaid (though it may have conditions attached). Examples include European Commission grants, EIB Technical Assistance, grants from philanthropic institutions or intergovernmental transfers. It also refers to who actually pays for the adaptation, including any costs of financing.

Financing - Financing is money provided by a lender which must be repaid over a period of time, typically with interest. Examples include an EIB Framework loan, commercial loans, or Green Bonds. It can also be useful to think of this as who provides the money ‘up-front’.

Further terms and detailed descriptions are set out throughout this guide and in the glossary available on the Pathways2Resilience website.

Aim, objectives and scope of this guidance

The aim of this guidance is to outline the process for developing a Climate Resilience Investment Plan for regions participating in Pathways2Resilience as a way of mobilizing additional funding and finance needed for their Climate Resilience Strategies and Action Plans.

The objectives are to:



Outline the process, phases and tasks required to develop and implement a Climate Resilience Investment Plan as part of the Regional Resilience Journey.



Help regions scope, prepare and deliver their Climate Resilience Investment Plans.



Build the adaptation financing knowledge and capabilities of those leading or participating in developing a region's Climate Resilience Investment Plan.



Provide an entry point for further training and learning on adaptation finance.

The guidance provides a model process for a region to develop a Climate Resilience Investment Plan to meet the investment needs for the region that are identified in the Strategy and Action Plan, in collaboration with investors and the private sector. In doing so, it helps regions move from high-level adaptation visions to a pipeline of bankable actions. You should refer to this guidance throughout the development of your Investment Plan.

Whilst the guide is comprehensive, it is not:



A guide to bankable adaptation projects –

Whilst the guide includes some high-level information, it does not provide detailed information needed to develop individual bankable adaptation projects. Readers are advised to consult documentation from sister Mission projects, particularly [ClimateFIT](#), [Soteria](#), and [PIISA](#), as well as [the Mission Implementation Platform](#), [the Climate Cities Capital Hub](#) and [MIP4A-DAPT](#).



About adaptation planning –

Though successful financing is informed by, and informs, the adaptation cycle, this is not the primary focus of this guide. Certain steps of the investment planning process rely on inputs from the adaptation planning process. Where this is the case, the guide refers to the Regional Resilience Journey guidance.



Focused on mitigation –

The guide has been designed to address the particular challenges and barriers of financing adaptation. Therefore, there is limited discussion on mitigation, except in the case of considering the synergies and trade-offs.



Prescriptive –

It does not advocate a particular course of action for adaptation. Instead, it provides a gold standard replicable process which regions can follow or adapt for their own situations.



Legal advice –

This guide does not constitute legal advice. All parties must seek appropriate legal, financial and commercial advice for projects they are involved in.

The information in this guide is presented in sequential chapters, providing an introductory context, preparatory steps and the detailed Phases and Tasks required to successfully develop a Regional Climate Resilience Investment Plan.

Section 1 (this section) provides the introductory context, including the Regional Resilience Journey, and the role of regions in financing adaptation.

Section 2 outlines the preparatory actions needed to establish and run the Investment Plan process.

Section 3 sets out the Phases and Tasks involved in developing an Investment Plan.

Section 4 provides practical information on compiling the Investment Plan,

The Appendices provide additional tools and contextual information to support you in developing your Climate Resilience Investment Plan.

Throughout the guidance there are included several types of boxes to help you:



Insights – These provide practical hints based on insights from those who have already undertaken some of the activities in this guide. They don't guarantee success but are hallmarks of approaches that will likely create more conditions for success.



Food for thought – these boxes highlight issues that should consider carefully as you develop your Investment Plan to help it meet your region's local context, needs and constraints.



Explainers – These explain the underpinning methods and concepts in Investment Plan tasks. They provide in-depth coverage of the more complex areas of the process which may be less familiar and are designed to build your awareness and understanding.



Case studies – These showcase regions (in the EU and beyond) undertaking Tasks of the Adaptation Investment Cycle. Because the Investment Cycle and Climate Resilience Investment Plans are innovative concepts with limited examples, we have drawn on example activities aligned to the investment planning process to illustrate individual tasks.

The Regional Resilience Journey and the Adaptation Investment Cycle

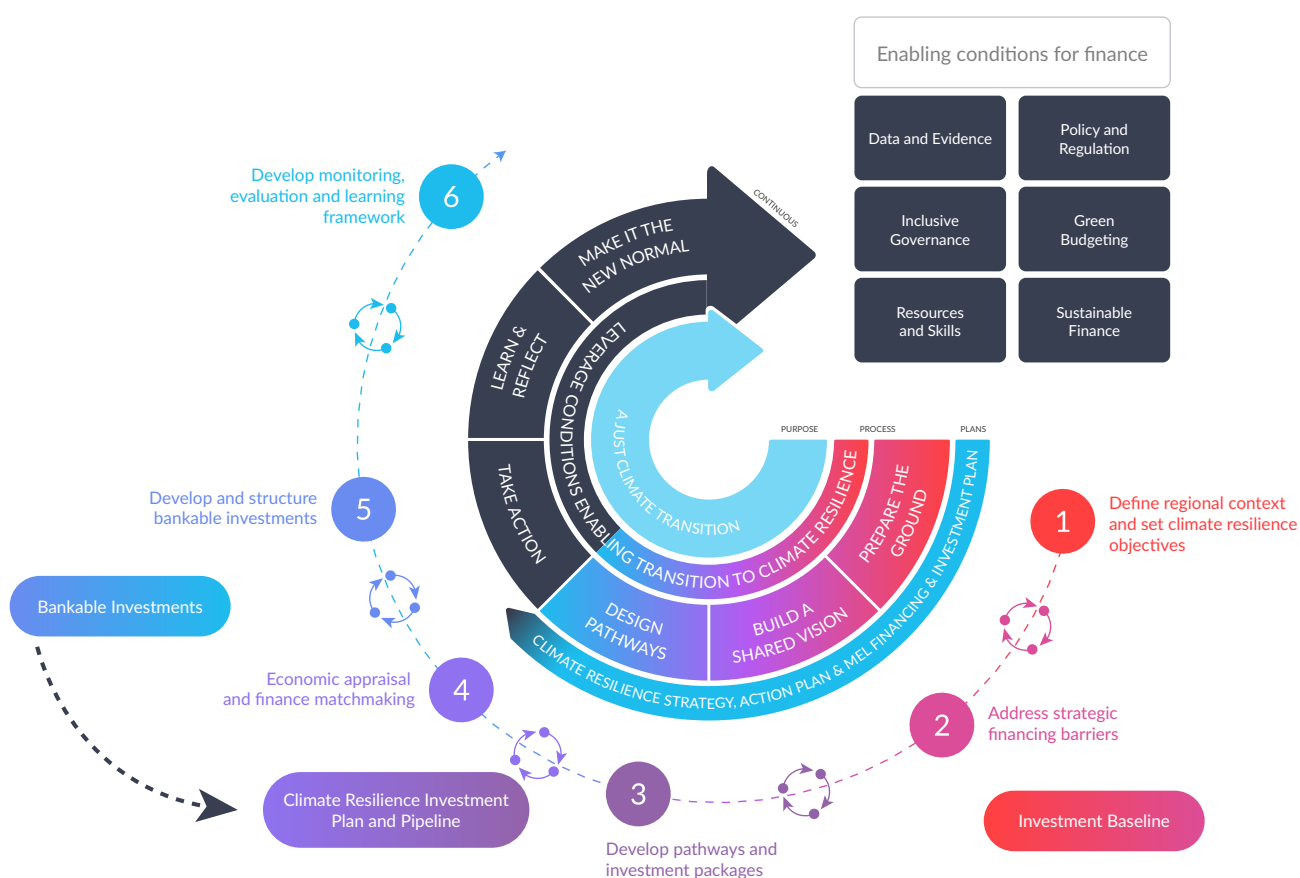
Pathways2Resilience is working with 100 regions through its transformational adaptation planning approach, the Regional Resilience Journey, to develop a Climate Resilience Strategy and Action Plan. The EU Mission recognises finance as a Key Enabling Condition for adaptation in regions. Because the delivery of a Climate Resilience Strategy and Action Plan depends on the availability of finance, Pathways2Resilience has designed a parallel process for this KEC, known as the Adaptation Investment Cycle (AIC). The processes shown in Figure 6 below are designed to be undertaken together.

This approach has a number of benefits:

- Financial and economic constraints (such as cost-benefit ratios, or fiscal space limitations) can be accounted for early in the process.
- As finance needs or constraints emerge, adaptation options can be updated.
- The potential benefits and co-benefits from adaptation options can be used to inform the development of possible financing solutions.

The AIC consists of six phases, each containing a number of Tasks. Phase 1 relates to collecting the information required for the Baseline Report, whilst Phases 2, 3 and 4 relate to developing the Investment Plan. Phases 5 and 6 focus on implementation.

Figure 6: The Adaptation Investment Cycle phases mapped onto the Regional Resilience Journey.



Because the development of a Climate Resilience Strategy and Investment Plan go hand in hand, some of the Tasks are common to both the main RRJ and the AIC, with some tasks from each of the RRJ and AIC serving as inputs or outputs to one another. Throughout the guide we have highlighted where outputs from the RRJ can be used as inputs into the AIC process and where outputs can support the RRJ tasks. An overview of the linkages is included at the start of each Phase.

The Investment Plan is not necessarily a sequential process (although illustrated as such), and it is likely you may need to iterate some Tasks several times. Therefore, the AIC should be considered illustrative, and you may need to adapt the process to fit your local context.

What is a Climate Resilience Investment Plan?

The main output from following the AIC is a Climate Resilience Investment Plan. Climate Resilience Investment Plans are documents which outline how regions intend to finance the pathways outlined in their Climate Resilience Strategy, with a specific focus on ensuring the short-term actions are bankable adaptation investments. They build on global Adaptation Investment Planning approaches and are closely aligned to the Climate Neutrality Investment Plans of the European Commission's Mission to create 100 Climate Neutral and Smart Cities. They have a number of characteristics, summarised below in Figure 7:

Figure 7: Characteristics of Climate Resilience Investment Plans.



Aligned to Climate Resilience Strategy and Action Plans – Climate Resilience Investment Plans align to regional Climate Resilience Strategies, Action Plans and Innovation Agendas, providing the detail on how they will be paid for.

Economic and Financial Planning – They are an economic and financial planning tool, with detailed information for a region's adaptation investment, within public financial management criteria, to enhance its deliverability, credibility, and scalability.

Region-wide, place-based approach – An Investment Plan provides a comprehensive statement of the entire current and future investment needs and opportunities across the region, collating information from public, private and third sectors.

Covers priority risks and opportunities – The Investment Plan sets out financing strategies for the adaptation pathways which comprehensively address climate risks, realise opportunities and support systemic transformation.

Iterative, maturing process – Plans are developed iteratively alongside Climate Resilience Strategies and Action Plans and mature over time.

Catalyst for capital – As the focal point for adaptation investment, Investment Plans are designed to act as a catalyst, triggering new and additional investment from public and private sectors and financial institutions.

Equitably, inclusively governed – Climate Resilience Investment Plans should be developed using equitable and inclusive governance. They should involve stakeholders from the public, private and third sectors, particular those most vulnerable to or affected by climate change and adaptation action.

Long-term focus, short term action – They are rooted in financing a region's long-term adaptation pathways but focus on developing detailed approaches to mobilise the finance needed to deliver the short-term actions.



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Why develop a Climate Resilience Investment Plan?

There are many known barriers to mobilising funding and finance for adaptation. Producing a Climate Resilience Investment Plan will help address these barriers, as well as provide multiple benefits, helping you to:

- **Open new possibilities to fill funding and financing gaps** – the process encourages more collective responsibility for risks and adaptation across communities, businesses and financial institutions, based on who benefits. This encourages the development of innovative financial approaches which address both the **financing** gap (who provides upfront finance), **and** the funding gap (who ultimately pays), noting these aren't the same thing.
- **Help meet budgetary constraints or limitations** - This approach helps to prioritise, sequence and phase investments over time to meet constraints on public finance and align with the rising climate risks.
- **Increase visibility of investment opportunities and needs** – an Investment Plan increases the visibility of investment needs and opportunities to governments, investors, and intermediaries by providing a 'go-to' place.
- **Use public financing strategically** – ensuring that it is targeted to the role of the public sector, notably to pay for solutions which truly benefit everyone (public goods in non-market sectors); to leverage and crowding-in private finance; and support innovation needed for transformational adaptation.
- **Activate and mobilise stakeholders** – involving stakeholders in the design of adaptation pathways and financing approaches helps increase the likelihood of delivering or financing climate action at the end of the process.
- **Better understand the state of play** – including the costs of doing nothing, investment needs, existing flows and the finance gap.

Use cases and audiences for Investment Plans

Their main use of a Climate Resilience Investment Plan is to translate a region's high-level pathways into bankable projects. In doing so, they can be a standalone document or used as an input into wider capital and revenue investment planning.

There are also a series of secondary use cases for an Investment Plan:

- **Convincing stakeholders on the need for further action:** Developing the strategic economic case for adaptation and gathering the economic and financial evidence.
- **Developing priorities for to improve the enabling environment:** The process can identify improvements to the enabling environment (e.g. improvements in regulation, markets or policy), in areas where financing needs to be scaled or improved.
- **Diversifying finance sources and instruments to boost finance:** the AIC can help regions identify potential new sources of finance and the most suitable instruments that may support implementation of a Climate Resilience Strategy and projects.
- **Enhancing financing considerations of an existing adaptation strategy or action plan:** The AIC can be applied to existing Climate Resilience or Adaptation strategies to enhance their implementation.
- **Supporting bankable climate proof or adaptation projects:** The range of information gathered in the development of Climate Resilience investment Plan can also be used as inputs into the development of individual adaptation or climate proofing projects.
- **Informing Transition Plans of companies and financial institutions:** Investment Plans can be used by real economy companies and financial institutions to support and guide the development of their own plans by setting public priorities. They can also identify key investments which can be a required criteria for projects to be classed as adaptation under some green finance taxonomies.
- **Supporting a pitchbook for investors:** The process can help regions develop the information a series of projects that is usually required for seeking inward investment into their region.

For each of these secondary use cases, we have identified the final elements in the template as not required, essential, essential but advanced or optional. Your region may have already completed some of the activities for each use case, and so you should always compare the investment plan contents with their existing regional contexts.

The main audience for a Climate Resilience Investment Plan is those associated with delivering the Climate Resilience Strategy in the region. However, additional audiences include:

- **Public finance institutions**, such as the EIB, European Commission or national development banks who have an active mandate to boost adaptation finance and are looking for regions to work with, for instance through framework loans.
- **Private investors** looking to invest in or finance projects which support adaptation and resilience directly.
- **Strategic finance sectors, i.e.** those organisations in a region which may be able to play a strategic role in helping the region achieve its goals, e.g., insurers who could help close the protection gap, or commercial banks lending to SMEs for adaptation.
- **Local businesses and actors** who need clear signals about the adaptation they are expected to invest in.

Figure 8: Components of an Investment Plan required for secondary use cases.

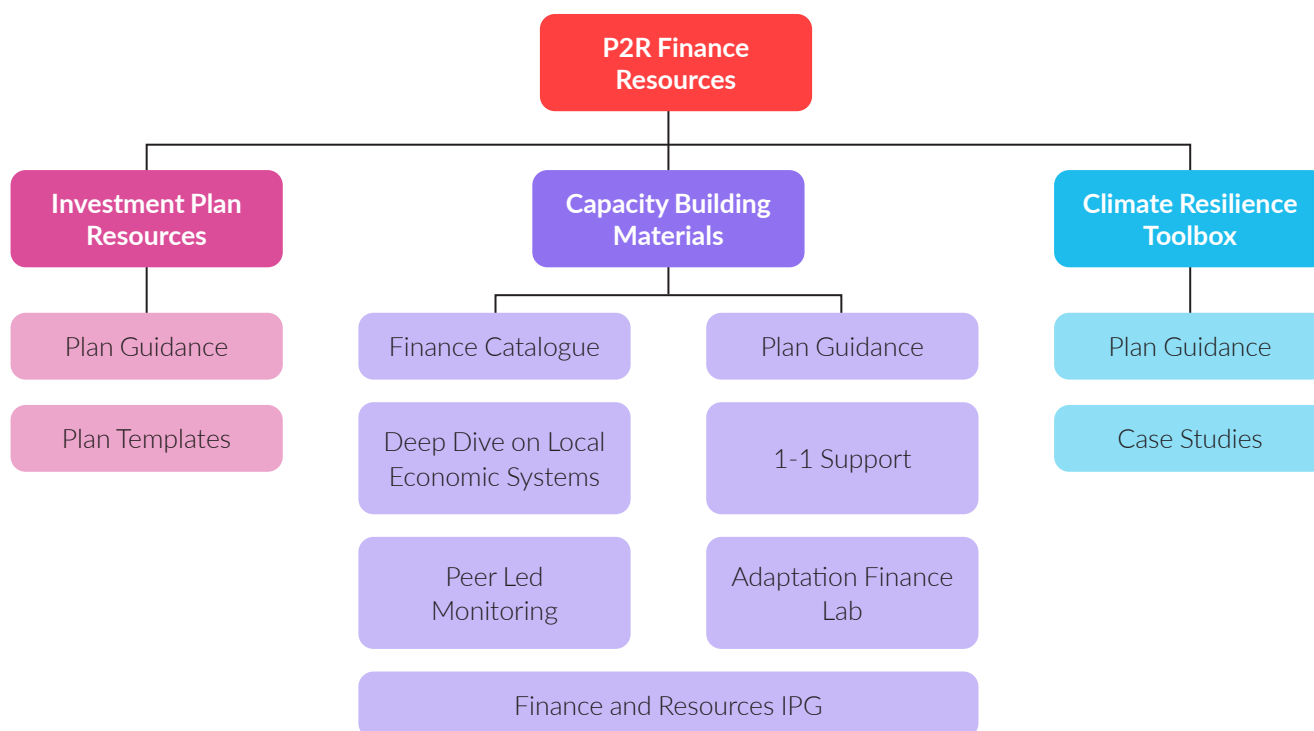
Section	Secondary use cases						
	Convincing stakeholders on the need for further action	Developing priorities to improve the enabling environment	Diversifying finance sources and instruments for adaptation	Enhancing financing of existing adaptation strategies	Supporting Bankable climate-proof or adaptation projects	Supporting a pitchbook for investors	Informing Transition plans
1. Introduction							
1.1 Priorities	○	○	○	○	●	●	●
1.2 Existing planned development expenditure	●	●	●	●	●	●	○
2 Financing context							
2.1 Budgetary process	○	○	●	●	●	●	●
2.2 Revenue and Capital Investment Process	○	○	●	●	●	●	●
2.3 Budget Envelope	○	●	●	●	●	●	●
2.4 Costs of climate change and near-term investment	●	●	○	●	●	●	●
3. Climate Resilience objectives							
3.1 Strategy objectives	○	●	●	●	●	○	●
3.2 Economic rationale	●	●	●	●	●	●	●
3.3 Just Resilience considerations	●	●	●	●	●	●	●
4. Strategic Sources, Instruments and barriers evaluation							
4.1 Existing sources and instruments							
4.1.1 Existing sources	●	●	●	●	●	○	●
4.1.2 Existing instruments	●	●	●	●	●	○	●

Section	Secondary use cases						
	Convincing stakeholders on the need for further action	Developing priorities to improve the enabling environment	Diversifying finance sources and instruments for adaptation	Enhancing financing of existing adaptation strategies	Supporting Bankable climate-proof or adaptation projects	Supporting a pitchbook for investors	Informing Transition plans
4.2 Additional sources and instruments							
4.2.1 Additional sources	○	●	●	●	●	○	●
4.2.2 Additional instruments	○	●	●	●	●	○	●
4.3 Mitigation financing synergies	○	●	●	●	●	○	●
4.4 Enablers to financing	●	●	●	●	●	○	●
5. Action Plan and Project Pipeline							
5.1 Action Plan	○	●	●+	●+	●+	●+	●+
5.2 Project pipeline	○	●	●+	●+	●+	●+	●+
6. Enabling Conditions for the Action Plan							
6.1 Enabling conditions	○	●	●	●	●	●	●
6.2 Implementation risks and mitigation arrangements	○	●	○	●	●	●	●
7. Governance							
7.1 Governance arrangements	○	●	○	●	●	●	●
8. Monitoring, Evaluation, Learning and Reflection arrangements							
8.1 Monitoring and scrutiny arrangements	●	●	○	●	●	●	●
8.2 Economic and Financial Indicators	●	○	○	●	●	●	●
8.3 Learning and reflection approach	●	●	○	●	●	○	○

Further guidance and support

While this guidance provides an overview of developing investment plans, you may need more information to complete particular Tasks. Each section includes further resources. There is a wider range of resources available within Pathways2Resilience. These are shown below:

Figure 9: Pathways2Resilience finance resources.



The full range of support includes:

- Training modules on developing Investment Plans, as part of the wider Pathways2Resilience Training and Capacity Building Programme.
- A catalogue of sources and instruments and best practices in adaptation financing
- Detailed 1-1 support to 9 of our regions
- A peer-led mentoring programme
- A Climate Toolbox containing additional finance-focused tools and guidance and case studies, for regions looking to deepen their learning.

The project is also working with regions to advance the state of the art, which includes:

- The Finance and Resources Innovation Practice Group to incubate new ideas and projects which could help regions mobilise additional finance in the future.
- A deep-dive exploration of finance as a key enabling condition.
- An adaptation finance lab to develop new solutions to financing adaptation and resilience projects.

A number of the Phases and Tasks in preparing the Climate Resilience Investment Plan require some degree of knowledge of economics, financing and/or adaptation, or may benefit from further technical support. In addition to the use of the Pathways2Resilience grant to support this process, there are a number of additional options for this including the Mission Platform, EIB Technical Assistance or the Covenant of Mayors, as well as Pathways2Resilience's Adaptation Finance Innovation Lab. You may also wish to support this process with further expertise such as through consultants.

02

PREPARING TO DELIVER YOUR INVESTMENT PLAN

Püskösdfürdő Park, Budapest. © Budapest Városháza, Képszerűség - Pelikán János

Before you start, it is important to have the right conditions in place to be able to successfully develop your Climate Resilience Investment Plan. This includes:

- **Defining the scope, objectives and outcomes.**
- **Defining outputs**
- **Identify and allocate resources and skills.**
- **Deciding how to govern plan development and engage stakeholders**
- **Developing a project plan.**
- **Seeking political sign off and approval to proceed**

These steps relate closely to **Phase 1** of the main Regional Resilience Journey but may differ because of the focus on finance. Therefore, they may be carried out in parallel or as a combined process.

Define the scope, objectives and outcomes of the Investment Plan

When producing your first Investment Plan, you should start by deciding the outcomes, objectives and scope. Outcomes and objectives are important as they will guide the focus and effort. At the start of the process, objectives may just focus on the totality of available finance (e.g., “ensure appropriate finance for the Climate Resilience Strategy”), whilst more mature organisations or future iterations may be more specific (e.g., “boost insurance coverage in agriculture”, or “strengthen enabling conditions for SME financing of adaptation”). Such objectives may also be informed by the types of adaptation options you are seeking to finance, and stakeholder preferences.

You should refine and update these objectives throughout the process, but an early set are important to help define resource requirements, identify the appropriate stakeholders and secure their engagement, and to guard against scope creep.

Finally, you should consider the scope of work to develop your Investment Plan. Whilst Pathways2Resilience has set a ‘gold standard’ for what should be included, the scope of work and available resources, and therefore the content regions will need or want to include in their Investment Plan will vary. You may also wish to consider whether you want to use the Investment Plan for any of the secondary use cases shown above.



Food for thought: The complete set of Tasks in the Adaptation Investment Cycle, and the associated templates represent the ‘gold standard’ in Adaptation Investment Planning – the best practice of what regions should try and do, based on research and engagement with financing institutions. However, not all regions may want, need or be able to complete them all. And because Investment Plans are iterative and maturing, a key decision you should consider is which elements of the Investment Plan you want to focus on in the first iteration, and which elements can be left until later. For example, in early iterations of the Climate Resilience Investment Plan, the focus may solely be on accessing public capital, which may mean that you do not need to do some activities related to encouraging private sector finance.



Explainer: Typologies of adaptation investments

A foundational concept of financing approaches, as well as to support tracking of expenditure, is the extent to which adaptation is part of a project's overall purpose. The degree of adaptation can range from projects can vary, the multilateral development banks (including the EIB), have developed a common typology (IDFC, 2023).

Climate proofing (Type 1) – These are investments where adaptation is not the primary objective but needs to be considered to be effective for the long term. Examples include transport infrastructure or the built environment.

Mixed (Type 2) – In these projects, adaptation is one of a number of objectives – such as restoration of ecosystems.

Pure adaptation (Type 3) – These are projects where the primary purpose is to deliver adaptation. Examples include flood defences or early warning systems.

This typology is illustrated below:

Table 1: Typology of the types of adaptation activity. Source: Authors, updated from IDFC, 2023.

	Type 1 - "Climate Proofing"	Type 2 - "Mixed adaptation"	Type 3 - "Pure Adaptation"
Description	Activities that integrate measures to manage physical climate risks and ensure that the project's intended objectives are realised despite these risks	Activities that directly reduce physical climate risk and build the adaptive capacity of the system within which the activity takes place	Activities that contribute to reducing the underlying causes of vulnerability to climate change at the systemic level and/or removing knowledge, capacity, technological and other barriers to adaptation
Objective	Activities that integrate measures to manage physical climate risks and ensure that the project's intended objectives are realised despite these risks.	Activities that directly reduce physical climate risk and build the adaptive capacity of the system within which the activity takes place	Activities that contribute to reducing the underlying causes of vulnerability to climate change at the systemic level and/or removing knowledge, capacity, technological and other barriers to adaptation
Adaptation finance	Less than 100% of MDB finance on the activity	Less than 100% of MDB finance on the activity	100% of MDB finance on the activity

When developing financing approaches for strategies and action plans, understanding which type of action you are seeking to fund is important. Dedicated adaptation projects require more effort to finance compared to climate proofing.

This is because climate proofing (Type 1) projects typically have existing funding or financing models, meaning adaptation typically represents a small, but additional cost. For example, adaptation components can be included in existing highways budgets to cover the additional costs in a new road construction. In contrast, dedicated adaptation projects (for example early warning system extensions) rarely have existing funds to support their development and/or implementation and typically need completely new funds

Identifying which areas of your Climate Resilience Strategy may be able to rely on climate proofing approaches, and which will require pure adaptation at an early stage will help you identify potential sources and instruments for funding or financing, and can indicate where more time and effort will be needed within the Adaptation Investment Cycle. Within Pathways2Resilience, this typology is used throughout the process, including the identification of existing spend on adaptation, as well as developing the projects for the Investment Plan.

Further information: Uittenbroek et al. (2014) [Political commitment in organising municipal responses to climate adaptation: the dedicated approach versus the mainstreaming approach.](#)

IDFC (2023) [Common Principles for Climate Change Adaptation Finance Tracking](#)



Define outputs

As well as the outcomes, objectives and scope of work, it is important to consider the outputs. For example, should you produce a Climate Resilience Investment Plan document, or would your objectives be better met by feeding the results into the main budget process of the regional government or those of stakeholders, and the national government? You may also wish to embed your Investment Plan into your Climate Resilience Strategy and Action Plan.

Pathways2Resilience **strongly encourages** regions to align their work to the Pathways2Resilience Baseline Assessment and Climate Resilience Investment Plan templates. Doing so makes sure that all the essential elements are covered. It also provides a degree of standardisation across Europe, making it easier for potential investors or funders to assess and engage with your region. Where you choose to develop bespoke outputs, it will be important to demonstrate how you have followed the Adaptation Investment Cycle, since it has been designed to address the common barriers to financing adaptation.

Identify and allocate resources and skills

You should identify the human and financial resources you need to run the process and produce the Investment Plan. The precise mix will vary from region to region, but Pathways2Resilience recommends a mix of strategic and technical, and a mix of adaptation and finance expertise. It is unlikely that one individual will be able to undertake it all.

As a rough guide, the consortium estimates that 0.75 FTE of effort is needed throughout the 18 months to develop an Investment Plan alongside the Strategy and Action Plan. The rough spread of effort is shown below.

Phase	Number of months	Total Effort (PM) (0.75 FTE)
1	3	2.25
2	3	2.25
3	7	5.25
4	7	5.25
5	6	4.5
6	3	2.25
Total		21.75

There is a direct relationship between the collective resources and skills, and the depth and maturity of the Investment Plan that that region can produce. You may want to identify training and skills development needs, or where you may need to bring in additional expertise or support. Ideally regions should see the production of an Investment Plan as a capacity-building process, which strengthens their capabilities for future iterations. You may wish to draw on the assessment being undertaken in the RRJ in Task 1.3.2 – Assess capabilities.

Decide how to govern plan development and engage stakeholders

To support and champion the development of a regional Climate Resilience Investment Plan, you should ensure you have an appropriate governance mechanism, representing teams from across the regional government, as well as from organisations across the wider region. This may be your overall local team or may be different.

Effective governance is an art as well as a science. You will need to facilitate involvement from interested parties and balance their conflicting tensions and views. The governance should also provide robust scrutiny of the emerging Investment Plan which improves the quality of the final output, whilst also ensuring it is produced on time and within available resources. Some key considerations are:

- **Seniority:** Ensure the governance structures enable the right mix of seniority. This will help champion the work and create connections to and buy in from others.
- **Diversity of backgrounds:** Securing the appropriate technical and financial expertise will also be important to guarantee that the plans are credible.
- **Multi-level governance:** The ability to finance and implement a full range of adaptation options depends on involving local municipalities, as well as Member State governments and or EU institutions, who have the appropriate powers to implement projects or facilitate policy or regulatory change.
- **Just resilience:** You should consider how the governance can support procedural and distributional justice and recognition. For example, you may choose to include groups or citizens most affected by climate risks, the implementation of adaptation actions, and who may be paying for the adaptation.
- **Risk and adaptation ownership and beneficiaries:** Consider adopting a governance structure which balances the views of those responsible for managing the risks and developing adaptation, and of those who will be impacted by and benefit from it.



Insight: Academic literature and evidence from other climate projects suggest that early private sector involvement is a strong pre-requisite for their financing. Since many of the risks can only be addressed by the private sector, and the total-ity of financing will be met with private sector participation, ensuring appropriate representation is crucial.

- **Political involvement:** Political involvement and direction-setting can significantly enhance the credibility and ownership of an Investment Plan, particularly if the governance engages parties from across the political spectrum to generate buy in.
- **Sign off process:** How the final Investment Plan will be formally approved – for example which committees and structures will need to approve it.
- **Links to wider Climate Resilience Strategy development:** Consider how the development of your Investment Plan be linked to the wider Strategy and Action Plan development. This could involve shared governance arrangements.

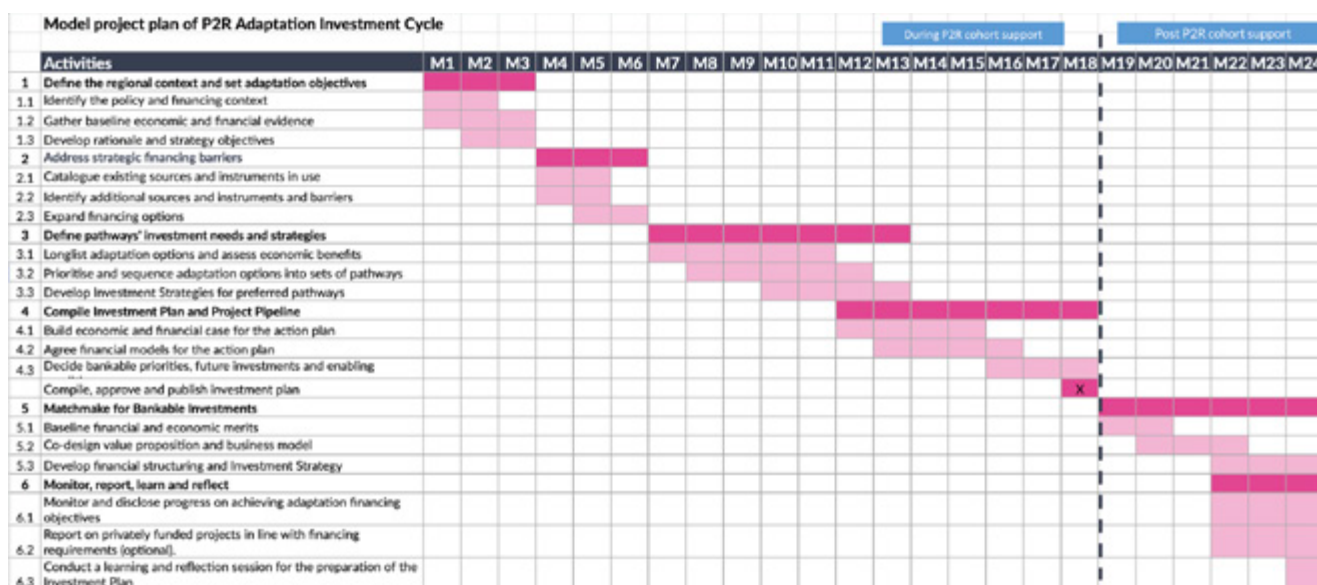
The precise governance structure will vary from region to region but may include a steering group and working groups to guide the production of the plan, as well as the wider fora and mechanisms for engagement, such as citizens panels, assemblies or formal consultation.

Whilst it can take longer and more resources at the outset to establish inclusive governance approaches, involving potential financiers, the private sector and communities helps overcome barriers to finance. It builds collective understanding of adaptation and financing challenges and establishes consensus on the right way to finance adaptation pathways and actions, including the roles of the public and private sector.

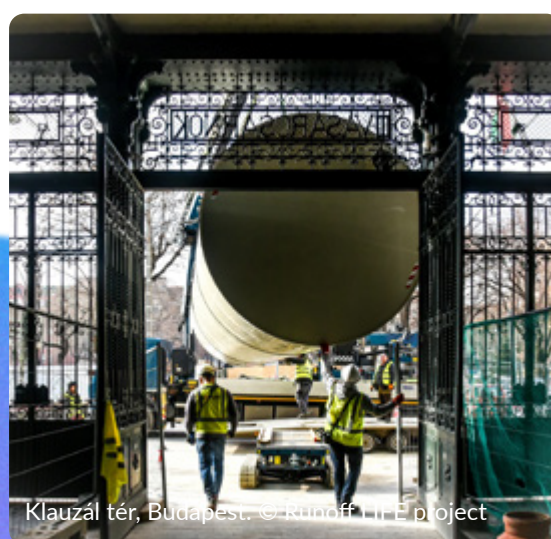
Develop a project plan

Once the outcomes, objectives, resources and governance of the plan are agreed, you should develop and agree a project plan. This should include the relevant milestones and include the sign off process needed for approval. The Pathways2Resilience team suggest that the timetable aligns with the development of a Climate Resilience Strategy, which is roughly around 18 months, noting further work on bankable projects and MEL may be needed after this. The figure below shows a sample timetable which is downloadable from the Pathways2Resilience Climate Toolbox:

Figure 10: Model project plan for developing a Climate Resilience Investment Plan.



This timetable should align to the wider project plan for developing the Climate Resilience Strategy and Action Plan, as outlined in the RRJ guidance.



Seek political sign-off and approval to proceed

Once you have developed all the relevant elements of the approach, you should seek political sign-off to proceed with developing the Investment Plan. This approval may be informal or may require formal endorsement by a lead politician or Mayor, or by the relevant committee(s). As with overall governance, the sign-off will benefit from oversight and endorsement by those politicians with responsibility both for adaptation and for finance.



Before moving onto Section 3 and embarking on developing your Climate Resilience Investment Plan, ensure that you have:



Set initial outcomes, objectives and scope



Identified and allocated resources and needs



Agreed a governance and engagement approach



Developed a project plan



Secured political approval



Supporting resources:

- **Model terms of reference** – An example of a Terms of Reference for a regional board is included in the Pathways2Resilience Climate Toolbox.
- **Procurement specification** – A sample procurement specification for an Investment Plan is included in the Pathways2Resilience Climate Toolbox
- **High-level project plan** - To help you with estimating the amount of time required to design and deliver a Climate Resilience Investment Plan, we have put together a model project plan template, based on a typical amount of resource.



Case Study: Adaptation Scotland Guide to Adaptation Climate Finance

“There is a significant shortfall between the finance available for adaptation and the amount required - ‘the adaptation finance gap’. Our Guide introduces adaptation finance, identifies current barriers, and aims to support the development of the knowledge and skills needed to finance adaptation projects in Scotland successfully.” – Matt Grady, Head of Climate Adaptation and Engagement Unit, Scottish Government

Introduction

In Scotland, there is a significant shortfall between the finance available for adaptation and the amount that is required, referred to as ‘the adaptation finance gap’. By developing knowledge and capability on adaptation finance, we can improve access to finance and increase adaptation action.

Core information

The Adaptation Scotland Programme, a capacity-building programme funded by the Scottish Government, set up a Climate Finance Working Group made up of private and public sector organisations. The group shared their challenges in financing adaptation and heard from external speakers working on the topic. The group then worked with consultants to produce the Guide to Adaptation Climate Finance. Informed by the needs of Scottish actors, the guide introduces adaptation finance, identifies current barriers, and aims to support the development of the knowledge and skills needed to successfully finance adaptation projects in Scotland. The work also helped the Scottish Government develop thinking for the third Scottish National Adaptation Plan and the expansion of regional adaptation partnerships across the country. Adaptation Scotland also developed guidance on building business cases for adaptation finance, including case studies in Newcastleton, Uist, and Inch of Ferryton, and Edinburgh.

Key takeaways

Regions should consider proactively boosting their skills and resources to effectively develop their investment plans: Collaborating with the government to establish working groups, like the Climate Finance Working Group in Scotland, can be instrumental in building the necessary competencies for financing adaptation projects.

Addressing skills gaps to tackle finance needs: The case study underscores the prevalent skills gaps that regions and organisations face in the realm of adaptation finance. Implementing targeted solutions to bridge these gaps, such as tailored training programs or knowledge-sharing initiatives, is crucial for meeting the financial requirements of adaptation efforts.

Leveraging collaborative efforts for long-term planning: The collaborative approach taken by the Scottish Government, as seen in the development of the Adaptation Finance Guide, offers valuable insights for regions. By working together with public and private stakeholders, regions can develop more comprehensive and forward-thinking investment strategies, ensuring they are well-prepared to meet the demands of climate adaptation.

These reflections aim to guide regions in producing robust investment plans, emphasising the importance of collaboration, skill enhancement, and the development of tailored financial models.

Sources: Adaptation Scotland (2022) [A Guide to Adaptation Climate Finance](#)



03

DEVELOPING YOUR INVESTMENT PLAN

Everaldo Coelho | Unsplash

This section outlines the six phases and detailed tasks involved in developing your Climate Resilience Investment Plan.

Each phase includes an introduction, which summarises the process and outputs as well as the relationship to the RRJ more generally, before describing each task. Each task includes a box at the beginning which highlights the related RRJ tasks, the relevant sections of the Climate Resilience Investment Plan template, the relative effort levels required to complete it and the overall importance of the task to the RRJ process itself. The figure below shows an example:

Figure 11: An example task from the Climate Resilience Investment Plan process.

RRJ Task(s)	Climate Resilience Investment Plan Template Section(s)	Effort	Importance
1.1 Establish a baseline, understand the system	1.1.1, 1.1.2, 1.1.3	Low	Essential

For effort and importance, each task is rated using three categories:

Table 2: Effort and importance categories for Investment Plan tasks.

Category	Description
Effort	
Low	Involves basic data collection, preliminary analysis, and initial system mapping. They require minimal resources, time, and stakeholder engagement.
Medium	Tasks involve more detailed analysis, stakeholder consultation, and the development of new data or insights. They require moderate resources, time, and coordination.
High	Tasks require extensive analysis, significant stakeholder engagement, and the development of comprehensive frameworks or strategies. They are resource-intensive, time-consuming, and often involve complex coordination across sectors.
Importance	
Essential but advanced	Essential to the development of the Strategy, Action Plan and Investment Plan. Failure to complete these tasks would jeopardize the overall success of the Investment plan. but is advanced and may require additional expertise or external support.
Essential	Essential to the development of the Strategy, Action Plan and Investment Plan. Failure to complete these tasks would jeopardize the overall success of the Investment plan.
Optional	Tasks that are beneficial but not critical. They may enhance the adaptation plan but are not necessary for its core objectives. You may choose to use this depending on your own region's situation and context.

Each Task contains detailed written guidance structured using six headings:

1. **What is this task about?** – A summary of the task and what is involved
2. **What are the key inputs for the task?** – What the key inputs for the tasks are, from both previous tasks and the wider Regional Resilience Journey.
3. **What are the expected outputs?** – The outputs from the Task.
4. **Why is it important?** – the significance of the task for the wider Investment Plan process and adaptation financing more broadly.
5. **What should you focus on in the early iterations?** – This helps you work out which elements of the task are most important in the first iterations of an Investment Plan.
6. **How you can complete it** – The practical steps you can take to undertake the task, and examples of the types of outputs from the process.

Each Task also includes relevant guidance materials or examples from other regions to help inspire you or help you learn and build your knowledge.

At the end of each task, the guide includes a short checklist of actions to check your progress as you move through the Adaptation investment Cycle, as well as core resources that can support you in building understanding or completing the task. An example of a checklist is shown below:

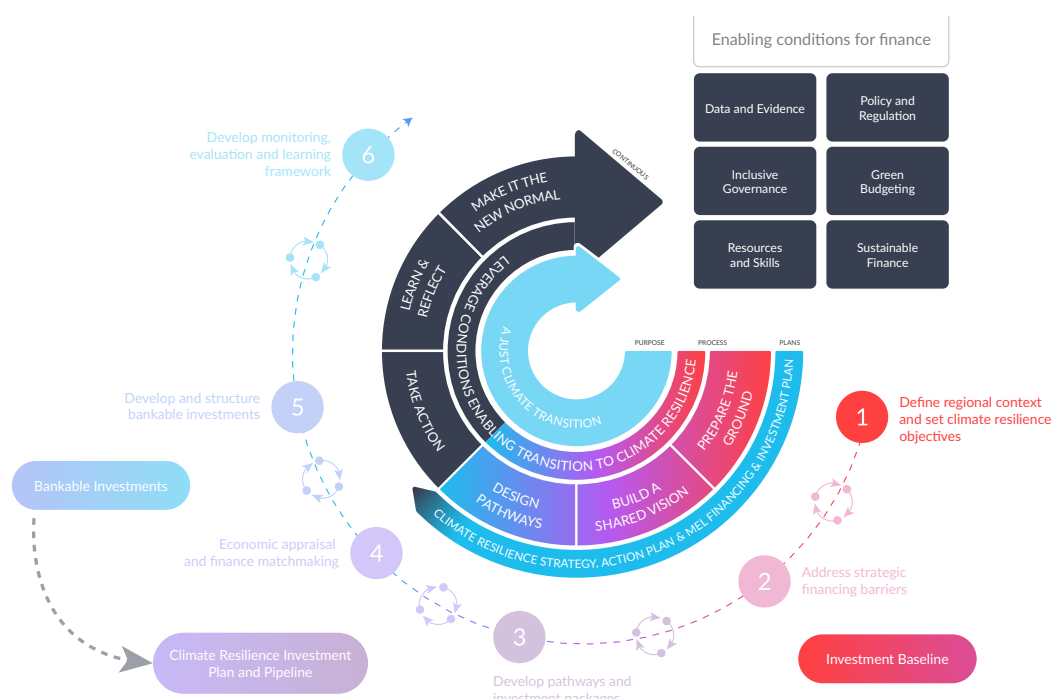


Before moving onto Task X.X, have you:

- ☐ Identified...
- ☐ Reviewed...
- ☐ Assessed....

Phase 1: Define the regional context and set climate resilience objectives

The aim of this phase is to understand the context for adaptation. This involves the policy and financial context and costs of inaction. These should be used to identify a budget envelope and develop a rationale and spending objectives to underpin the Investment Plan. It should provide you with all the financial information needed to support you to complete the Baseline report.



Links to the Regional Resilience Journey:

AIC tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
Task 1.1: Identify the policy and financing context	The information generated in RRJ Task 1.1 (Establish a baseline) on relevant frameworks can be used to identify the policy context	Summary of the existing policy objectives, headline budget (AIC Task 1.1 can be used in RRJ Task 1.1)
Task 1.2: Gather baseline economic and financial evidence	Summary of evidence on climate impacts from previous events and the repository from RRJ Task 1.1 can be used to help with costing. You may also wish to draw on the assessment of risks and vulnerabilities in RRJ Task 1.3 and seek to quantify the economic or financial aspects.	The information on the costs of doing nothing can be used as part of the risk assessment in Task 1.3 to help provide an economic component to risk assessment.
Task 1.3: Develop rationale and strategy objectives	The framing of the (set of) problem(s) produced in RRJ Task 1.1 as well as the system maps (1.2) assessment of risks (1.3) and the shared vision and theory of change (RRJ Task 2.3) can be used to inform the setting of strategy objectives.	The objectives can be used to inform the longlisting of options set out in RRJ Task 3.1.

Task 1.1 Identify the policy and financing context

RRJ tasks(s)	Baseline template section(s)	Climate Resilience Investment Plan Template Section(s)	Effort	Importance
1.1 Establish a baseline, understand the system	1.4 Climate Resilience Objectives	1.1	Low	Essential

What is this task about?

This Task is about understanding the context in which your Investment Plan is taking place. It involves three activities:

1. Understanding wider regional and organisational priorities and plans (resilience objectives) and their fit with the Climate Resilience Strategy and Investment Plan.
2. Identifying the financial processes and conditions for approving financial expenditure and investments, as well as existing private sector financing arrangements.
3. Identifying the preliminary regional budget for the Strategy and Action Plan.

What are the key inputs for the task?

- The organisation's mission statement or strategic plan.
- Wider economic, social or environmental plans and strategies for the region (including those identified in RRJ Task 1.1 - establish a baseline).
- Any documentation setting out the region's budgetary and investment approval processes and requirements.

What are the expected outputs?

The output is a short, written summary of the regional policy and financing context, budgetary and investment requirements and preliminary regional budget for the Strategy. It should provide an overview of the organisational and regional policy priorities and development plans (climate resilience objectives), and future expenditure planned to meet them, as well as how they may be affected by climate change and how adaptation will support them. It should also set out the budget processes (Public Financial Management (or PFM) cycle) and investment decision making approach (PIM) for the region including any key criteria or information needed. It should also set out any pre-existing relationships (such as Public Private Partnerships) with the private sector for the delivery of services. Finally, the summary should include a preliminary regional budget for the Strategy and Action Plan.

**Task
1.1**

Identify the policy and financing context

Why is it important?

Understanding regional priorities helps inform the rationale and objectives for the Strategy which you will set out in Task 1.3. Any Climate Resilience Strategy should have a good strategic fit with the wider regional economic, social and environmental priorities. You can use these wider priorities to reframe adaptation as an investment rather than a cost, i.e. that it helps the region achieve its wider economic and social goals, such as job creation or improved productivity. In addition, understanding planned decisions and expenditure helps identify where it may be possible to mobilise additional investment in 'climate proofing' (or Type 1), adaptation through additional budgets, while understand existing private sector relationships (such as public-private partnerships or major suppliers) will help you identify pre-existing stakeholders who will be important to involve.

Linked to this, identifying a preliminary regional budget early on helps you understand what resources you will likely have available for the pathways, and actions of the Climate Resilience Strategy. This will inform later Tasks, such as when deciding how to allocate such resources across adaptation pathways, how to use public finance strategically to crowd in additional actors, and how actions should be sequenced over time.

Finally, understanding the region's decision making processes for budget and capital investments will ensure the Investment Plan and the pipeline of bankable projects are informed by, and comply with these requirements. This increases the likelihood that the Investment Plan and projects will be approved at the end of the process.

What should you focus on the first time round?

In the early stages, ensure you have a solid understanding of the region's economic, social and environmental policies and priorities. It is important to focus on those which are most relevant to the development of the Climate Resilience Strategy. Typically, this includes a region's economic development strategy and wider social and environmental strategies, as well as existing strategies and programmes to adapt to climate change. In the early stages, the focus should be on understanding the objectives and the implications and less on documenting them.

In addition, understanding processes and requirements the region's budget and Investment decisions will help identify if the timetable for the development of the Investment Plan is aligned with key decision-making points on financial spend or whether changes are needed.



Food for thought: Determining priorities can be challenging due to a wide range of different organisations and governance mechanisms. This can be harder where there is policy-centric governance (where there are multiple different competing places with different priorities), or multi-level governance (responsibilities at local, regional and/or national level). For example, in the region of Arnhem and Nijmegen, the two cities are significant drivers of wider economic development but sometimes have differing views on future pathways. In such cases, it is worth documenting such differences so they can be accommodated for in the development of your Strategy and Investment Plan.

**Task
1.1**
Identify the policy and financing context
How can you complete it?

Policy and financing context - Start by identifying and summarising the organisational priorities, objectives and goals of the regional government, focusing on its purpose, vision or mission statements, strategic goals, business aims, services and key stakeholders. You should also detail the organisational structure, and governance arrangements. The review should also include existing adaptation and disaster risk reduction plans. You should also review the set of economic, social and environmental plans for the region and country to understand the broader objectives and goals. These could include those developed by the region, but also other agencies.

This can be completed through a desktop review, to draw out key targets and any assessments of how climate change may affect the ability to meet them. You may also wish to draw on the policy objectives identified in Task 1.1 of the RRJ, identify evidence. Once you have identified them you should explain how they could be affected by climate change and how development of the Climate Resilience Strategy and Action Plan will support their delivery. You should also consider the relationship between the Climate Resilience Strategy and other organisational programmes and projects, such as flood risk management plans. Given the Climate Resilience Strategy will contribute to shared outcomes across multiple organisations, you should also explain any links and interdependencies with their programmes and projects.

Financing processes – work with the finance team to identify the regional government processes for developing and approving capital and budgetary spending. This should include the relevant information and timetable for submissions of proposals. You should also identify and key metrics or criteria. Examples of such metrics could include the Cost-Benefit Ratios required for new capital investments, the Net Present Value, and Internal Rate of Return

Preliminary budget - To identify a preliminary budget within the fiscal space of the region, you should meet with your finance department and politicians to determine the available financial resources and borrowing potential of the regional government to support adaptation. At this stage you will have limited information on actual investment needs, so this should be purely indicative, provide an initial framework to consider overall resource mobilisation within. The financing requirements, as well as the available fiscal space and financing scenarios will change throughout development of the Strategy and Investment Plan, as you build understanding but also because of the wider budgetary process.



Insight: When funding or financing projects, public and private sources of funding or finance will have different requirements or metrics. However, in the early stages, the AIC focuses on the region's criteria, since all investments included in the pipeline of projects are likely to need to meet these.

**Task
1.1**

Identify the policy and financing context



Before moving onto Task 1.2, have you:

- ☐ Reviewed the region's economic and social goals, how they will be affected by climate change and how adaptation can help achieve them to help provide a backdrop for the adaptation investment.
- ☐ Documented the key budgetary and capital investment requirements.
- ☐ Identified existing financing relationships with the private sector.
- ☐ Identified a high-level preliminary budget for the Strategy and Action Plan.



Supporting resources:

- World Bank (2019) [PEFA, Public Financial Management, and Good Governance. Chapter 1: Introduction: What Is PFM and Why Is It Important?](#)
- ODI (2016) [Public investment management: a public financial management introductory guide](#)

**Task
1.1**
Identify the policy and financing context

Explainer: What is fiscal space?

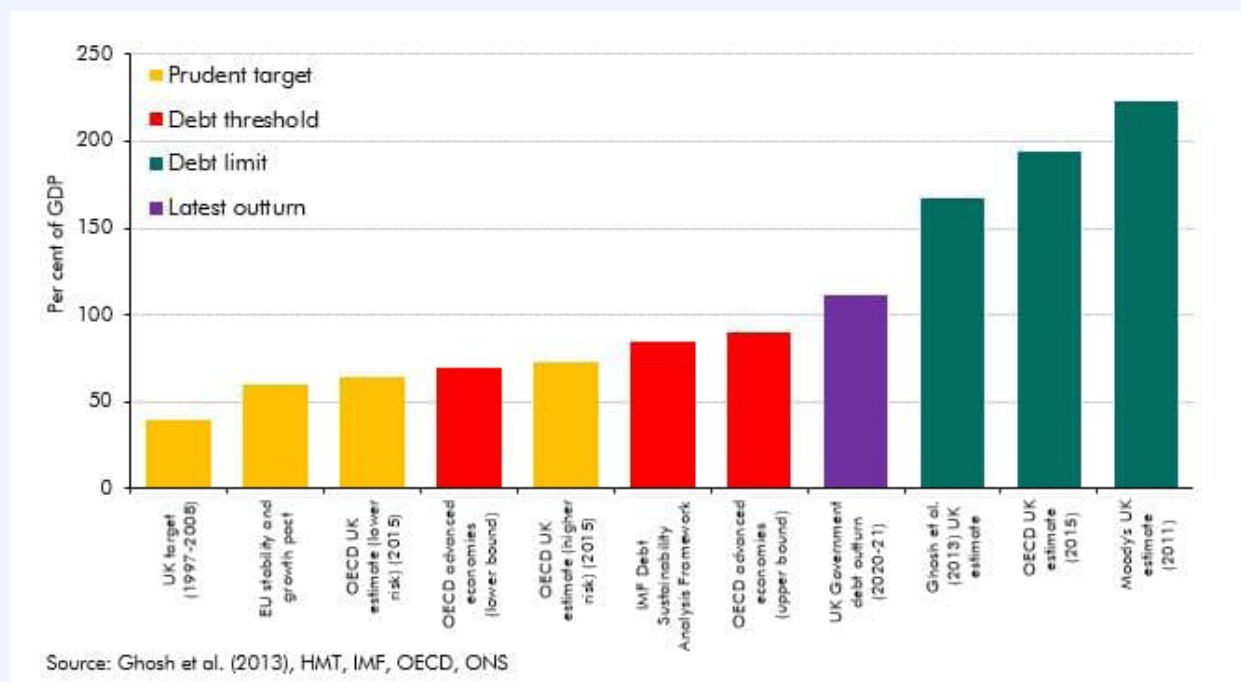
Fiscal space is defined as “room in a government’s budget that allows it to provide resources for a desired purpose without jeopardising the sustainability of its financial position or the stability of the economy” (Heller, 2005). When developing a Climate Resilience Investment Plan, it is important that a region has the appropriate fiscal space to pay for its share of adaptation investment.

For regions, fiscal space depends heavily upon legal competence and subnational funding arrangements. It also depends on national fiscal space, which is in turn contingent on public debt, as well as the EU approach to assessing the sustainability of public debt.

Depending on their local context, a regional government can create fiscal space in a range of ways, including by raising taxes, securing outside grants, reprioritising expenditure, boosting efficiency, borrowing resources (from citizens or foreign lenders), or borrowing from the banking system (and thereby expanding the money supply). But it must do this without compromising macroeconomic stability and fiscal sustainability, making sure that it has the capacity in the short term and the longer term to finance its desired expenditure programmes, as well as to service its debt.

To generate estimates of fiscal space, governments often use multiple lines of evidence to provide a range, as illustrated in the Figure below:

Figure 12: Illustrative Fiscal Space for the UK Government.



Source: Office for Budget Responsibility, 2021

Whilst fiscal space is an important component of securing budgetary approval for a region’s Climate Resilience Investment Plan, in reality, a Plan is likely to also include a wider set of resources for adaptation investment – in part mobilised by this direct regional spend.

**Task
1.1**

Identify the policy and financing context



Explainer: Public Investment Management and Public Financial Management

Public spending normally consists of two types – **capital and revenue**. Capital expenditure refers to one-off large expenditures on fixed assets, whilst revenue expenditures cover day-to-day, recurring expenditure (e.g. salaries or maintenance costs of infrastructure). In both cases, there are normally standard processes that govern how decisions are made about whether such expenditure is good value for money, as well as about how the region will maintain and operate completed assets. Like any other expenditure, it is important adaptation projects meet these criteria.

Public Investment Management (PIM) is the umbrella term that refers to processes and systems that governments use to manage capital expenditure, i.e., how they select, construct, and maintain public assets. It can be thought of as a system comprising groups of processes linked around an investment management cycle with links to the annual budget cycle at certain key points. Most governments have formal processes for appraising projects for selection. The exact criteria will vary, but in practical terms ensuring projects meet PIM criteria is likely to involve evaluating why the project is needed, appraising the costs and benefits of the project to society, appraising how the project will be implemented and its risks, and considering how it would be financed and if necessary, repaid, with an assessment of cashflows. This also covers private investment repaid by citizens (e.g., Public Private Partnerships).

Once a project is approved for funding, the next step is to consider whether to include the project in the annual budget. The processes designed to manage public finances are commonly known as **'Public Financial Management'** and are often described in terms of an annual budget cycle, and/or a medium-term expenditure programme. It typically involves four key phases:

1. **Budget formulation.** The budget is prepared with due regard to government fiscal policies, strategic plans, and adequate macroeconomic and fiscal projections.
2. **Budget execution.** The budget is executed within a system of effective standards, processes, and internal controls, ensuring resources are obtained and used as intended.
3. **Accounting and reporting.** Accurate and reliable records are maintained, and information is produced and disseminated at appropriate times to meet decision-making, management, and reporting needs.
4. **External security and audit.** Public finances are independently reviewed, with external follow-up on whether the executive has acted on recommendations for improvement.

Task 1.2 Gather baseline economic and financial evidence

RRJ task(s)	Climate Resilience Investment Plan Template Section(s)	Effort	Importance
Task 1.1.1 Gather evidence, Task 1.3.1, Assess climate risk	1.2	Medium	Optional

What is this task about?

In this Task you gather data and evidence on the costs of regional climate impacts. This covers:

- Current and historic costs of extreme weather, as well as projected future costs.
- Existing and committed expenditure on development and climate change adaptation.
- Estimates of adaptation investment needs or of the benefits of adaptation.

What are key inputs for this task?

Key inputs include existing records or reports on impacts of extreme weather, from organisations, the public or the media. You may also wish to draw on the risk and vulnerability assessment in RRJ Task 1.3 and seek to quantify their economic or financial components.

What are the expected outputs from this task?

Completing this task provides you with an overview of the existing evidence on the costs of weather and climate, now and in future, as well as the costs and benefits of adaptation. It also provides you with a summary of the major regional development expenditure planned over the next 10-20 years (e.g. construction of new hospitals, metro or rail). You may want to summarise this into a short briefing report to raise awareness and understanding. The outputs from this activity can be used to support the main assessment of climate risks and vulnerabilities (RRJ Task 1.3) with an economic component.

**Task
1.2**

Gather baseline economic and financial evidence

Why is it important?

Having data on the costs of extreme weather and how they may rise in the future, and what you are currently spending helps in multiple ways. First it provides an appropriate framing for investments in adaptation by showing your region is already incurring costs from extreme weather and that these will rise in future. Adaptation can often seem like an additional cost on already stretched budgets. Therefore, it is important to use data to raise awareness that extreme weather already results in costs for adaptation.

This information can also be used to provide a baseline of 'business as usual' against which to appraise the costs and benefits later of investment Strategies and Actions in Phase 4. The process also identifies where more systematic data collection processes may be required, or where there are data gaps which can be filled.

Mapping existing planned spend on adaptation will help you better understand where strengths and weaknesses are in your region, and where more effort is likely to be needed

What should you focus on the first time round?

In the early stages, it is important to focus on the largest, most obvious sources of costs or evidence – for example damages from major floods, or expenditure in key sectors which are vulnerable to climate impacts. In later iterations, you may focus on developing new evidence or implementing systems to better capture the costs of extreme weather.

How can you complete it?

Historic and future costs of extreme weather - Search, collate and review the existing data and evidence about the impacts (and associated costs) of current weather on public services, businesses or the region, and how this may change with climate change. Where detailed cost data does not exist, it may be possible to combine data on impacts with unit costs to undertake valuation (e.g. to value the economic costs of mortality, or the financial costs of increased cooling demand in a heatwave). Data can be about costs to individual organisations (financial) or to society (economic, including non-market effects, such as costs to health or carbon emissions from wildfires). You may also wish to undertake one-to-one conversations and interviews with staff in the regional government or other organisations or issue a call for evidence to capture additional public, private sector or civil society costs. Commissioning bespoke studies can also be useful to aid with data collection and quantification.

Current and future adaptation expenditure - You may also be able to gather information on current and planned expenditure from a range of sources, including capital investment plans, budget lines, and stakeholder dialogue. Draw on the information reviewed in Task 1.1 to help identify existing expenditure. You may also choose to draw on budgeting information, especially if your organisation uses green budgeting approaches which include adaptation. [Some studies](#) have provided top-down estimates of adaptation as a percentage of overall GDP or GVA as a way of providing some very early numbers on the near-term costs of adaptation – however, costs are likely to rise significantly in future.



Insight: In situations where you may have a need to gather information from a wide range of municipalities or organisations, you may wish to consider issuing an online survey. In developing its heat risk action plan within Pathways2Resilience, the Greater London Authority employed this approach to help compile a comprehensive overview of existing sources and instruments being used to fund and finance adaptation.

Task 1.2

Gather baseline economic and financial evidence

The aim of the activity is to gain a broad understanding of the current and future costs, rather than focusing on every detail. Wherever possible, data and estimates should cover the economic (societal) costs, financial costs (i.e., costs to individual organisations, such as the regional authority, or health organisations) and fiscal costs (direct costs to public finances – either by expenditure or changes in revenues), noting these can overlap. If available, this should also include consideration of the differential impacts of individuals and households from varying hazards, exposure, or vulnerability.

You should systematically capture and log the data. For adaptation expenditure, you should classify it into ‘types’ of expenditure (Type 1, 2, 3). You may wish to produce a summary report to help build awareness of the costs of extreme weather and climate change. If it does not already exist, you may also wish to set up an ongoing process to expand the evidence base.



Food for thought: When planning the type of information to search for, it is worth thinking about what will help you make the case for action most convincingly to those you need to bring on board early on. For example, many senior managers and politicians have a strong focus on boosting Gross Domestic Product (GDP) as part of economic development. The [COACCH project](#) has produced NUTS2 level estimates for Europe which illustrates how climate change could impact regional GDP, which can be leveraged relatively easily to make the case to senior managers and politicians that adaptation will support such goals.



Before moving onto Task 1.3, have you:

- ☐ Engaged with existing services or other organisations on what impacts they have experienced or might experience in future.
- ☐ Undertaken a desktop search of existing studies.
- ☐ Completed an inventory on the costs of extreme weather or climate change in the region, as well as known adaptation needs and existing expenditure.
- ☐ Identified the main existing expenditure on adaptation and future investment needs.

**Task
1.2**

Gather baseline economic and financial evidence



Supporting resources:

Guidance and supporting materials

- UKCIP (2007) [Costing Guidelines – Guidelines for costing the impacts of extreme weather events](#) - These guidelines set out the standardised approach to costing extreme weather impacts. They also include a costings spreadsheet tool for collecting impacts.
- [ICLEI – Cost of Doing Nothing Toolbox](#) - The CODN toolbox provides municipal decision makers with guidance on collecting locally-relevant data and weighing the costs of action vs. inaction. The CODN resources also support municipalities in framing their local data within a national and provincial/ territorial context and examine costs and impacts of climate change across a number of hazards and sectors.
- UNDP – Investment and Financial Flows Analysis - <https://climatepromise.undp.org/research-and-reports/undp-methodology-assessing-investment-and-financial-flows>

Case Studies and Examples

- Climate Ready Clyde (2019) [Towards A Climate Ready Clyde: Climate Risks And Opportunities For Glasgow City Region – Economic Assessment](#)
- ICLEI and City of Hamilton (2022) [How much is climate change costing Canadian communities? City of Hamilton Report.](#)
- City of Windsor, (2019) [Climate change impacts in Windsor: A Technical Analysis.](#)
- Highland Adapts (2024) [Economic assessment of climate change impacts in the Highland Region.](#)
- [Pathways2Resilience \(2024\) Lower Austria case study](#)

Data sources

- [European drought impact database](#) - The European Drought Impact Database (EDID) contains more than 13,000 georeferenced records of drought impacts from Europe, and across different sectors, covering a time window from 1970 to present. [The data is provided at a range of scales down to NUTS3 level.](#)
- [Hanze - Hanze Flood Database](#) - a multi-source, well-curated historical flood impact dataset for Europe (1870-2020) and high-resolution reconstructions of hydrological extremes, catchment alterations, exposure, flood protection levels and vulnerability since 1950.
- COACCH - [COACCH Climate Change Impact Scenario Explorer](#) – Online tool which allows an assessment of the economic impact of climate change at the NUTS2 regions for a range of climate scenarios.
- EM-DAT - [EM-DAT](#) – This database contains data on the occurrence and impacts of over 26,000 mass disasters from 1900 to the present day. The database is compiled from various sources, including UN agencies, non-governmental organizations, reinsurance companies, research institutes, and press agencies. The data is **open access** for non-commercial use.

Task 1.2

Gather baseline economic and financial evidence



Explainer: Estimating costs of weather, climate change and adaptation

There are a range of methods that can be used to gather information on the regional costs of extreme weather, climate change and adaptation to develop a financial and economic baseline. Such costs can be financial (viewed from the perspective of an organisation) or economic (viewed from the perspective of society). Economic costs include non-market values, for example health impacts or the costs of carbon.

Estimating costs of historic weather events

There are a number of evidence lines that can be used to estimate the costs of weather events

Direct costs – These are costs incurred based on actual recorded activity in a region. For example, the amount of funds spent on recovery from a flood event. These may be provided by individual departments or organisations or be held in databases in specific teams in a region. An example is the staff costs associated with responding to an extreme weather event.

Costing of impacts – Where direct costs are unavailable, but quantified impacts exist (e.g. hectares of wildfire burn or numbers of homes flooded), these can be valued using market prices or non-market valuations. The typical formula, using the guidance from Metroeconomica (2004) is:

$$\text{Cost (or benefit)} = \text{number of physical units in year } x \text{ economic unit value}$$

Specifically: the cost (or benefit) of a weather-related event on a specific vulnerable receptor (or group of receptors) under selected climate and socioeconomic scenarios (€ per event in year t) equals the predicted 'physical' impact under selected climate and socio-economic scenarios (the number of physical units affected by the event in year t) times the appropriate economic unit value or 'price' € per affected unit in year t). An example could be the impacts of wildfires. Here, the area of a burn is multiplied by a standard value to estimate the amount of carbon emitted, and the air pollution (e.g. PM2.5) caused. These are then valued using the governmental values for the cost of carbon and air pollution. Data availability and precise values will vary by member state, and so it is challenging to provide a single set of costs here.

Estimating costs of future impacts

Valuation of future risks – future valuation uses a similar approach to the Metroeconomica guidance. It typically involves using impact models to model the potential impacts of future climate risks before then valuing them using market prices. An example would be estimating future energy costs. This would involve estimating reduced heating demand and increased cooling demand and then applying retail prices of electricity to provide indicative costs and benefits.

Use of macroeconomic models – In addition to using valuation of impacts on individual risks or sectors, macroeconomic models can be used to simulate the impacts of climate change on the economy overall, e.g. on GDP of Europe or regional economies. These are more complex and time consuming, but some major EU research projects, such as COACCH and ACCREU provide outputs that regions can use.

Estimating adaptation expenditure

There are detailed methods for estimating existing adaptation expenditure. However, early, straightforward options include:

Direct budget lines – Many governments have dedicated budget lines or clearly identifiable funds which support services or teams or projects that provide services that directly support adaptation. These include sustainability teams, flood risk management or green infrastructure teams.

Coefficients / Green budgeting – Green budgeting refers to the set of tools and systems of budgetary policymaking and public financial management to inform, assess and deliver green objectives. A common part of green budgeting is tagging – identifying budget lines that deliver, or contribute to delivering, sustainability objectives including adaptation. Such systems can be more tailored, as well as identifying areas where more progress is needed and incentivising further action.

% of GDP – some studies estimate adaptation costs as a proportion of regional GDP. This can be helpful for early stages but is likely to underestimate future adaptation needs as impacts rise.

**Task
1.2**

Gather baseline economic and financial evidence



Case Study: Estimating costs of climate change and adaptation, Lower Austria

"Being able to frame climate impacts and adaptation costs in economic and financial terms has made a significant difference to being able to engage colleagues from different Departments in the Regional Government and make the case for greater action to adapt." - Simone Hagenauer, Project Manager, Ecoplus, the Business Agency of Lower Austria

Introduction

As part of preparing for the development of additional climate change adaptation measures, the environment and economy departments of the regional government of Lower Austria worked with Pathways2Resilience to review costs of extreme weather and future investment needs.

Core information

The region was keen to better understand how much extreme weather was costing the region, and the costs of climate change, as part of the preparation for the next Lower Austrian Climate and Energy Programme. They were keen to strengthen the argument for investments in adaptation. They also wanted to identify further improvements to local and regional systems to better capture costs of extreme weather and climate change, and to stimulate investments in adaptation and innovation.

Key takeaways

- The region learnt that existing public data already highlighted the impacts of extreme weather on public budgets, and it became clear that climate change could have a substantial effect on regional GDP.
- They learnt that the amount being spent on adaptation was significantly lower than near-term costs of adaptation and that it was better to proactively address adaptation needs, including exploring the potential for using adaptation as a tool for innovation and new business opportunities.
- They learnt that it was possible to undertake a high-level appraisal of the costs of extreme weather and climate change, as well as indicative near-term adaptation costs using publicly available data (even data on NUTS2 level). Data came from a range of national and EU research and innovation projects, including the Horizon 2020 project, COACCH, and work by the University of Graz.
- The work has helped the region frame adaptation as an investment which protects the environment, people and the economy and strengthened the case for increasing the allocation of public budgets towards adaptation.
- It has also helped the region to realise that there are local economic development opportunities arising from supporting the development of companies which can provide the goods and services to help the region adapt.

The region is reframing its approach to adaptation as supporting economic and social benefits and is taking forward new actions to support the economy as part of its adaptation strategy. As part of the [ARCADIA](#) project, the region will be looking at raising awareness of climate risks and adaptation plans for municipalities and businesses, developing and testing nature-based solutions. Moreover, as part of the Partnerships for Regional Innovation initiative with Climate KIC, Lower Austria is looking at developing a roadmap of innovation actions and interventions for the transition towards climate resilience, with a particular focus on the opportunities from digitalisation and adaptation.

Leveraging existing public data can reveal the financial impacts of extreme weather and highlight the economic risks of climate change. Proactively addressing adaptation needs not only reduces costs but also opens new business opportunities. By reframing adaptation as an investment in both the environment and the economy, regions can support growth while enhancing resilience. Moreover, regions should consider the different initiatives available that offer valuable models for raising awareness, developing solutions, and capitalizing on digitalisation in adaptation efforts.

**Task
1.2**
Gather baseline economic and financial evidence

Case Study: Using Risk Assessment to Prioritise Adaptation Finance in the Basque Country
Introduction

The Basque Country has adopted a data-driven approach to adaptation, prioritising strategic investment based on projected risks and economic impacts. Through the KOSTAEGOKI Project (2019–2021)—the first regional climate risk assessment in Spain to include a socioeconomic dimension—the government estimated that without action, coastal flooding could impact 2,700 hectares, with potential losses of €2 billion in residential and industrial assets and €3.2 billion in tourism revenue.

Work is currently underway on governance mechanisms that will enable inter-institutional collaboration to obtain external funding. Of note is the KAIA working group, set up to seek funding for improving climate resilience in the Basque Country. It was created as an inter-institutional and multi-sectoral committee with the mission of defining, prioritising, coordinating and leading the development of policies, strategies and actions in the field of climate change adaptation throughout the Autonomous Community of the Basque Country (CAPV).

Core Information

The Basque Country has positioned itself as a frontrunner in climate risk assessment and finance readiness. Led by the Department of Industry, Energy Transition and Sustainability, and supported by research institutions such as AZTI, the KOSTAEGOKI project provided a robust evidence base for prioritising adaptation measures. The analysis demonstrated that coastal flooding poses some of the most significant risks, threatening both infrastructure and the regional economy, particularly the industrial and tourism sectors. Building on this evidence, the government has created governance structures like the KAIA working group to coordinate across ministries, agencies, and sectors, ensuring that climate adaptation priorities are aligned with funding opportunities. By linking scientific evidence to financial planning and inter-institutional governance, the Basque Country is preparing to mobilise EU, national, and private resources for climate resilience.

The KAIA working group stands out for its fair and inclusive approach, involving multiple departments and technical stakeholders, and for its capacity for continuous learning. Adaptation is understood as a dynamic process, responsive to changing conditions and informed by monitoring and experience.

Key Takeaways

- Evidence-based prioritisation: By quantifying both physical risks and socioeconomic impacts, the Basque Country was able to identify priority sectors for climate finance.
- Integration of science and economics: KOSTAEGOKI combined physical climate data with economic modelling to demonstrate the cost of inaction.
- High-cost risks identified: Coastal flooding alone could generate losses of €5+ billion, strengthening the case for urgent investment.
- Governance innovation: Creation of the KAIA working group to provide an institutional home for adaptation finance coordination.
- Whole-of-government approach: Multi-sectoral and inter-institutional collaboration ensures that adaptation financing is mainstreamed across policy areas.
- Financing readiness: Evidence and governance structures position the Basque Country to effectively compete for EU, national, and private climate finance.
- Replicability: Demonstrates how other regions can use risk assessments not only for planning, but also to unlock financing opportunities.

Sources:

[KOSTAEGOKI, Vulnerability and Risk Assessment](#) | Ithobe

**Task
1.2**

Gather baseline economic and financial evidence



Case Study: Improving knowledge through Green Budgeting, Andalusia

Introduction

Andalusia has pioneered the integration of climate considerations into public finance through a comprehensive “green budgeting” methodology. This initiative aligns regional budgets with climate and sustainability objectives, ensuring that public spending contributes not only to mitigation and adaptation but also to systemic resilience. The approach was established under Law 8/2018 on Climate Change and Energy Transition in Andalusia and reinforced by the Andalusian Climate Action Plan (PAAC, 2021–2030).

Core Information

The green budgeting initiative, formally launched in 2019, is among Europe’s most ambitious efforts to embed climate action into fiscal governance. It is supported by a €800,000 publicly funded contract running until 2026 and is firmly rooted in international frameworks such as the OECD guidelines, European Green Budgeting principles, and the EU Taxonomy for sustainable finance.

The methodology relies on a three-step process. First, budget indicators are systematically identified and tagged for climate relevance, creating a detailed map of how spending intersects with environmental objectives. Second, indicators are assessed quantitatively using weighting coefficients that classify them as having a direct, indirect, or null impact on climate goals. Third, programs undergo a qualitative review, measuring their alignment with the PAAC’s adaptation, mitigation, and resilience targets.

Transparency is central to this approach. Each year, the government publishes two key documents: an ex-ante Report on the Budget’s Climate Incidence attached to the draft budget law, and an ex-post Annual Report on Climate Budget Execution that evaluates actual spending. Together, they provide both prospective and retrospective views of Andalusia’s climate-related financial commitments.

The impact of the initiative has been substantial. By 2023, €1.176 billion—2.62% of the region’s total budget—was allocated to climate action. Between 2019 and 2023, identified climate-related measures increased by 90%, while the number of budget sections explicitly acknowledging climate impact grew from seven in 2019 to 32 by 2025. This expansion represents a more than 300% increase in tagged indicators, demonstrating how deeply climate considerations are now embedded across governance.

Mitigation and energy transition initiatives account for the majority with 57 actions (62.6%), followed by adaptation with 39 actions (42.9%), and communication and participation efforts with 25 actions (27.5%). Importantly, Andalusia has also integrated gender and climate budgeting, creating synergies that ensure resource allocation is both equitable and environmentally sound.

A key pillar of success has been investment in capacity building. Civil servants across departments are trained in climate tagging and evaluation, strengthening institutional ownership of the methodology. This ongoing learning process not only improves technical accuracy but also fosters a broader cultural shift within public administration, embedding climate responsibility into everyday governance.

Key Takeaways

- **A strong legal** foundation has ensured political and institutional continuity.
- Alignment with **international standards** enhances credibility, comparability, and replicability.
- **Capacity building** has been critical, promoting ownership and sustainable institutional change.
- **Annual reports** guarantee transparency and allow public accountability.
- The **integration of gender** and climate budgeting creates coherence and fairness in financial decision-making.
- The Andalusian model offers **replicability potential**, provided other regions establish legal frameworks, foster cross-departmental collaboration, and invest in continuous training.

Sources

[Andalusian Regional Government – Climate-Responsive Budgeting Reports](#)

Task 1.3 Develop adaptation objectives and economic rationale

RRJ tasks(s)	Climate Resilience Investment Plan Template Section(s)	Effort	Importance
1.1. Understand the system, 1.3 Assess climate risks and vulnerabilities, and 2.3 Co-create a shared vision	1.3	Low	Essential but advanced

What is this task about?

This Task involves setting out the adaptation objectives for a Climate Resilience Strategy and the associated economic rationale. You may also wish to set spending objectives (particular objectives associated with the use of Investment).

What are the key inputs for this task?

Regions can draw policy appraisal guidance from their central policy and finance departments, as well as from member states and the EC. You should also draw on the information collated in Tasks 1.1 and 1.2, as well as the RRJ tasks related to establishing a baseline (1.1), assessing climate risks (1.3) and co-creating the vision. (2.3).

What are the expected outputs from this task?

The output from this task is a written set of adaptation objectives written for the Strategy and Action Plan and an associated economic rationale. The rationale sets out why the region is developing a Climate Resilience Strategy and Action Plan from an economic (societal) perspective, whilst the objective set out what it will seek to achieve. The strategy objectives and rationale should include adaptation objectives but may also consider financing objectives. This is used to support the longlist of options for adaptation pathways in Task 3.1.



Food for thought: At the early stage of developing your Investment Plan, you may wish to keep your baseline report as an internal document which provides a stocktake of progress to date and consolidates progress. However, you may also wish to publish this or issue it for early consultation. Doing so could have a number of benefits, such as identifying new costs, helping refine the regional narrative or objectives, encouraging stakeholder support and buy-in, and engaging additional stakeholders in the process.

**Task
1.3**

Develop adaptation objectives and economic rationale

Why is it important?

- **Providing a framework to appraise adaptation options**- considering the Strategy's economic case from the beginning helps with securing investment in the action plan in the later stages. This starts with a clear rationale and objectives informs and constrains the development of a longlist of adaptation options and pathways.
- **Stakeholder engagement and momentum**- Outlining the contribution a Climate Resilience Strategy makes to a region's broader policy goals helps engage stakeholders and builds early momentum. It provides a forward signal on the approach the region is taking to develop proposals for investment and why, bringing other actors such as communities, private sector or financiers into the process,
- **Informing financing models**- considering the economic rationale helps early thinking on the respective roles of the public and the private sector in adaptation. Similarly, the AIC process builds on the high-level benefits in future tasks to identify them in more detail and link them to potential beneficiaries as part of developing financing approaches for pathways and actions.
- **Centring Just Resilience**- A good economic rationale should consider distributional implications and requirements, both in terms of addressing risks, but also in terms of who pays for the adaptation.
- **Monitoring, Evaluation and Learning**- A clear rationale and objectives are important for monitoring, evaluation and learning of the Strategy and Investment Plan.

What should you focus on the first time round?

Focus on being clear on the economic rationale for why the region is developing a Strategy and developing specific objectives or outcomes you want to achieve. This is important to help clarify the roles and responsibilities of different partners in financing and delivering these options. Future iterations can expand the scope of the Strategy's risks or sectors.

How can you complete it?

Setting adaptation objectives

Start by setting out some draft adaptation objectives for the Strategy. Strategy objectives set out **what** the Climate Resilience Strategy and Action Plan will aim to do through the spending and investment. They should be framed as social outcomes, aligned with the underlying policies, strategies and business plans of the organisation. Focus on a small number of objectives (e.g. reducing risks of flooding). These should focus on what needs to be achieved rather than the potential solution (e.g. reducing flood risk, rather than 'building sustainable drainage systems').

Objectives should also have a degree of coherence to be realistic – they should be based on consistent assumptions on future levels of warming and socio-economic change. The level of warming assumed defines the scope of the problem (e.g. the number of assets at risk, or people affected by flooding. Objectives should also seek to be coherent across sectors and value chains. For example, there is no point in having a high degree of adaptation in commercial buildings if the transport network does not allow citizens to access them.

Finally, the Strategy objectives should also quantify the high-level benefits that the Strategy and action plan will achieve. You may also wish to outline the contribution to wider economic, social or environmental policy goals and targets.

**Task
1.3**
Develop adaptation objectives and economic rationale


Food for thought: While politically challenging, being more specific is helpful as it allows better definition of options and their costs and benefits. For example, whilst ‘reducing flood risk’ is a positive outcome, ‘reducing flood risk so that no-one in the region is exposed to a 1 in 200-year flood event’ is more helpful, because it is specific and quantitative. Relevant options can then be evaluated for their adaptation effectiveness, value for money and economic and financial benefits.

Considering these issues, the ClimateFIT project, building on work by the UK Climate Change Committee has developed six criteria for good adaptation objectives:

1. A time-bound horizon (e.g. 2050) that serves as a focal point for long-term climate adaptation efforts.
2. A clear and operational definition of what climate-resilience means, identifying specific climate and socio-economic scenarios and associated hazards or risks that the area should be resilient to.
3. Clarity on how measurable climate-resilience sectoral goals can be developed consistently with the national objective, and how these goals will be monitored.
4. Clarity on the roles of government, the private sector, and households in delivering the objective.
5. An ability to define and cost specific programmes, projects which contribute to the objective
6. A process for how the objective and associated sector-specific targets will be reviewed and updated over time as necessary,

Source: Authors, based on Taylor, England and Lea-Eggert (2025).

Some example objectives are highlighted below:

Figure 13: Examples of climate resilience objectives which can support selection of options.

 BUILDINGS	 TRANSPORT	 AGRICULTURE
• Minimum number of hours during which interior temperatures should not exceed a certain threshold – in new or renovated buildings – without recourse to air conditioning. • Guaranteed continuity of public services during periods of extreme heat. • Annual targets for the amount of public reinsurance (CatNat scheme) to ensure the sustainability of the system in a context of increasing risks.	• Maximum recovery times following traffic disruptions (as already exist for the electricity network). • Maximum number of days for which temporary speed reduction measures can be applied to a route. • Traffic reliability targets (e.g. a maximum number of minutes for delays caused by weather conditions). • Expected level of availability of at least one route under reasonable conditions (e.g. journey time).	• Guaranteed average yield over a set period. • Annual production targets. • Guaranteed self-sufficiency rate of 100% or more for most agricultural and food products.

Source: Authors, based on Taylor, England and Lea-Eggert (2025). Source: I4CE, 2024.

**Task
1.3**

Develop adaptation objectives and economic rationale

Develop economic rationale for adaptation objectives

For each objective, then begin to set out an economic rationale. An economic rationale typically relates to improving economic efficiency or social welfare. Examples include:

- **Delivering improvements in public services** – improving efficiency of services, the quality or quantity of services, providing a new service, complying with new policies or legislation, or continuing certain activities. For example, a region could seek to extend the coverage or improve the quality of a flood or heat alert or early warning system.
- **Providing social/public goods** – providing things that are not provided at a satisfactory level by the market alone – for example flood defences, or nature-based solutions. Another example could be making healthcare services climate resilient.
- **Improving the welfare efficiency of existing private markets** – helping improve the societal benefits provide by private markets. For example, imposing temperature standards for buildings to lower impacts on workers.
- **Achieving social objectives considering ethical or distributional issues** - for example fair access to health or education. This is particularly relevant since people from lower socio-economic backgrounds are disproportionately exposed to climate change and have more limited resources to adapt. Geographical variations in hazards and exposure (e.g. in coastal areas, or urban heat islands) also affect people differently.

In reality, the rationale is often a mix of all of all of these, and it will vary from region to region.

The rationale and objectives can normally be developed by the local team leading the Climate Resilience Strategy and Investment Plan but should be informed by evidence and views of stakeholders. Regions may draw on the outputs developed in Phase 1 of the RRJ process, including the framing of the problem (Task 1.1), system maps (Task 1.2) and the risk assessment (Task 1.3), as well as vision and objectives developed through the vision co-creation process from the RRJ process (task 2.2.1 and 2.2.2), or they may choose to develop them after this process. Regions should draw the information together with information collected in Tasks 1.1 and 1.2 and use them to populate the financial sections of the Baseline report.



Insight: Setting out a rationale is not a common step in developing a Climate Resilience Strategy – regions may assume that adaptation is needed, or they may have a legal duty to adapt. Therefore, whilst it might feel unnecessary early on, having a clear economic rationale for intervention will support the mobilisation of finance. It will help you think about where the region can act strategically to crowd in new economic activity in additional sectors and systems.

**Task
1.3**
Develop adaptation objectives and economic rationale


Before moving onto Phase 2, have you:

- ☐ Documented the spending objectives for the Climate Resilience Strategy and Action Plan.
- ☐ Set out a clear investment rationale.
- ☐ Completed the financial parts of the baseline report.


Supporting resources:
Guidance and supporting materials

- Cimato and Mullan (2010) [Adapting to Climate Change: Analysing the Role of Government](#) - This guide explores the role of Government in supporting people and businesses to overcome barriers and help them take the right adaptation decisions.
- Frontier Economics and Paul Watkiss Associates (2022) [Barriers to financing adaptation actions in the UK](#) - This report outlines the common barriers to financing adaptation in the UK, based on a literature review. Whilst UK-focused, the barriers are more common and widespread. It highlights the indicative strength of the barriers, and groups them by type - for example information, economics and finance, behavioural and policy and regulation.
- Taylor, R., England K and Lea Eggert (2025) *Develop your Investment Plan – Guidance for Facilitators*. Forthcoming. Deliverable 3.1 of the ClimateFIT project – This includes guidance on developing effective adaptation objectives, including different types and their advantages and disadvantages.
- I4CE (2024) [Anticipating the impacts of a 4°C warming: what is the cost of adaptation in France?](#) – This report assesses the costs of adaptation for three sectors in France: Built Environment, Transport and Agriculture. It provides particular examples of the types of adaptation objectives that can support development of financing strategies and options.
- GLA Economics (2008) [The rationale for public sector intervention in the economy II](#) – This report looks at the rationale for public sector intervention in the economy. The report sets out the general economic theory on why and when the public sector should intervene and tries to give relevant regional examples.

**Task
1.3**

Develop adaptation objectives and economic rationale



Explainer: Economic rationale for adaptation: from extra cost to prudent investment

Adaptation has historically been portrayed as an additional cost to regions, making it seem unaffordable and making it compete against other spending priorities. Regions can successfully reframe adaptation to show its positive economic (societal) and financial benefits. The most common economic reframing is known as the triple dividend. This involves seeing adaptation as:

- **Avoiding future losses** - Adaptation helps minimise economic and financial losses, and while context-specific, it often has very high cost-benefit ratios compared to other investments.
- **Generating economic benefits through adaptation activity** - Adaptation, like any other economic activity, generates economic benefits, both directly and indirectly, including through job creation, productivity enhancements and tax revenues.
- **Delivering co-benefits** - Whilst they vary from case to case, adaptation projects deliver a wide range of extra benefits, for example helping increase property values and rental yields, or boosting biodiversity.

The narrative can be further extended to demonstrate that **adaptation helps achieve strategic economic and social priorities, by improving the effectiveness of such actions**. For example, adaptation improves regional economic performance by reducing the impacts of heat on labour productivity, or the disruption to transport networks and supply chains. It also supports the transition to net zero by improving the reliability of energy generation, helping reduce the costs of mitigation. In communicating these issues, it is also important to recognise the existing 'adaptation deficit', i.e. the extent to which societies are adequately adapted to the current climate, since these are often excluded from evaluations of costs.

As well as economic, social and environmental benefits of adaptation, an additional under-communicated area is the financial co-benefits it can provide. Examples of these benefits include:

- **Reducing future pressures on public finances** - Climate impacts result in financial costs to regions because of extreme weather events, and slow-onset changes. This can occur directly (e.g., through payments for recovery from extreme weather and adaptation measures), as well as indirectly from erosion of the revenue base because of reduced output, high public expenditure on social payments, or wider debt sustainability. As one example, sea level rise could affect up to 30% of local government revenue in Florida.
- **Supporting access to finance** - Strong adaptation policies can improve creditworthiness and reduce the potential future risk of downgrades of credit ratings, due to improved economic performance, reduced regulatory risk, and improved sustainability.
- **Protecting existing revenue streams** - Adaptation also has the potential to protect revenue streams which are used and relied upon for public spending or repayment of debt. For example, climate-proof transport systems, or actions which support businesses to adapt, increase the ability of the private sector to continue the payment of local taxes.
- **Supporting broader macroeconomic stability** - Investments in adaptation have the effect of providing a more stable economic environment, which in turn contributes to a positive investment environment. This helps support continued public and private investment into a region, in turn bolstering the public tax base and reducing the risk of capital flight.
- **Lower insurance costs** - Proactively demonstrating investments in adaptation can be used to obtain reductions in insurance discounts.

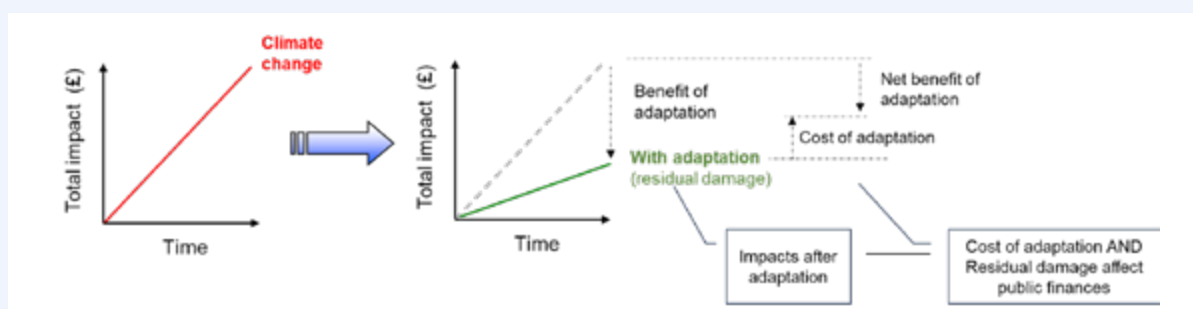
**Task
1.3**
Develop adaptation objectives and economic rationale

Explainer – The economics of adaptation

The costs and benefits of adaptation options are typically used within a decision making framework as part of the appraisal of adaptation options, using the costs and benefits to allow decision makers to make informed decisions between options, allowing trade-offs and providing a means to justify decisions (UNFCCC, 2009). However, information on costs and benefits can also be used in the design of policies and strategies, and it is important to note that the setting of climate change adaptation or resilience objectives can have a significant effect on the subsequent costs and benefits.

There is typically a three-stage approach to considering the costs and benefits of adaptation. The first is to estimate the future baseline conditions. This is needed because future impacts are influenced by socioeconomic change and the world will not be the same in future. The second step is to then add the additional impact of climate change (left panel). This can then be compared against the adaptation scenario. (right panel) to provide the gross benefit of adaptation. The green line represents the residual damage, since in most cases it will not be cost effective to reduce damages down to zero. It is also important to consider the costs of adaptation itself, to provide an estimate of the net benefit.

Figure 14: Schematic of the Climate Change Impacts, Adaptation and Residual Damage.



Whilst conceptually this is relatively straightforward, in reality, this is difficult because the physical and economic impacts of climate change and benefits of adaptation vary by sector, location and technology. There is also deep uncertainty around socio-economic change and future levels of warming, but also climate models, impacts, and adaptation. Such factors also vary over time. This means it can be very challenging, and estimates depend on definitions, models, assumptions, scenarios and uncertainty.

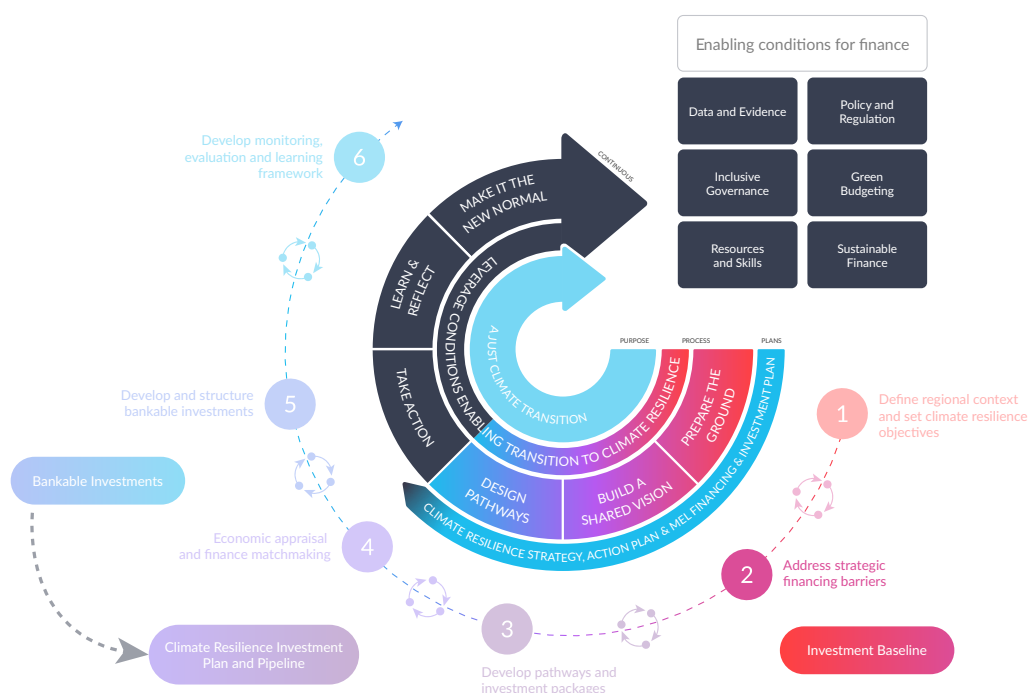
There are also issues relating to economic valuation – for example accounting for time preference (discount rates) can also be difficult to monetise as they appear in non-market sectors (e.g. health, or ecosystem services).

In practice, objectives vary between regions, countries and communities and there will be trade-offs between adopting all possible measures on the one hand and living with the risks on the other (Horrocks et al., 2005). The costs and benefits of adaptation thus depend on the objectives set, and the underpinning approach – e.g. if they are set on the basis of economic efficiency, reducing risks to acceptable levels, or trying to return to current risk levels – as well as assumptions around the levels of climate and socio-economic change.

A Regional Climate Resilience Strategy typically involves setting objectives which guide the development of a portfolio of hard and soft measures that address a range of hazards and sectors. These objectives can be set in many ways (e.g. resilience to a warming target, risk reduction, monetary metric). In setting initial objectives, it is important to be aware how their framing will have implications in subsequent costs and benefits as well as alternative appraisal methods (such as cost effectiveness analysis). Therefore, regions should seek to strike a balance between being specific in scope and assumptions on climate scenarios (which help appraisal and financing of concrete measures) and being broad enough to allow for an exploration of a range of different options which could meet the outcomes. It will also be important to consider reviewing and revising objectives based on the findings of the economic appraisal of the portfolio.

Phase 2: Addressing strategic financing barriers

The aim of this phase is to understand how your region currently finances adaptation, and the potential to diversify and scale the funding and financing options available. You explore the range of funding and financing approaches the regional already uses and identify future strategic sources and instruments, as well as the barriers to their use. Finally, you identify actions to address barriers to finance during the lifetime of the region's Strategy and Action Plan or their development.



Links to the Regional Resilience Journey:

AIC Tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
Task 2.1: Identify current and desired sources and instruments	Regions may also wish to draw on the possible futures, emerging shared vision and theory of change in Phase 2 of the Regional Resilience Journey as these may include indications of the mix of possible sources or financing arrangements which might need to be available in future. N/A	Depending on the ordering of tasks, regions may wish to use the strategic financing options as an input into the development of the Vision and Theory of Change in RRJ Task 2.3 and Task 2.4.
Task 2.2: Identify finance barriers	N/A	N/A
Task 2.3: Improve access to finance	Regions may wish to draw on the possible futures, emerging shared vision and theory of change in Phase 2 of the Regional Resilience Journey to inform their thinking and communicate with stakeholders how financing will need to change to meet these goals.	An expanded set of financing options may open different ways to meet the adaptation objectives and therefore also options. Therefore, the new financing options should be an input into RRJ Task 3.1 in the longlisting of options.

Task 2.1 Identify current and desired sources and instruments

RRJ task(s)	Climate Resilience Investment Plan Template Section	Effort	Importance
N/A	2.1	Low	Optional

What is this task about?

This task maps the existing adaptation initiatives already underway and build a picture of how much funding and finance is already flowing, including which sources and instruments are used and how. It covers finance within the region but also encourages a review of the wider national landscape. This task deepens the work conducted in Task 1.3.

What are the key inputs for this task?

The keys input for this are the output from Task 1.3 outlining the existing adaptation projects that are being funded. You may also wish to draw on the Pathways2Resilience D5.2 Catalogue of sources and instruments to help identify and categorise the different sources and instruments.

What are the expected outputs?

The output from this Task is table of the existing sources and instruments for adaptation finance currently being used in the region, and a summary of the key findings, such as the current total spend on adaptation, and the main sources or instruments being used. You may also wish to include a map of the broader Investment Landscape (see case study).

**Task
2.1**

Identify current and desired sources and instruments

Why is it important?

Adaptation financing is at an early stage in Europe, and many regions only use traditional sources and instruments (for example European grants). To bridge the finance gap, regions will need to scale up existing sources of funding and finance, as well as building a more diverse set.

Mapping your region's existing sources and instruments provides a richer picture of the current maturity of the region's finance approach, including who is currently paying for adaptation and how. It also helps identify the scope to expand those approaches and where innovation might be needed. It also has a secondary benefit of identifying the region's current collective financing expertise and capabilities.

Collating the existing financing approaches also creates a broader awareness the options a region already has available to finance adaptation in a particular sector or for particular risks. It can also be used to inform the Investment Strategies developed in Phases 3 and 4.

This Task also builds the region's capabilities and understanding of finance, helping reduce the region's long-term reliance on external consultants. It also improves the uptake of existing sources and instruments by showcasing what is already available and focusing the discussion on scaling their uptake and replication.

What should you focus on the first time round?

The priority for this Task is making sure that you document the main sources and instruments in use. This depends on the regional context but could be determined based on the volume of finance or whether it is addressing priority risks. In future revisions you can focus on smaller, less important sources and instruments, or additional sectors, which provide a richer picture.

How can you complete it?

Identifying existing sources and instruments

Review the list of existing spend on adaptation already documented in Task 1.3, and document the source and instrument used for each. To help you, you can use the Pathways2Resilience Catalogue of sources and instruments to classify the sources and instruments you have identified, or to identify other possible sources or instruments that may have been missed in the initial review.

For each source or instrument, you should identify its purpose, volume and beneficiary. You should also capture the financing typology. Because adaptation and development are closely linked, there is the potential to over-report on the total amount of finance being spent on adaptation. To address this, the IDFC have set out three types of adaptation financing:

- **Type 1** – Climate proofing – In these projects, adaptation is the secondary objective. It is not the primary objective for undertaking the project but is a requirement for meeting the main project goals over the long term. An example would be a new hospital.
- **Type 2** – Mixed adaptation – In these projects, adaptation is one of multiple objectives – an example might be a place-based regeneration project.
- **Type 3** – Pure adaptation – These are projects for which the main objective is to adapt to climate change. Examples would include a flood defence or an adaptation capacity building programme.

**Task
2.1**
Identify current and desired sources and instruments

For each source and instrument, you should assign a financing typology. An example output from the process is shown below:

Table 3: Example catalogue of existing regional sources and instruments for adaptation. Note the totals are the same even though individual lines may differ based on the mix of sources and instruments.

Source/ Instrument	Public, private, or hybrid	Financing typology (Type 1/2/3).	Purpose	Amount	Benefi- ciary
Sources					
National Government	Public	Pure adaptation (Type 3)	General, un-ringfenced grant. Small proportion allocated to fund sustainability team.	€1.25m (€250,000 a year for 5 years)	
European Commission	Public	Mixed adaptation (Type 2)	LIFE climate change adaptation grant for deployment of green spaces (note 50% cofinanced with own resources)	€10m	
Own resources	Public	Mixed adaptation (Type 2)	Own resources to co-finance LIFE grant	€10m	
EIB	Public	Climate proofing (Type 1)	Framework loan for regeneration of public spaces, with design considerations for adaptation included.	€100m	
Total				€121,250,000	
Instruments					
Intergovernmental Transfer	Public	Mixed adaptation (Type 2)	Use of own resources for co-financing of LIFE grant	€10m	
		Pure adaptation (Type 3)	National government funding for core staff.	€1.25m (€250,000 a year for 5 years)	
Grants	Public	Mixed adaptation (Type 2)	LIFE climate change adaptation grant	€10m	
Loans	Public	Climate proofing (Type 1)	Used for mainstreaming climate resilience into public space regeneration.	€100m	
Total				€121,250,000	

During this process it is also worth using the Pathways2Resilience catalogue to critically evaluate the strengths and drawbacks of each identified source and instrument to help build your understanding of the current advantages and limitations.

**Task
2.1**
Identify current and desired sources and instruments
Identifying additional sources and instruments

Review the [Pathways2Resilience Catalogue](#) to identify potential additional sources and instruments to consider for use in the Investment Plan. The catalogue sets out a comprehensive list of financial sources and instruments for adaptation and can therefore increase awareness of what is possible beyond your region has already deployed. It can also be used to evaluate the suitability of sources and instruments. In selecting different sources and instruments, there are a number of different considerations you should think about. These are shown below:

Table 4: Considerations in choosing sources and instruments.

Sources (Who provides the funding / finance)	Instruments (Way in which funding /finance is provided)
• Ability to offer different instruments; • Motivations for providing finance; • A region's capabilities to reach those sources; • The national, regional and local political context; • The terms under which that source provides the finance; • Region's economic and financial context, i.e. its ability to borrow funding or financing.	• Speed of implementation required; • Maturity of the private investment environment for the sector(s); • Monitoring and evaluation capacity needed; • Region's adaptation-related financial objectives; • Region's envisaged use(s) for the instrument; • Ability to raise funds to repay investments;

It is important to evaluate the potential sources or instruments in more detail. For example, European Regional Development Fund (ERDF) may initially be identified as a suitable instrument, but the budget may be oversubscribed or focused on other priorities, whilst European Grants may require resources to develop applications to access them.



Food for thought: While the best practice examples from the Pathways2Resilience catalogue are intended to illustrate additional possible financing options that could be transferable or replicated, their suitability is highly context-specific, depending on climate-related hazards in the region, the characteristics of a particular sector, and the local, national and EU policy. Furthermore, the role of each region may also differ in otherwise similar applications. Hence, these case studies are not comprehensive and are meant to serve as inspiration as the region explores their own financing models that address their specific needs.

**Task
2.1**
Identify current and desired sources and instruments


Before moving onto Task 2.2, have you:



Compiled a table of the existing sources and instruments the region is using to finance adaptation action.



Mapped the wider landscape of sources and instruments



Reviewed the strengths and weaknesses of sources and instruments through the Pathways2Resilience catalogue.


Supporting resources:
Guidance and supporting materials:

- [Pathways2Resilience \(2023\) Financial sources, instruments and best practice case studies to support financing regional adaptation](#) – Pathways2Resilience has built a catalogue of 57 sources and 78 financial instruments. The catalogue includes advantages and drawbacks of each, and key considerations for their use.
- [Regilience funding opportunities catalogue](#) – The toolkit produced as part of the REGILIENCE project provides an overview of the main 'off the shelf' European funding opportunities for adaptation.
- IDFC (2023) [Common Principles for Climate Change Adaptation Finance Tracking](#) – This guide sets out some common principles used by the Multilateral Development Banks (MDBs), including the EIB to track adaptation finance to reduce the risk of overreporting finance flow and to classify based on its relationship to development.
- Machiels, T., Srivastava, V., Whittaker, S., Carreira Silva, M., Jaunet, A., Porko Beugnet, S. & Simonet S. (2024). [Adaptation Investment Landscape](#). CLIMATEFIT (Deliverable 1.1). – This shows an overview of the financing landscape for the countries of each of the four leader territories - Slovenia, Czech Republic, Italy, and Romania

Task 2.1

Identify current and desired sources and instruments



Case study: Mapping regional sources and instruments in practice

Mapping sources and instruments can be challenging where there are a significant number of lower level municipalities. To address such challenges in London, London Councils issued a survey to all 32 London Boroughs and the City of London. This identified a wide range of sources and instruments, including betterment charges, and community municipal investments. It also identified new and innovative approaches, including the use of £1.7 million of on-street parking to support adaptation investment.

Figure 15: Extract of the London mapping of sources and instruments.

Source	Level	Type	Theme	Adaptation focus	Instrument	Name	Purpose	Total	Indicative for London
Defra/EA	national	Public	FPM	Yes	Grant	Flood and coastal erosion risk management (FCERM) Programme	Aims to reduce the risk of flooding and coastal erosion. Funds over 2,000 projects in England to support design and construction of flood defences, NPM, coastal protection works, and resilience measures for homes and infrastructure.	£2.4-£b	
Defra	national	Public	NPM, SWM, GI, habitats, biodiversity, water quality	Yes	Grant	Natural Flood Management Programme	Funds projects to reduce local flood risk using NPM, provide wider co-benefits, accelerate new and existing opportunities for NPM delivery and financing.	£25m	
Water companies	national	Private	biodiversity, GI, habitats, conservation, water quality	Indirect	Fees / water charges / Fines	Water Restoration Fund	Financed by fines and penalties paid by water companies for environmental damage. The fund supports projects that benefit waterways. Funding is allocated by region to ensure money is directed to areas where environmental damage has occurred.	£15m	
Thames RFOC	regional	Public	water infra, SWM	Yes	Grant	Thames RFOC Grant funding	TRFCC budget for flood defence grants in 2020/21 is £75.1m, invested across 433m SWM schemes in the current five-year capital programme, comprising of £30m from GSA, £25.1m and £19.9m in local levy (see below)	32m	
Thames water	regional	Private	water infra, SWM, SUDS, water quality, water supply	Yes	Budget expenditure - capital, revenue	Thames Water Asset Management Programme II (2020-2030)	Five-year plan outlining investments and strategies for improving water and wastewater services, addressing ageing infrastructure, climate change, and strives to deliver reliable, secure, and affordable services while improving the company's environmental footprint.	£1.8b	
FloodIns	regional	Private Sector - Insurers	FPM	Yes	Risk mitigation insurance (Risk Pooling)	FloodIns Insurance Scheme	Every insurer that offers home insurance in the UK must pay into the Flood Ins Scheme. This Levy raises £335m every year that is used by Flood Ins to cover the flood risks in home insurance policies.		
London Boroughs	local	Private Sector - Developers	EE, BE, adaptation, GI	Yes	Land Value - s106 payments	Section 106 payments (Local Authority)	Legal agreements between a Local Planning Authorities and developers. Mostly used to support transport infrastructure improvements, but has been used to fund environmental improvements.		
London Boroughs	local	Private Sector - Developers	EE, BE, GI	Indirect	Land Value Capture - s106 payments	Carbon Offset Funds	Local Planning Authorities collect carbon offset payments through section 106 agreements for carbon offsetting. Main purpose is to fund decarbonisation, but small amounts of funding has been used to fund green infrastructure. 2020 Monitoring Report indicates 5 Greening projects had been funded using offset payments.		
London Boroughs	local	Private Sector - Individuals, retail investors	GI, biodiversity, adaptation, SUDS, SWM	Yes	Debt - Bonds / Local Authority Security	Green Investment Funds	RAISE capital via the issuance of a Green Municipal Investment (GMI) to a private or public Green Projects. Several London Borough councils have established these. They mostly fund mitigation measures, but several Councils have used this to fund adaptation and green infrastructure.	£3.5m per fund	

It can also be helpful to understand the wider context for adaptation funding and finance. In Pathways2Resilience's sister project, ClimateFIT, the consortium worked with country agencies to develop a map of the most important stakeholders for adaptation finance. The map included public and private sector stakeholders and a description of the instruments and models being used to fund and finance adaptation, alongside a maturity assessment. This was undertaken for four leader territories – Alba Lulia (Romania), Brescia (Italy) Flanders (Belgium) and Strasbourg (France) with less in-depth results for territories in Portugal, Spain, Czech Republic and Slovenia.

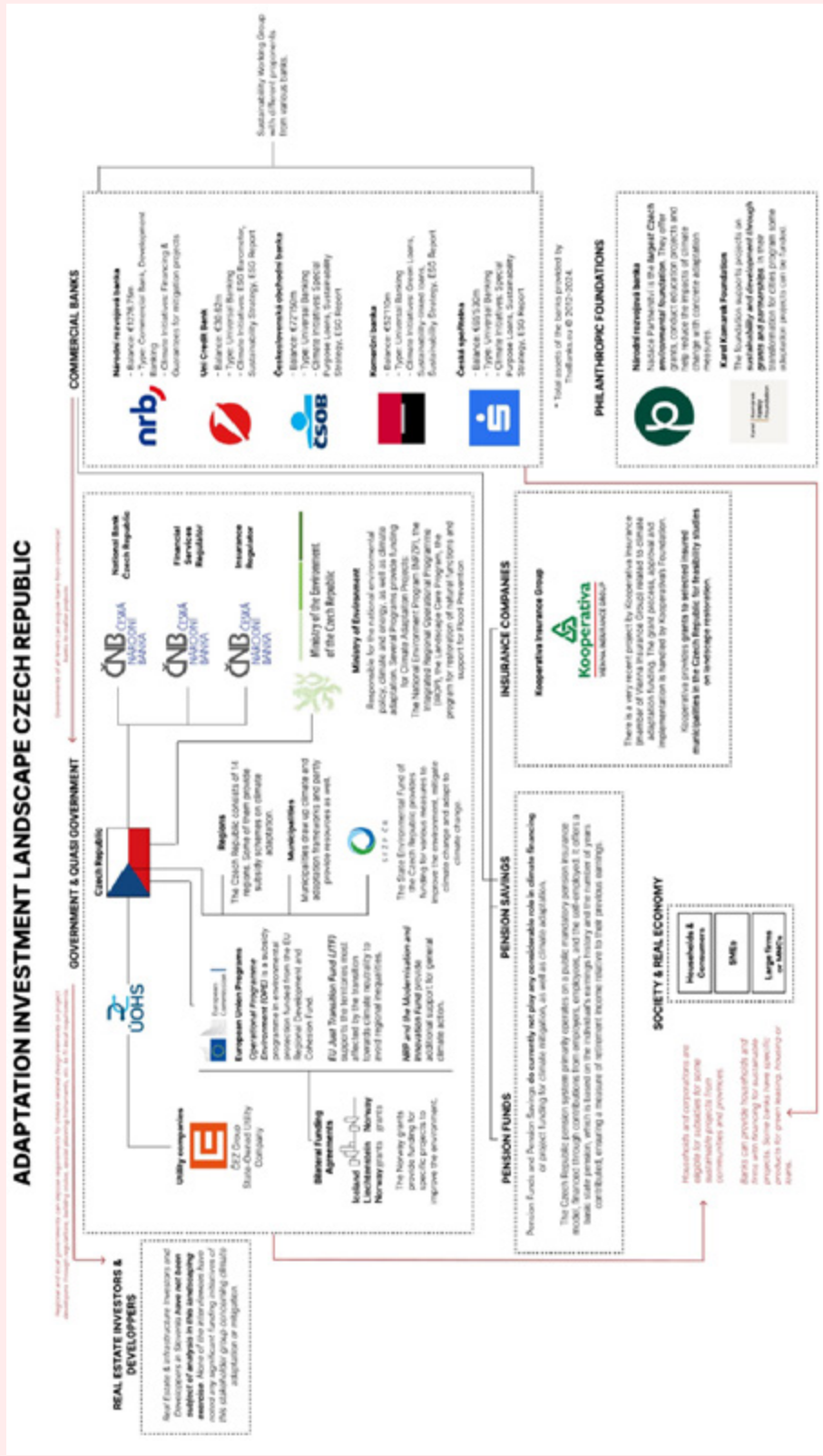
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Task
2.1

Identify current and desired sources and instruments

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Figure 16. Investment landscape of Czech Republic. Source: Machiels et al., 2023.



**Task
2.1**

Identify current and desired sources and instruments



Case Study: Catalan Climate Fund: Using carbon taxes for mitigation and adaptation

“The Catalan Climate Fund is one of the Government of Catalonia’s key instruments to drive a just and inclusive climate transition, financing local actions, research, businesses, and citizen initiatives that strengthen social and environmental resilience.”, Sonsoles Letang, Director General for Climate Change and Environmental Quality, Government of Catalonia

Introduction

The 2017 [Catalan Climate Change Law](#) led to the creation of the Climate Fund. The fund is endowed with 50% of revenues from the tax on CO₂ emissions from motor vehicles and 20% of the revenue from the tax on installations that impact the environment. These taxes aim to finance mitigation and adaptation actions within the framework of public climate change policies. The Climate Fund is a public fund, without legal personality, attached to the department responsible for climate change. Its main objective is to implement policies and actions aimed at mitigating and adapting to climate change in different economic sectors and natural systems, supporting renewable energies and energy efficiency, energy efficient housing, sustainable mobility, efficiency and water saving, public protection against the increased risk of extreme weather events, sustainable forest management rise awareness, and information and education on climate change.

Core information

The new law was expected to raise additional public incomes every year. Since the launch of the Catalan Climate Fund in 2021, projects amounting to more than €500M have been financed. These projects cover both adaptation and mitigation for local authorities (town councils), research centres, small and medium-sized enterprises, citizen participation, and environmental organisations. Creating the climate fund not only facilitates the implementation of actions but also simplifies the integration of GHG emission reduction and climate risk vulnerability reduction objectives into the government’s sectoral policies and programming. The Fund also encourages innovation and research in low-carbon technologies, promotes climate-resilient infrastructure and sustainable urban planning and gives support to local authorities to implement climate action strategies. A total of 81 projects have been funded, distributed as follows from 2021 to 2025:

Research and innovation field: 35 projects

Business sector: 6 projects

Local authorities field: 12 projects

Citizen participation field: 8 projects

Singular projects: 20

Currently, 38 projects are still ongoing, and 3 new projects will begin in 2026. The total commitment from their inception to completion amounts to €245 million. In addition, the total executed from 2021 to 2025 (including 2025) amounts to €211 million, with a total of 35 projects completed.

Key takeaways

- The primary benefits are the facilitation of mitigation and adaptation actions at the local government and small and medium enterprise levels.
- The next steps include incorporating the remaining two challenges (large valleys and economic activities) into the climate fund.
- By creating similar funds and incorporating dedicated taxes, regions can facilitate local climate actions, integrate climate objectives into sectoral policies, and address funding challenges more effectively.

**Task
2.1**
Identify current and desired sources and instruments

Case Study: Paraná Ecological Fiscal Transfers
Introduction

In 1991, the State of Paraná, Brazil, introduced the ICMS Ecológico, the world's first ecological fiscal transfer mechanism. This innovative policy linked a portion of state tax revenues (ICMS) to ecological performance, redistributing resources to municipalities based on environmental criteria. By compensating local governments for restrictions imposed by protected areas and water supply zones, while also incentivizing the creation and expansion of conservation initiatives, Paraná established a pioneering framework that has since been replicated across Brazil and recognized internationally as one of Latin America's most influential Payment for Environmental Services (PES) mechanisms.

Core Information

The system is grounded in Article 158 of Brazil's Federal Constitution, which allows states to legislate criteria for up to 25% of municipal ICMS revenue shares. Paraná enacted Complementary Law No. 59/91 (updated in 2022 by Law No. 249/22), earmarking 5% of transfers for ecological purposes (2.5% for hosting protected areas, and 2.5% for safeguarding water sources used by other municipalities).

The ICMS Ecológico reflects the "Protector-Receiver Principle," complementing the traditional "Polluter Pays Principle." Municipalities that conserve ecosystems or provide clean water are rewarded, while those neglecting their responsibilities miss out. This dual role combines fairness—offsetting economic restrictions from conservation measures—with incentives to expand and strengthen protected areas.

Management is coordinated by the Instituto Água e Terra (IAT), Paraná's environmental authority. Municipalities receive financial compensation for public water source areas, indigenous territories, and protected areas, which also serves as an economic incentive for their environmental policies. Protected areas are verified annually through inspections and standardized evaluations. Transparent procedures—supported by dashboards, georeferencing, and simulation tools—enable municipalities to anticipate financial flows and strengthen trust in the mechanism.

The program has expanded dramatically. Transfers grew from R\$44.7 million in 1992 to over R\$511 million in 2022. By 2024, disbursements reached R\$635 million, benefiting 269 municipalities. The program's total disbursement reached R\$10 billion, making it one of the largest environmental payment policies.

The ecological and socioeconomic impacts have been substantial. As the program started, in 1991, the amount of municipal protected areas was just 11,329.76 hectares. Today (2025) Paraná's total protected area network covers 2.93 million* hectares, or 14.7% of state territory, reinforcing biodiversity corridors in the Atlantic Forest, one of the world's most threatened ecosystems.

Socioeconomically, the ICMS Ecológico has become a lifeline for many municipalities. In some cases, revenues may account for over 80% of total state transfers to municipalities, representing, in these cases, their primary source of funding. The flexibility of these resources—usable for conservation, education, health, or infrastructure—has been key to generating political support and sustaining the mechanism.

Key Takeaways

- **Dual Role:** Balances compensation with incentives, ensuring fairness while driving conservation.
- **Scale:** Annual transfers exceed half a billion reais, providing a stable, predictable revenue stream.
- **Measurable Impact:** 4,500% increase in municipal protected areas between 1991 and 2022, strengthening Atlantic Forest conservation.
- **Flexibility:** Supports both conservation and broader municipal needs, fostering political buy-in.
- **Transparency:** Innovative monitoring tools have built trust and improved planning capacity.
- **Replication:** Adopted by 16 other Brazilian states, Paraná's model demonstrates how constitutional fiscal frameworks can mobilize finance for biodiversity and climate goals.

Sources

[Regions4 \(2023\) Ecological ICMS: Paraná State's Environmental Tax Revenue Sharing Program](#)

Task 2.2 Identify finance barriers

RRJ task(s)	Climate Resilience Investment Plan Template Section	Effort	Importance
2.2 Explore possible futures 2.3 Co create a shared vision, 2.4 Develop a theory of change.	2.2, 2.3, 2.4	Medium	Essential

What is this task about?

This task identifies barriers to scaling and diversifying financing of adaptation in your region. This could relate to addressing challenges with existing funding and financing approaches, as well as those associated with utilising additional sources or instruments you could be interested in.

What are key inputs for this task?

The key inputs for this are:

- The region's own catalogue of existing sources and instruments from Task 2.1.
- Knowledge of existing challenges your region has in funding and financing adaptation
- Pathways2Resilience's Deliverable 5.1 on the common barriers to adaptation finance.
- Pathways2Resilience's D5.2 - Catalogue of Sources and Instruments, for inspiration on additional sources and instruments, and their benefits, drawbacks and regional suitability.

Regions may also wish to draw on the possible futures, emerging shared vision and Theory of Change in Phase 2 of the Regional Resilience Journey as these may include indications of the mix of sources or financing arrangements which might need to be available in future.

What are the expected outputs?

A table listing the challenges or barriers your region faces in funding and financing adaptation, including where relevant, the associated sources and instruments.

It could also set out which sources and/or instruments will be excluded from consideration in the Investment Plan. Depending on the ordering of tasks, regions may wish to use the strategic financing options as an input into the development of the Theory of Change in RRJ Task 2.3 and Task 2.4.

**Task
2.2**
Identify finance barriers
Why is it important?

Addressing barriers early on: Considering barriers early ensures you can take action whilst preparing your pathways and action plan to make them viable options for financing. For example, if your region has limited powers to raise taxes or impose regulations to require private sector adaptation, you can engage with the national government whilst you develop your Investment Plan to seek such powers. Equally, if persistent challenges include lack of project development finance, you can explore accessing a technical assistance facility. This process also helps understand the extent to which some of these challenges overlap with wider regional development challenges.

Constraining or expanding choices of sources and instruments: preliminary evaluation of barriers and associated sources can identify potential political, legal, or ethical reasons for using/not using certain sources or instruments, as well as early entry points to address them (e.g. political engagement or existing approaches in other sectors). Some barriers may be able to be removed (e.g. a lack of credit rating), whilst others may mean you will need to narrow the choice of sources and instruments (e.g. if there is political opposition to particular sources or borrowing).

Setting direction and informing finance strategies. This assessment gives you a clearer picture of the region's potential to mobilise certain sources or instruments, which can then be used to inform the development of adaptation pathways and investment strategies in Phase 3. It also signals the type of financing approaches the region is seeking to deploy to regional stakeholders, allowing them time to prepare and respond.

What should you focus on the first time round?

In the early stages, focus on addressing the key barriers associated with using existing approaches, as well as identifying a small number of key additional sources or instruments that could help address priority climate risks. You should also take stock of whether there are any "obvious" strategic options that may have been considered by the region before or are currently being explored. For example, crowdfunding may have been used in other policy areas due to its ability to connect citizens with real outcomes. While we recommended developing specific ideas to initiate early preparation work, it is also important to keep an open mind and consider options once you begin the work to develop adaptation pathways and actions. In future iterations you may wish to consider sources for particular sectors or conduct early engagement to consider feasibility.

How can you complete it?

Start by identifying the barriers to financing overall, including any associated with particular sources and instruments you currently use or plan to use in your Investment Plan. Barriers can be grouped into a number of types: Behavioural and Capability; Financial, Economic and market failures; Technical and Data; Political, Institutional and Governance; and Knowledge and Awareness. For each barrier, consider its type, importance and strength, as well as the degree of control you have over that barrier, as well as any relevant sectors or stakeholders, as well as any particular sources and instruments it relates to. It should also be linked to any particular sources or instruments, either in use or identified in Task 2.1.

Task 2.2

Identify finance barriers

During this process, it is important to engage the region's local stakeholders who will be key to addressing barriers, developing the desired instruments and financing the adaptation actions. This is the crux of the "Building a shared vision" step in the RRJ. As a minimum you should draw on the possible futures, emerging shared vision and Theory of Change in Phase 2 of the Regional Resilience Journey to inform choices. However, you may also wish to involve potential sources as stakeholders directly in the visioning process to raise their awareness of what the region is trying to achieve, where its challenges are and where the opportunities for them are.

Table 5: Illustrative barriers to mobilising adaptation finance.

Barrier	Type	Associated sources and/or instruments	Description	Importance (H /M/L)	Strength of barrier (H/M/L)	Degree of control	Sector and stakeholders involved
Limited ability to develop projects due to high information needs	Financial	All		High	High	High	Project proposers
Limited inclusion of adaptation in economic development funding	Policy		The region has not mainstreamed adaptation into many of its wider funding streams for regional development	High	High	High	Regional economic development teams
Inability to levy taxes	Legal	Households/ Businesses via Taxes	The region does not have legal powers to introduce new taxes	M	M	Low	National Government
Lack of credit rating	Legal	Capital Markets - Bonds	Lack of credit rating prevents access to debt markets	L	L	High	Regional government
Lack of green financing framework	Policy	Capital Markets - Bonds, Crowdfunding	Region's lack of framework means that funders would not have confidence in how the region would spend money	H	M	High	Regional Government
Private sector contributions to flood resilience	Policy	Businesses via Regulation	Private sector is not required to contribute to the costs of flood defences	L	M	Low	Chamber of Commerce, Real Estate owners and developers, national government

**Task
2.2**
Identify finance barriers

In addition to developing actions to address specific barriers, regions should also consider whether synergies with mitigation financing, or more strategic use of insurance could help enable further financing. Some mitigation options can include significant financial savings or revenue streams that could be used to support adaptation efforts. Depending on the size of benefits, these could include early efforts such as feasibility studies, or the financing of the measures themselves. Similarly, insurance can often be deployed alongside other financing approaches to reduce project risk, but it can also be used in partnership with physical adaptation interventions to make adaptation options viable – for example a flood defence project with an insurance scheme to support coastal communities.



Before moving onto Task 2.3, have you:



Identified the barriers that make it challenging to use existing or desired sources and instruments.



Reviewed the Pathways2Resilience catalogue to identify additional sources and instruments and any associated barriers.


Supporting resources:
Guidance and supporting materials
Barriers to financing adaptation

- Frontier Economics and Watkiss, P. (2022) [Barriers to Financing Adaptation Actions in the UK](#) – This report sets out the range of barriers to financing adaptation projects.
- Moser et al. (2019) [Adaptation finance archetypes: local governments' persistent challenges of funding adaptation to climate change and ways to overcome them](#) – Provides an overview of the typical types of practical barriers that regions can face in funding and financing adaptation projects.
- Koundouri, P., Dellis, K., Landis, C. Plataniotis, A and Zisiadou, A (2024) [D5.1 – Synthesis of barriers and solutions for Adaptation Finance](#)

Task
2.2

Identify finance barriers



Supporting resources:

Sources and instruments

- [Pathways2Resilience \(2023\) Financial sources, instruments and best practice case studies to support financing regional adaptation](#) – Pathways2Resilience has built a catalogue of 57 sources and 78 financial instruments. The catalogue includes advantages and drawbacks of each, and key considerations for their use.
- [Regilience funding opportunities catalogue](#) – The toolkit produced as part of the REGILIENCE project provides an overview of the main ‘off the shelf’ European funding opportunities for adaptation.
- [ClimateFIT – 20 best practices](#) - ClimateFIT performed in-depth research of 20 international best practices of innovative adaptation funding and financing solutions. Each case offers an inspirational example of successfully raising financial resources for climate adaptation. The project analysed the local context, the governance and organisational structure, the business model and financial model, successes and limitations, and conditions for transferability.
- IISD (2021) [Innovative Financial Instruments for Climate Change Adaptation](#) - This guide includes a wide range of innovative instruments that can be used to fund or finance adaptation.



Olot, Catalonia



Olot, Catalonia

**Task
2.2**
Identify finance barriers

Case study: Catalan Climate Fund: Using new taxes to fund mitigation and adaptation activities, Catalonia

"The climate fund is one of the instruments of the Government of Catalonia for the financing of public policies on climate change in the field of local media, research, business, citizen participation, and environmental organisations.", Mireia Boya, Director General for Climate Change and Environmental Quality, Government of Catalonia

Introduction

The approval of the Catalan Climate Change Law in 2017 led to the creation of three new taxes aimed at financing mitigation and adaptation actions within the framework of public climate change policies under the Catalan Climate Fund. This fund is supported beyond the general budget of the Catalan government by these new taxes on carbon dioxide emissions from tourists, motorbikes, commercial vans, large vans, and approximately 1,400 economic activities in Catalonia.

The successful deployment of the Catalan climate change law requires ensuring the implementation of the commitments made within this regulatory framework. The insufficiency of necessary funding from the Spanish government means that Catalonia continues as an autonomous community with most of its own taxes. This necessity prompted the establishment of the Catalan Climate Fund to address these funding challenges.

Core information

The new law was expected to raise an additional €50m a year. Since the launch of the Catalan Climate Fund in 2021, projects amounting to more than 300M€ have been financed. These projects cover both adaptation and mitigation of climate change for local authorities (town councils), research centres, small and medium-sized enterprises, citizen participation, and environmental organisations. Creating the climate fund not only facilitates the implementation of actions but also simplifies the integration of GHG emission reduction and climate risk vulnerability reduction objectives into the government's sectoral policies and programming.

Key takeaways

- The primary benefits are the facilitation of mitigation and adaptation actions at the local government and small and medium enterprise levels. Without funding from the fund, implementing these actions would be difficult.
- The next steps include incorporating the remaining two challenges (large valleys and economic activities) into the climate fund.
- Additionally, the goal is to expand the financing lines to enable the full deployment of the Catalan climate change law.
- The Catalan Climate Fund demonstrates how new taxes on emissions and various economic activities can generate significant funding for climate projects. By creating similar funds and incorporating dedicated taxes, regions can facilitate local climate actions, integrate climate objectives into sectoral policies, and address funding challenges more effectively.

Source: [Catalan Climate Fund \(Available in Spanish and Catalan\)](#)

Task 2.3 Improve access to finance

RRJ tasks(s)	Climate Resilience Investment Plan Template Section	Effort	Importance
2.2 Explore possible futures, 2.3 Cocreate a shared vision, 2.4 Develop a theory of change	2.4	Medium	Optional

What is this task about?

This Task is about identifying and implementing an action plan to address barriers to mobilising finance, alongside the main development of the Investment Plan.

What are key inputs for this task?

The main input is the set of additional sources and instruments and barriers assessment in Tasks 2.1 and 2.2. You may also wish to draw on the possible futures, emerging shared vision and Theory of Change in Phase 2 of the RRJ.

Why is it important?

Increasing sources and instruments available to use in Investment Plan development. By identifying and implementing actions to expand the options for funding and financing as you develop the Investment Plan, you will have a wider set of funding or financing options available when it comes to planning how to finance your pathways and near term actions in Phases 3 and 4.

What should you focus on the first time round?

Improving the enabling conditions for adaptation finance is a long-term challenge. Therefore, the priority should be to focus on addressing barriers related to the most urgent risks, sectors or places. Another priority should be where simple interventions could unlock significant additional finance

What are the expected outputs?

The output of this Task is a set of actions for your region to implement as you develop the Investment Plan. The actions should detail how you will address any barriers to scaling existing approaches and the use of additional sources and instruments and the broader financing environment. These additional actions can also inform or revise the Theory of Change in RRJ Task 2.4, and as an input into the options longlisting in Task 3.1.

flows, to make the most efficient use of public funding. For example, in Hamburg, the use of €1.5m as an incentive for businesses to implement green roofs mobilised €13.5 million (ClimateADAPT, 2022). You may also wish to consider which areas have the likelihood of making realistic and substantial progress.

How can you complete it?

Take the barriers to using extra sources and instruments identified in Task 2.2 and identify a range of actions that can be taken forward to address them, along with responsibilities and timelines. An example is shown below:

**Task
2.3**
Improve access to finance
Table 6: Example action plan to address barriers to sources and instruments..

Barrier name	Description	Type	Actions	Who?	By when?
Inability to levy taxes	The region does not have legal powers to introduce new taxes	Legal	Lobby national government for new powers	Political representative	Ongoing
Lack of credit rating	Lack of credit rating prevents access to debt markets	Legal	Obtain credit rating for region	Finance team	M12
Lack of green financing framework	Region's lack of framework means that funders would not have confidence in how the region would spend money	Policy	Scope resource requirements for developing a green financing framework	Adaptation team	M5
		Policy	Engage with finance team to consider appetite for such work	Adaptation team	M3
Private sector contributions to flood resilience	Private sector is not required to contribute to the costs of flood defences	Legal	Develop proposals for a national new tax credit for contributions to flood defence.	Head of Economic Development, Flood Risk Management Team	M15
Lack of project development finance	Limited availability of project development funding to allow development of financing approaches	Financial	Consider reprioritising structural funds for Technical Assistance	Head of Economic Development,	M3
			Engage with EIB on potential for TA with a region's portfolio.	Climate change team	
Risk mitigation finance	Lack of concessional finance or guarantees available for crowding in private sector	Financial	Engage with EIB / EBRD on potential for a framework loan to help in key sectors	Director of finance, climate change team	M12

Where it is not possible to identify actions to address barriers, you may wish to revise the list of desired sources and instruments identified in Task 2.1.

Like the previous task, actions could be developed through expert review, or through a stakeholder workshop involving finance players from across the region. You should then take forward the actions in parallel to this process. Where it is not possible for actions to be pursued during plan development, they should be used as an input for the development of investment strategies in Phase 3 and the investment plan in Phase 4, as early thinking to improve the enabling conditions during delivery of the Investment Plan.



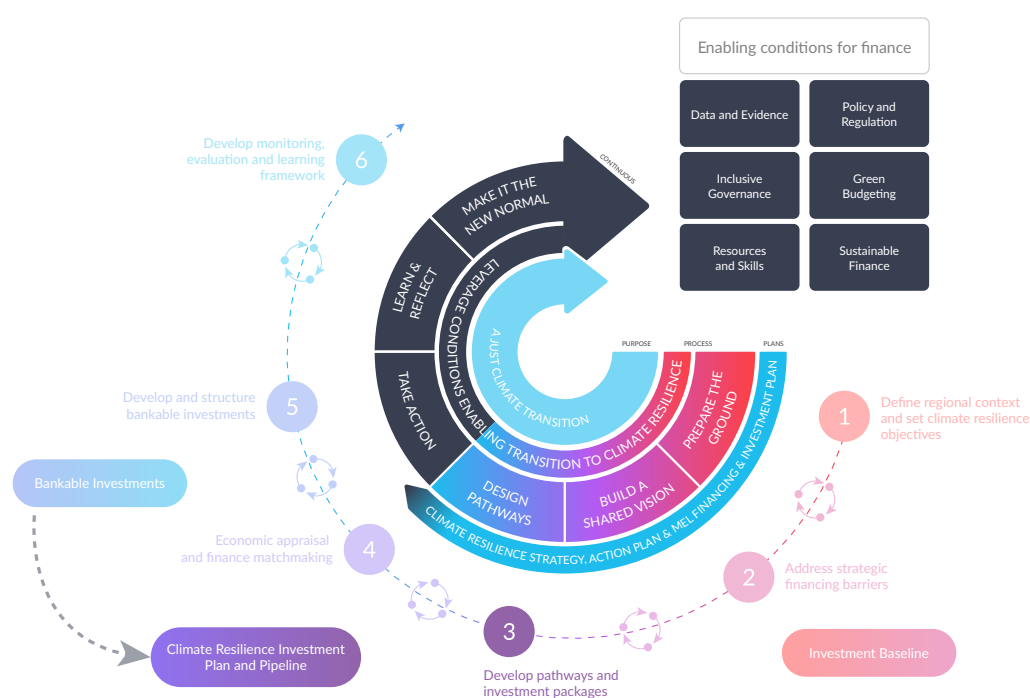
Before moving onto Phase 3 have you:



Compiled an action plan on how to diversify your adaptation-related financial sources and instruments, including timelines, and a clear allocation of roles and responsibilities.

Phase 3: Develop pathways and investment packages

The aim of this phase is to use economic and financial thinking to develop adaptation pathways, and associated financing strategies. This involves evaluating the economic merits (alongside other key aspects described in the RRJ guidance) of a longlist of adaptation options, before prioritising and sequencing them into pathways with short-term, medium-term and long-term actions, and turning them into packages for investment. These tasks links heavily with RRJ.



Links to the Regional Resilience Journey:

AIC tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
Task 3.1: Longlist adaptation options and assess economic benefits	The Theory of Change (RRJ Task 2.4) should help frame the process. This task should be undertaken in parallel with RRJ Task 3.1. This means you should only have a single set of adaptation options.	The outputs of this task should be used to inform the MCA scoring characteristic of financial and economic viability in RRJ Task 3.1.2 (assess effectiveness of options).
Task 3.2: Prioritise and sequence adaptation options	The list of agreed options from RRJ Task 3.1.2. (assess effectiveness)	The final sequencing of pathways can be used for evaluation in RRJ Task 3.2.2.
Task 3.3: Turn pathways into investment packages	N/A	N/A

Task 3.1 Longlist adaptation options and assess benefits

RRJ tasks(s)	CRIP Template Section	Effort	Importance
Task 3.1 Identify and assess options	3.1	Medium to high, depending on the complexity of the region's needs and the availability of data.	Essential

What is this Task about?

This Task is about developing a long list of adaptation options and appraising their potential costs and benefits. This guidance focuses specifically on the economic and financial dimensions of this activity. This should be undertaken alongside broader identification and assessment of adaptation options undertaken in Tasks 3.1.1 and Task 3.1.2. of the RRJ using the technique of Multi-Criteria Analysis (MCA).

What are key inputs for this task?

The Theory of Change produced in RRJ Task 2.4 will help frame the process, along with the rationale and objectives set in Task 1.3. The range of climate risks identified and assessed in Task 1.3.1 of the RRJ are also relevant.

What are the expected outputs?

An assessment of the overall economic and financial viability of a longlist of adaptation options to be considered alongside broader criteria in RRJ Task 3.2.1 (assess effectiveness of options).

Task 3.1

Longlist adaptation options and assess benefits

Why is it important?

Optimisation – Different options to achieve adaptation objectives have different benefits and costs. Identifying and assessing these trade-offs early before more detailed economic and financial appraisal helps ensure resources are targeted effectively towards the most promising pathways and options. It also helps avoid biases towards certain types of solutions.

Improving financing prospects – Identifying and evaluating benefits and co-benefits is a necessary step to identify beneficiaries and therefore possible future sources of funding or finance. This is important for the development of detailed financing approaches for in the action plan in Task 4.2.

What should you focus on the first time round?

Focus on identifying and evaluating the major costs and benefits delivered by the various options under consideration for particular sectors or risks. At this stage, you are not doing this in lots of detail, but to get a sense of the major benefits. Future iterations could identify and quantify additional, smaller benefits, which would further improve the financing potential.

How can you complete it?

In line with RRJ Task 3.1, start by agreeing a set of key objectives for each potential pathway you want to develop (e.g. for a hazard or sector). You should then identify a list of all the different adaptation options (e.g., flood risk management, climate-smart agriculture, adaptation of buildings for overheating) that could be used to meet them. The choice of options should also be framed by the Theory of Change (RRJ Task 2.4). For each potential option, map the climate risks that the range of options address (using the risk assessment in RRJ Task 1.3.1 assess climate risks).

You should then identify costs of the measure as well as associated adaptation benefits and co-benefits. This should be considered from an economic perspective, rather than financial to ensure the widest set of benefits can be captured (see the explainer in Task 4.1 on economic and financial appraisal).



Joshua Kettle | Unsplash

**Task
3.1**
Longlist adaptation options and assess benefits

Adaptation benefits could include reduced levels of exposure or vulnerability to key hazards for populations or sectors. Co benefits are the wider benefits that arise from implementing adaptation actions such as enhanced biodiversity, improved public health, or increased economic resilience. Both adaptation benefits and co-benefits can be tangible (i.e. measurable), and intangible (less able to be quantified). Whilst the specific benefits and co-benefits depends on the sector and nature of pathway, a table of indicative benefits that flow from investments in climate resilience are provided below:

Table 7: Examples of direct, indirect, tangible and intangible benefits of adaptation. Source: Climate-KIC Australia, 2021.

	Direct (Adaptation benefits)	Indirect (Co-benefits)
Tangible	Direct Tangible Benefits: These are the immediate and measurable advantages resulting directly from climate resilience investment: • Reduced infrastructure damage and maintenance costs due to better resilience to extreme weather events • Increased agricultural productivity and food security through resilient farming practices • Lower insurance premiums for businesses and homeowners in resilient communities	Indirect Tangible Benefits: These are the secondary positive outcomes that arise as a result of climate resilience investment but may not be immediately apparent: • Boosted local economy through job creation and increased investment in resilient infrastructure • Enhanced public health outcomes due to improved air and water quality resulting from resilient urban planning • Greater energy efficiency and reduced carbon emissions from investments in renewable energy and green building practices
Intangible	Direct Intangible Benefits: These are immediate but less quantifiable advantages of climate-resilient investment: • Enhanced community cohesion and social capital through collaborative resilience-building efforts • Improved quality of life and well-being for residents in climate-resilient cities and neighbourhoods • Enhanced reputation and brand value for businesses that prioritise climate resilience and sustainability	Indirect Intangible Benefits: These are longer term or less tangible positive outcomes: • Preserved cultural heritage and ecosystem services through sustainable land management and conservation practices • Increased social equity and environmental justice through inclusive and participatory resilience planning processes • Enhanced adaptive capacity and innovation in response to future climate challenges

Task 3.1

Longlist adaptation options and assess benefits

An example assessment for packages in a flood risk reduction pathway is shown below:

Table 8: Indicative economic and financial benefits and overall feasibility of a pathway to reduce surface water flood risks.

Options	Climate Risks	Costs	Benefit	Type of benefit (adaptation benefit / co benefit)	Size of benefit (Quantified or H/M/L)	Economic and financial viability
Nature-based solutions for the built environment	Damage to property from Surface water flood risk	M	Flood risk reduction	Adaptation benefit	M	M
			Reduced insurance premiums / claims	Adaptation benefit	L	
			Reduced maintenance costs	Co-benefit	L	
	Heatwaves and high temperatures		Productivity benefits – reduced temperature	Adaptation benefit	L	
	N/A		Improved air quality	Co-benefit	L	
			Increase in rental yields	Co-benefit	M	
			Increase in property values	Co-benefit	M	
			Carbon Storage	Co-benefit	M	
			Reduced water treatment costs	Co-benefit	M	
			Improved biodiversity	Co-benefit	L	
Adaptive management	N/A	M	Improved decision making	Adaptation benefit	M	M
			Improved public sector coordination and decision-making	Co-benefit	L	
Climate Proof Highways	Disruption to transport from Surface Water	H	Reduced repair and maintenance costs	Adaptation benefit	M	H
	Higher temperatures / heatwaves		Reduced economic disruption	Adaptation benefit	H	
Early Warning System Extension	Flood risk to homeowners	M	Reduced damage to property	Adaptation benefit	H	M
			Avoided physical and mental health impacts	Adaptation benefit	M	
			Reduced insurance premiums / avoided costs	Adaptation benefit	L	

**Task
3.1**
Longlist adaptation options and assess benefits

Depending on resources and information, you may be able to undertake quantitative analysis to inform this (e.g. a high level options appraisal in your region). If you do not have dedicated resource, information could be taken from early-stage project feasibility studies, from engagement with relevant stakeholders (such as environmental agencies or development banks), or from a review of similar work undertaken elsewhere (e.g. in other regions). You may also wish to focus solely on the relative size of benefits based on the proposed scope. Alternatively, you may choose to define some quantitative criteria. (e.g. a reduction in damages or increases in value). Estimates should be confirmed with relevant stakeholders for accuracy or assumptions.

The assessment of costs and benefits should be used to score the 'Economic and Financial viability' criteria in the wider assessment and selection of options undertaken in Task 3.1.2 of the RRJ. This is shown in green below:

Table 9: Multi-criteria evaluation of adaptation options. Economic and financial appraisal shown in purple.

	Key Criteria (indicator)	Adaptation Option 1	Adaptation Option 2	Adaptation Option n
Impacts	Adaptation effectiveness (i.e. risk reduction)	High/ Medium/ Low	High/ Medium/ Low	High/ Medium/ Low
	Potential to deliver integrated impacts (i.e. co-benefits)	High/ Moderate/ Low	High/ Moderate/ Low	High/ Moderate/ Low
Adaptivity	Robustness (future proof)	High/ Medium/ Low	High/ Medium/ Low	High/ Medium/ Low
	Flexibility (adaptive)	High/ Medium/ Low	High/ Medium/ Low	High/ Medium/ Low
	Potential regret (risk of maladaptation)	Low Risk/ Moderate Risk/ High Risk	Low Risk/ Moderate Risk/ High Risk	Low Risk/ Moderate Risk/ High Risk

Task 3.1

Longlist adaptation options and assess benefits

	Key Criteria (indicator)	Adaptation Option 1	Adaptation Option 2	Adaptation Option n
Implementation Feasibility	Technical Feasibility (technical readiness)	Ready/ Needs Adjustment/ Not Ready	Ready/ Needs Adjustment/ Not Ready	Ready/ Needs Adjustment/ Not Ready
	Economic & Financial viability (from AIC Task 3.1)	Favourable/ Neutral/ Unfavourable	Favourable/ Neutral/ Unfavourable	Favourable/ Neutral/ Unfavourable
	Relevance (stakeholder priority)	Essential/ Important/ Non-Essential	Essential/ Important/ Non-Essential	Essential/ Important/ Non-Essential
	Local Suitability (community support)	Strong/ Moderate/ Weak/ Contested	Strong/ Moderate/ Weak/ Contested	Strong/ Moderate/ Weak/ Contested
	Policy Relevance (coherence, institutional support)	Aligned/ Partially Aligned/ Not Aligned	Aligned/ Partially Aligned/ Not Aligned	Aligned/ Partially Aligned/ Not Aligned
	Regional capabilities (local skills and resources)	Sufficient/ Needs development/ Not Ready	Sufficient/ Needs development/ Not Ready	Sufficient/ Needs development/ Not Ready
Transitional qualities	Facilitates Just Resilience (equity of impacts)	Positive/ Neutral/ Negative	Positive/ Neutral/ Negative	Positive/ Neutral/ Negative
	Transformative Power (potential to stimulate systemic change)	High/ Moderate/ Low	High/ Moderate/ Low	High/ Moderate/ Low

In addition to the characteristics shown above, you may wish to include other economic or financial criteria within your MCA. These could include capacity to trigger private sector investment, employment effects, effects on fiscal sustainability, or spillover effects.

You can undertake the appraisal in-house or through use of experts or consultants, though it assumes a certain level of knowledge about the local context. You can use workshops and participatory sessions to involve stakeholders in identifying, evaluating, and prioritising adaptation options. This can involve a range of inputs, including selecting appraisal criteria, scoring options or to validate scores. It is important to facilitate open dialogue to gather diverse perspectives, build consensus, and ensure community buy-in.

Task 3.1

Longlist adaptation options and assess benefits



Before moving onto Task 3.2 have you:

- ☐ Clearly defined a long list of adaptation options.
- ☐ Identified the indicative costs of options and types and sizes of economic and financial benefits they offer.
- ☐ Evaluated the options based on their initial economic and financial viability.



Supporting resources:

MCA methods

- MEDIATION (2013) [Decision Support Methods for Climate Change Adaptation](#) - This guide summarises decision support tools, for adaptation. It covers traditional decision support tools (cost-benefit analysis, cost-effectiveness analysis and multi-criteria analysis) as well as alternative approaches that more fully capture uncertainty (real options analysis, robust decision making, portfolio analysis and iterative risk (adaptive) management, adaptation turning points and analytic hierarchy process).
- Van Ierland, E.C., de Bruin, K. and Watkiss, P. (2013). [Multi-Criteria Analysis: Decision Support Methods for Adaptation](#), MEDIATION Project, Briefing Note 6. – Provides a more detailed note on the use of MCA.
- Lukat, E., Rouillard, J., Lago, M., Tröltzsch, J. (2016). [Use of nonmonetary metrics/weights in adaptation decision-making](#). In Rouillard, J., Tröltzsch, J., Lago, M., Markandya, A., Sainz de Murieta, E., Galarraga, I., Distributional objectives and nonmonetary metrics. FP7 Econadapt project, Deliverable 2.3. - This provides an overview of different non-monetary metrics for use in MCA.

**Task
3.1**

Longlist adaptation options and assess benefits

Adaptation options

- [Climate ADAPT Adaptation Options Database](#) – Catalogue of 58 different adaptation options by sector, hazard and Key Type Measure.
- Jenkins, K., Ford, A., Robson, C and Nicholls, R. J (2022) [Identifying adaptation ‘on the ground’; Development of a UK adaptation Inventory](#) – List of typical measures used in a UK context
- Pathways2Resilience (2024) [Catalogue of Innovative and Transformative Adaptation Options](#) – List of 30 different transformative and innovative adaptation options developed as part of the Pathways2Resilience programme.
- [RESIN project Adaptation Options library](#) – This library synthesises information on the performance of adaptation measures related to heat, pluvial, fluvial and coastal floods and drought for urban contexts. Note just click ‘login’ to access the options.

Case Studies and Examples

- Climate Ready Clyde (2021) Glasgow City Region Climate Adaptation Strategy and Action Plan: Annex 4: [Glasgow City Region Multi-Criteria Analysis of potential interventions.](#)
- Griffith University and Edwards, I. (2019) [Multi-criteria analysis of climate change adaptation options](#) – An MCA conducted to identify options for adaptation to coastal flood risk and change for the Whitsunday Regional Council, Australia.
- de Bruin, K., Dellink, R.B., Ruijs, A. *et al.* (2009) [Adapting to climate change in The Netherlands: an inventory of climate adaptation options and ranking of alternatives.](#) – An overview of options produced for the Netherlands.

Task 3.2 Prioritise and sequence adaptation options into pathways

RRJ tasks(s)	Climate Resilience Investment Plan Template Section	Effort	Importance
Task 3.1, Task 3.2 Co-design a portfolio of interventions	3.1	High	Essential but advanced

What is this task about?

This Task prioritises and sequences the preferred adaptation options identified in Task 3.1.2 of the RRJ (assess effectiveness of options) into sets of adaptation pathways with short, medium and long-term actions. Like Task 3.1, this guidance focuses on the financial and economic aspects and should be completed alongside Task 3.2.1 in the RRJ guidance (formulate pathways).

What are key inputs for this task?

The list of prioritised options from Task 3.1.2 (assess effectiveness) of the RRJ.

Why is it important?

Ensures a more programmatic approach - Sequencing involve takes a long-term view, breaking down the complex, long-term vision into a series of interconnected phases or projects which form pathways.

Optimising economic and financial benefits – It is not economically rationale to invest in all adaptation today, due to issues of uncertainty and the effects of discount rates. In particular, the timing of climate risks and the timing of adaptation decisions (and the associated costs and benefits) differ and influence the economic and financial case for an option. Furthermore, the combination of such choices, when they happen, and in what order can also impact the economic viability (see explainer below). The deep uncertainty of climate change and adaptation makes it challenging to ensure that options perform well under detailed appraisal.

What are the expected outputs?

The expected output of Task 3.2 is a set of pathways that can be evaluated in task 3.2.2 of the RRJ (evaluate pathways). The pathways are developed based on adaptation criteria in RRJ task 3.2.1, but also economic aspects such the timing of the risks, economic benefits and the timing of adaptation decisions.

Sequencing early on helps ensure that decisions on adaptation to both manage the risks well and optimise investment to offer value for money, avoiding over or underspending.

Meeting budgetary constraints - because of tight regional (and national) budgets and constrained access to capital, prioritisation becomes even more critical. Regions must allocate their limited resources to the most impactful and cost-effective adaptation measures, and total expenditure will need to fit within an agreed budget. The sequencing process helps show that not all adaptation measures must be implemented now and helps fit within fiscal constraints.

Task 3.2

Prioritise and sequence adaptation options into pathways

What should you focus on the first time round?

In the early iterations of this Task, focus on being clear how the economic and financial characteristics of the activity affect the relative timing of when the actions are needed. If necessary, focus on performing this for a smaller number of sectors. Getting the process right will enable you to scale up and build from experience gained early on.

How can you complete it?

Take the highest scoring options developed in Task 3.1 and prioritise when actions need to be taken within the pathway, using the approach shown in Table 10. If you are updating an existing strategy or action plan, this should include existing measures that have been approved. For each option, assess the economic characteristics (rationale, urgency, timing of costs and benefits) to help inform if they should take place in the short, medium or long term:

1. Option type (Economic rationale)

Start by identifying the option type (also known as the economic rationale) for the options. Options can broadly be classified into one of three different categories of economic rationale (no/low regrets, climate smart design, or early action to support future decisions – for more information see Box 8).

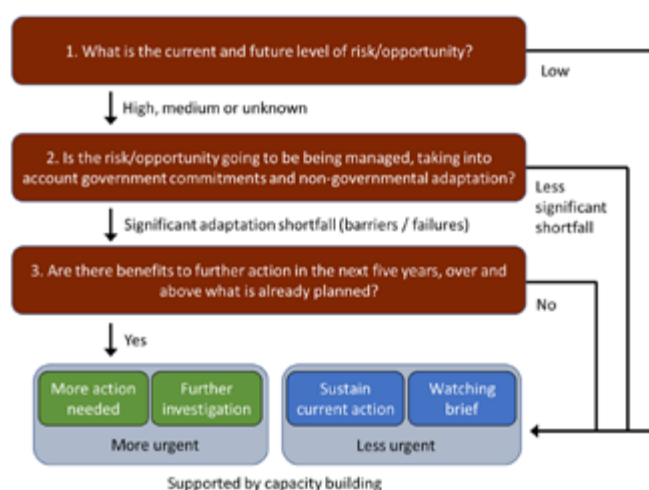
2. Urgency to address risks

The second step is to identify the urgency of risks addressed by the adaptation. This method of risk assessment has been pioneered in the UK and the EU Climate Risk Assessment. In this approach, urgency refers to how important it is the risks are addressed in the near term. It is typically determined through three questions:

- What is the current and future level of risk/opportunity?
- Is the risk/opportunity going to be managed, taking into account Government commitments and other non-Government adaptation?
- Are there significant economic benefits to further action in the next five years, over and above what is already planned? Such questions can include an economic assessment on magnitude, as well as benefits of further action.

An example of such an approach used in UK Climate Change Risk Assessments is shown below:

Figure 17: Urgency scoring framework.



Source: Watkiss and Betts (2021). Updated from Warrant et al., (2016)

Task 3.2

Prioritise and sequence adaptation options into pathways

This approach questions take into account the size (magnitude) of the risk in economic terms, the extent of management and benefits of early action. Higher urgency scores indicate more immediate action is needed to manage climate risks and that there are higher economic benefits of doing so. Questions 1 and 3 often consider quantitative economic evidence, which can further support the case for action. Such work on risks may have been completed during the risk assessment in RRJ Task 1.3.1) or may be viable to do at a high level here.

3. Economic benefits

Include the overall indicative economic benefits of the adaptation option based on your assessment in Task 3.1.

4. When costs and benefits arise

Whilst all are economically rational, the different categories have different timings of costs and benefits. Some investments that are needed now to deal with current risks deliver benefits now and into the future (e.g. early warning systems). Others need investment now, but benefits arise later (climate proof infrastructure). In other cases, the main costs and benefits arise later (e.g. adaptive flood risk management or sea level rise). This is summarised below:

Table 10: Timing of costs and benefits of adaptation option by building block.

Economic rationale	Main costs	Main benefits
No / low regret (e.g. Early Warning Systems, capacity building)	Now	Now + Future
Climate smart design (Climate proof infrastructure)	Now	Future
Early action for future decisions (e.g. Research)	Future	Future

You should use these criteria to fill in the final two further columns in the template:

- **When costs arise** – When the investment in the option would be needed – either now (i.e. within a current action plan), or in the future (future packages).
- **When benefits arise** – When the benefits associated with the option would be realised within the region.

Task 3.2

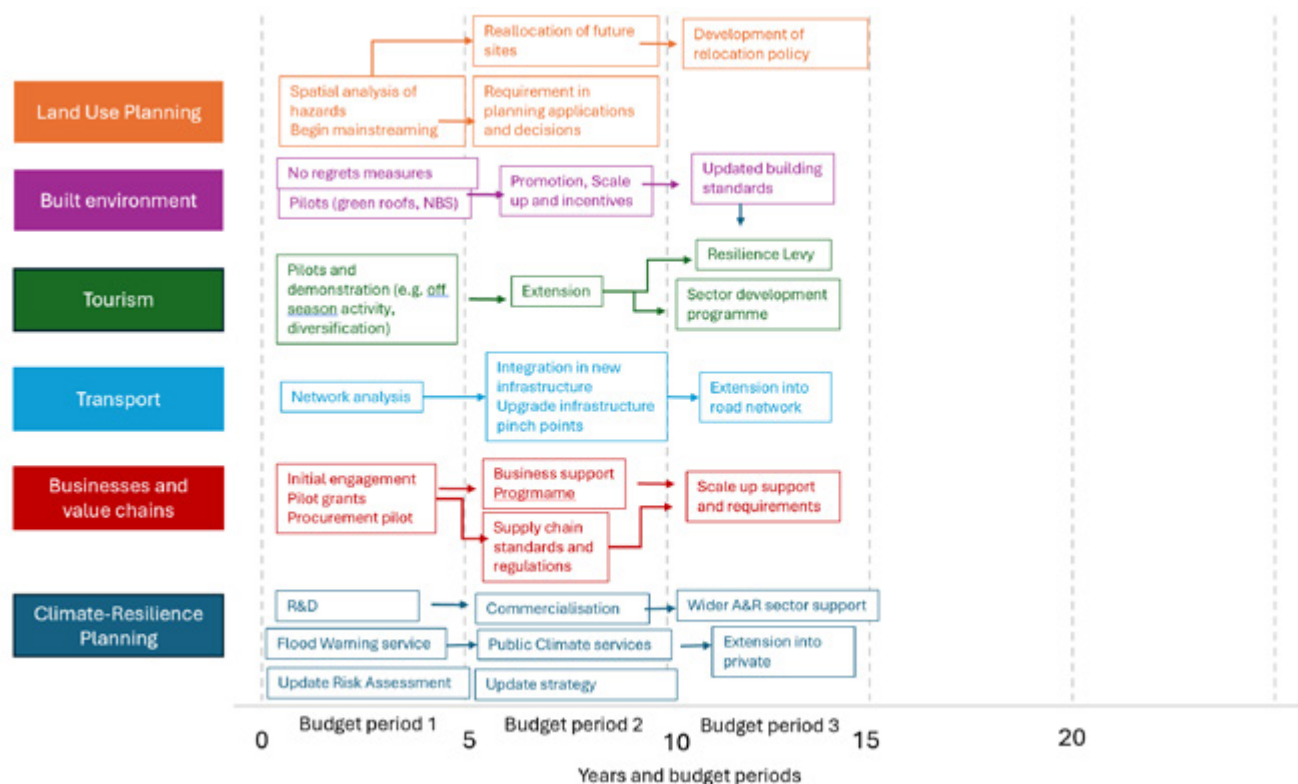
Prioritise and sequence adaptation options into pathways

This information, combined with the adaptation criteria in RRJ task 3.2.1 (formulate pathways) should allow you to judge when each option should occur individually (short, medium or long-term) and sequence them into adaptation pathways. These can be turned into packages of actions for a Climate Resilience Strategy and Investment Plan.

An example pathway is shown in Table 11 below. These can also be illustrated visually, showing packages over time as shown below

You should adjust the sequencing based on other local preferences, such as windows of opportunity (e.g. significant investment decisions where adaptation could be mainstreamed), available fiscal space and political considerations (such as acceptability or community priorities).

Figure 18: Indicative illustration of the timing and sequencing of adaptation.



Source: Taylor, R., England, K and Lea-Eggert, A (2025)., based on ADB (forthcoming).

Task 3.2

Prioritise and sequence adaptation options into pathways



Explainer – Economically effective adaptation using a building block approach

It is important to prioritise the most effective adaptation in a way that maximises the societal benefits within available resources. Not all adaptation is economically rationale to do today because of discounting and uncertainty. The economic attractiveness is influenced by both the timing of the risk and the type of decision, noting that for many risks and adaptation responses, there is a need to address the challenge of deep uncertainty, i.e., where the probability of risks is not known. To remain proportionate Pathways2Resilience uses categorisation and sequencing to identify options which have the potential to perform well in more detailed appraisal later in the process (Task 4.1). The approach is built on a well-established literature and frameworks for identifying portfolios of early adaptation. Key to this is to ensure actions meet one of three priorities for early adaptation which pass an ‘economic test’. These aim to:

- Address any current adaptation gap by implementing ‘no-regret’ or ‘low-regret’ actions to reduce risks associated with current climate variability as well as building future climate resilience, or to enhance opportunities (No/low regret)
- Intervene to ensure that adaptation is considered in near-term decisions that have long lifetimes, such as major infrastructure developments, to avoid ‘lock-in’ (see key terms). This can include the use of decision making under uncertainty (DMUU) concepts (i.e., flexibility, robustness). (Climate smart design)
- Fast-track early adaptive management activities, especially for decisions that have long lead times or involve major future change, including planning, monitoring, and research. This can enhance learning and allows the use of evidence in forthcoming future decisions, for either risks or opportunities (early action to support future decisions).

These are shown in the adaptation priority framework below, along with the decision characteristics involved. All three of these adaptation priorities or building blocks (shown in the green boxes) are needed, and this requires portfolios of interventions for each individual risk or opportunity. Indeed, the three activities above can be part of an adaptation pathway. The differences between the three ‘building blocks’ are quite subtle, but important. Each involves a different combination of the timescale of climate risks and the time of the adaptation decision. On the left of the figure there are some current decisions or actions that can be taken now to address current climate risks. These lead to an immediate benefit. An example is to improve weather and climate services to reduce current weather-related impacts from heatwaves. In the centre of the figure there are near-term decisions which will be exposed to future climate change risks, and there is a one-off opportunity to adapt now. For example, to change the design of a major new infrastructure project (e.g., a major bridge or hydroelectric-power plant) to make them more resilient to future climate change, noting later major retrofits could be expensive or impossible. Finally, on the right of the figure, there are some future decisions that may need to be implemented to address major climate change in the future. Some of these will take time to develop, and some will benefit from improved information and learning. In these cases, it makes sense to start planning now (especially if lead times are long or the potential for learning is large). Sea level rise (is such an example, where early planning and monitoring is put in place now to prepare for the possibility that a new tidal barrier might be needed in the long-term. The key point is that all of these involve some near-term actions in the next five years.

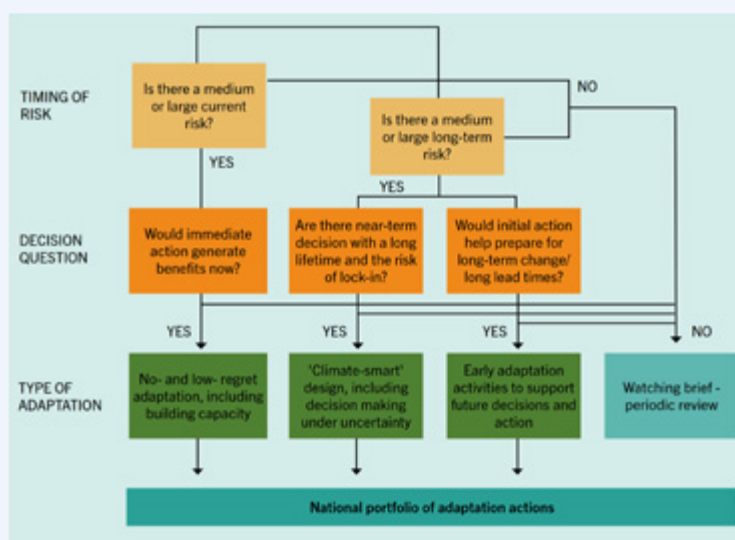
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Task 3.2

Prioritise and sequence adaptation options into pathways

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Figure 19: Three types of early adaptation with strong economic rationales.



Source: World Bank (2024), updated from Watkiss & Betts, 2021



Explainer – How pathways approaches can affect economic costs and benefits

Whilst this guidance provides some general rules for using economic considerations to guide the sequencing pathways, more in-depth studies highlight that the economic and financial costs and benefits can be significantly influenced by the time horizon considered, as well as the potential nature and order of options. These choices can 'lock in' certain development pathways or future adaptation options.

This is because typical economic evaluation methods tend to focus on the near term, and only focus on single decisions or projects, rather than a sequence of these decisions over time and struggle with deep uncertainty. As a result, the economic and financial appraisal of options and the pathways can result in different outputs compared to those that take a longer term.

For example, Hasnoot et al (2019) illustrate this by considering adaptation within a river corridor. They considering two adaptation options 1) implementing a 'room for the river' (managed retreat) policy, and 2) implementing flood defences, each with small and large programmes, to give a total of eight options that can be combined into packages.

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Task 3.2

Prioritise and sequence adaptation options into pathways

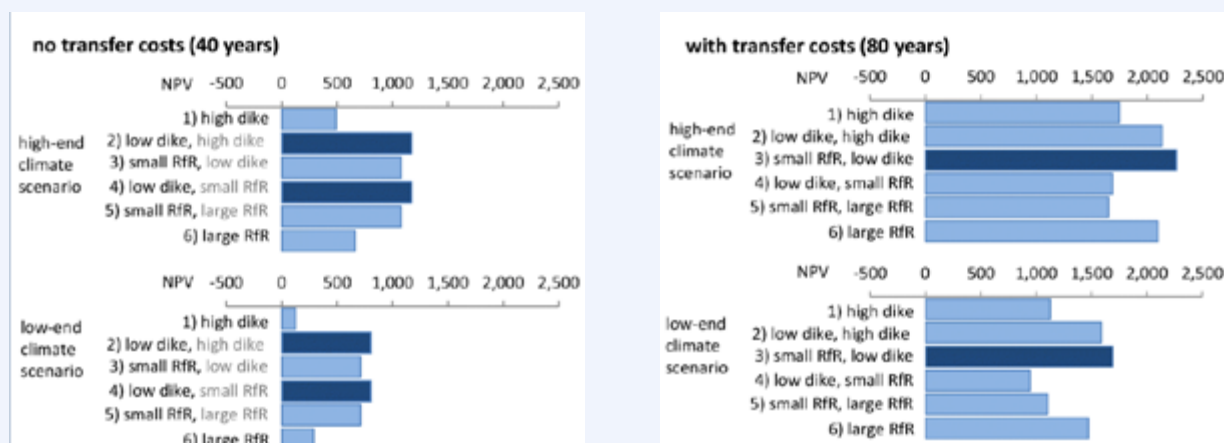
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The timing and sequencing of these options can lead to different outcomes. Building flood defences as a first response could increase the assets at risks (and therefore both the costs and benefits of adaptation. Whilst encouraging future economic activity, this option may also restrict the ability to implement the managed retreat policy in future. In contrast, the use of a land use policy which limits development in 'at risk' areas and promotes development other areas, will also limit the need for future flood defences, but may also suppress wider economic activity and performance. Due to the timing of the costs and benefits, the economic and financial analysis may have significant differences, with the potential for overinvestment or underinvestment.

Considering these issues also leads to a second issue, known as transfer costs. 'Transfer costs' are the costs associated with changing adaptation options within a pathway, such as removing or discontinuing current actions and the higher or lower costs related to implementing a new action. For example, the costs of switching from moving away from flood defences to a managed retreat option. This move can create legacy costs (e.g. decommissioning of infrastructure, staff redundancies) as well as new responsibilities and functions for other organisations which may start new options.

The diagram below shows how these issues can combine to significantly affect optimal options by exploring economic analysis over 40 and 80 year time horizons, with and without transfer costs, for low and high climate scenarios. It shows how the most economically beneficial options change by going beyond the project cycle time horizon and including costs of transfer to alternative pathways.

Figure 20: Net present value (non-specified monetary unit) of the adaptation pathways for two climate change scenarios and for a situation without transfer costs (time horizon of 40 years) and with transfer costs (time horizon 80 years), assuming a discount rate of 3%. assuming a discount rate of 3% and economic growth of 2%. RfR room for the river.



Source: Haasnoot et al., 2019.

Whilst the main Pathways2Resilience guidance provides good analysis, for those pathways with significant investment, or in future iterations of pathways, you may wish to explore how the costs and benefits of the pathway vary, based on the options and their sequencing over time.

Further reading

Haasnoot, M., van Aalst, M., Rozenberg, J. et al. (2020) [Investments under non-stationarity: economic evaluation of adaptation pathways.](#)

Task
3.2

Prioritise and sequence adaptation options into pathways



Before moving onto Task 3.2 have you:



Categorised options based on type, urgency, benefits and investment needs.



Sequenced the options into pathways that will form the basis for evaluation.



Supporting resources:

Guidance and supporting materials

- Watkiss, P. and Betts, R.A. (2021) [Method. In: The Third UK Climate Change Risk Assessment Technical Report \[Betts, R.A., Haward, A.B. and Pearson, K.V. \(eds.\)\]. Prepared for the Climate Change.](#)
- World Bank (2024) [Climate Adaptation Costing in a changing world – Valuing climate adaptation helps us orient our compass toward effective and resilient pathways](#) – This study outlines the key issues, consideration and approaches for costing climate adaptation options, and the frameworks for economically optimal adaptation options.

Case studies

- City of London (2022) [Adaptive Pathway Planning](#) – The study. considers long-term climate resilience challenges facing the City of London area (the 'Square Mile') and the wider portfolio of City Corporation assets from now to 2050, and beyond

Table 11: Sequencing approach to adaptation pathway for flood risk management. Note sections of the appraisal in grey are completed in the RRJ task, 3.2.1 Formulate pathways

Options		Adaptation criteria					Economic criteria				Pathway Input		
Name	Option type	Potential regret	Adaptation effectiveness*	Timing of adaptation limit*	Indicative co-benefits**	Lead time***	Urgency risks addressed	Indicative economic benefits	When costs arise	When benefits arise	When should the action happen?		
											Short	Med	Long
Early warning system extension	No-regrets	Low	Exposure reduction (casualties): Med	Expected annual casualties > threshold: 2035	Addresses social vulnerabilities: Low	1 year	High	High	Now	Now	X		
Resetlement with coastal and river planning	Adaptive management	High	Exposure reduction (damages): High	Flooding EAD > threshold: 2100+	Climate smart spatial planning, addresses social vulnerabilities, restores coastal/river biodiversity, etc.: High	25+ years	Low	Medium	Future	Future			X
Climate proof highways	Climate Smart	Low	Exposure & Vulnerability reduction (damages): High	Flooding EAD > threshold: 2075	Maintains transport corridors and associated economic activities, aids in disaster response/recovery: Med	5 years	High	High	Now	Future	X		
NBS in built environment	No-regrets	Low	Hazard reduction (runoff, delays flood peaks): Med	Flooding EAD > threshold: 2045	Restores biodiversity, addresses heat stress, provides public recreation areas, etc.: High	10 years	Med	Med	Now	Now		X	

* Risk reduction impacts and timings can be expressed either quantitatively or qualitatively depending on your selected assessment methodology. Separate impact assessments should be completed for each option against each of the primary adaptation objectives.

** Secondary impacts can be expressed either quantitatively or qualitatively depending

on your selected assessment methodologies. Separate impact assessments may be completed for each option against each of the secondary planning objectives.

*** Lead time refers to the length of time to address any implementation feasibility concerns and/or for the likely emergence of favourable opportunity conditions (based on analyses completed in Task 3.1.2)

Task 3.3 Turn pathways into investment packages

RRJ task(s)	Climate Resilience Investment Plan Template Section	Effort	Importance
Task 3.1.2b Evaluate Pathways	3.1, 3.2	Medium to High	Essential but advanced

What is this task about?

This Task involves grouping the actions identified in the pathway into packages – groups of near term projects or activities that have the potential to be financed together, and gathering their relevant costs needed to realise them.

What are key inputs for this task?

To complete this Task, you need the preferred adaptation pathways developed in RRJ Task 3.2.2 and AIC task 3.2.

What are the expected outputs?

The main outputs of this Task are a set of packages for investment for the pathway(s) with a set of high level costings.

Why is it important?

Targeting funding and financing models - Within adaptation pathways there will be a range of different types of adaptation. These in turn influence the funding and financial potential and options. This is explained in more detail below, but the development of packages here supports further analysis on financing opportunities in Task 4.3 and Phase 5.

Informing economic and financial analysis – Developing a robust set of activities and costs is important first step in translating packages into bankable investments. They will be used as the basis for the economic and financial appraisal in Task 4.2, as well as to inform the funding and financing in Task 4.3.

**Task
3.3**
Turn pathways into investment packages
What should you focus on the first time round?

Focus on the nearer term packages that you are likely to include in the Strategy and Action plan. Over time, these can be expanded out to further focus on the longer term aspirations of the entire pathways.

How can you complete it?
1. List pathway activities and group together into packages

List out all the planned activities in your pathway(s) and begin to group them together, based on their activities and or governance arrangements. Try to develop natural packages which are owned by particular departments or actors, or have similar activities or types of adaptation. To support this, you should classify the packages in line with and types of adaptation (see box 2 above). Information on each package, including its governance lead, sub-packages and indicative activities should be collated and compiled into a table.

2. Collate information on the costs of the packages

Having defined the packages, you should also begin to cost them. Cost estimation is the process of forecasting the financial and other resources needed to complete a project within a defined scope and schedule. When it comes to costing climate change adaptation projects, there is no single method or approach which can be used. The World Bank highlights that selecting a costing approach depends on multiple factors including the approach, analysis levels, measure types and analytical methods.

Instead, the appropriate method depends on the specific objectives and the level and types of CCA cost assessment, as well as the existing maturity of evidence, and available expertise and resources.

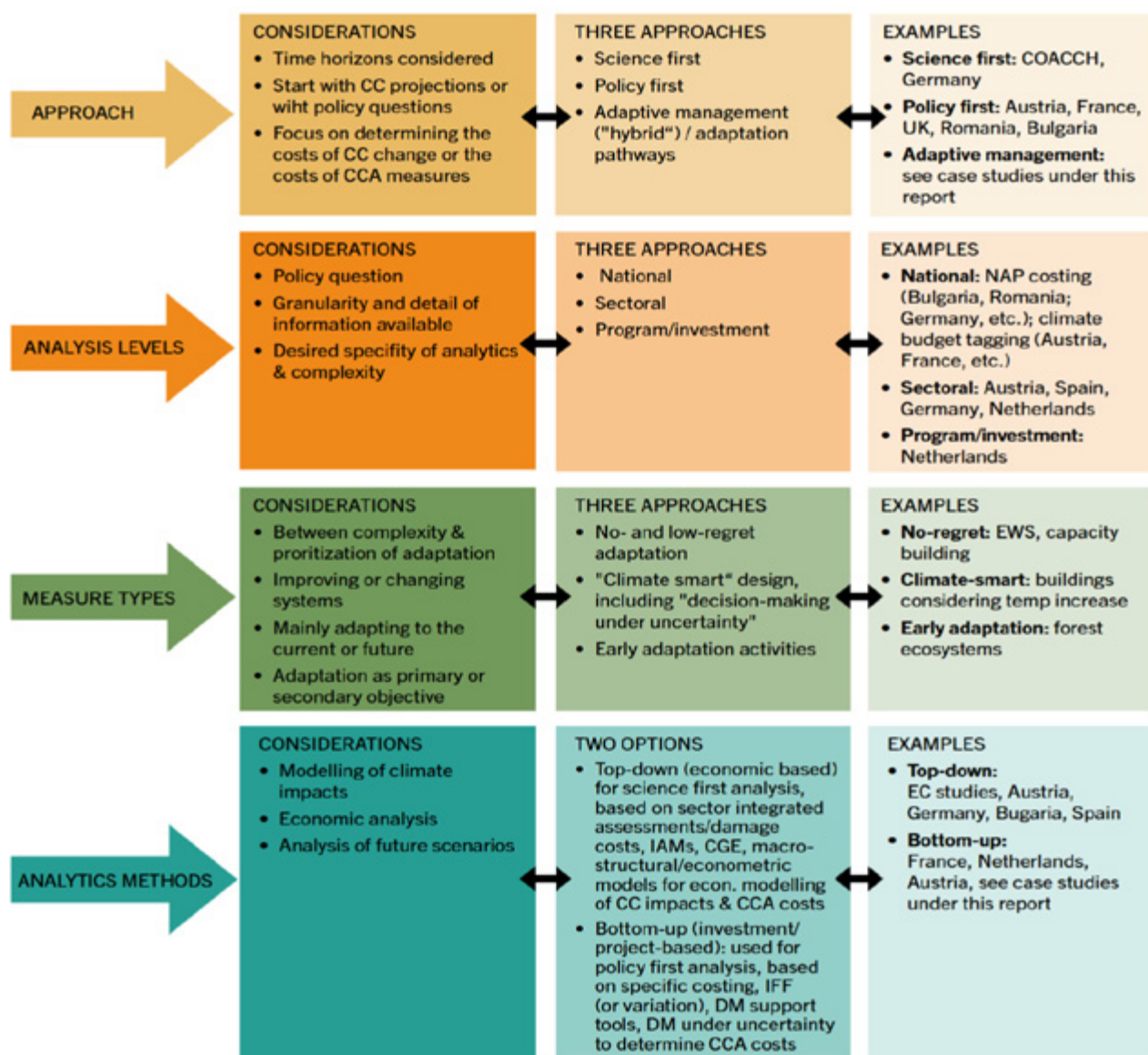
In terms of the diagram (right), much of this is already defined in the Pathways2Resilience methodology. For example, on approaches, the RRJ takes an adaptive management approach, whilst the analysis level is focused on a regional strategy. Furthermore, Task 3.2. involves consideration of all measure types. Therefore, the remaining consideration relates to the particular analytics methods used for costing.

The diagram shows that the costs of climate adaptation projects and plans can typically be generated from a modelled / economic-based approach (top down), or bottom up, from a needs-based, program-based or project-based approach. There are a range of methodologies that can be used, and these are shown below (Table 12).

Task 3.3

Turn pathways into investment packages

Figure 23: “Building blocks” and flow of decisions for costing CCA measures.



Source: World Bank.

Note: CC = Climate change; DM = Decision-making; EQ = Earthquake.

Source: World Bank, 2024.

**Task
3.3**
Turn pathways into investment packages
Table 12: Summary of bottom-up methodologies for adaptation costing.

Methodology	Description
Top down / modelling	
Sector integrated assessment/ damage costs	Use of sector models (global, regional, national, local) to assess future climate change impacts and then technical adaptation responses (and associated costs and benefits)
Integrated Assessment Models	Combine the scientific and economic aspects of climate change within a single integrated analytical framework, including the economic impacts of climate change and the costs and benefits of adaptation. Typically highly stylized.
CGE Modelling	Macro-economic models which analyse how impacts cascade across sectors of the economy as well as price effects. They often use sector impact and adaptation studies as inputs.
Macro-structural modelling	Presentation of finance flows at macroeconomic level via mapping out main economic variables in national accounts, balance of payments, labour markets, and financial sectors. They generally are consistent with both economic theory and the dynamics of real-world economy.
Econometric modelling	Econometric (statistical) analysis of current climate and economy links and use of these relationships to look at future climate impacts and in some cases adaptation.
Bottom up methodologies	
Sector, program, project or activity-based costing	Generation of project costs based on detailed local estimates from relevant technical partners e.g. designers, architects, consultants, engineers and contractors.
IFF analysis / Climate Adaptation Markups	Focus on likely costs of planned adaptation by evaluating historic and future investment needs and applying an adaptation 'markup' to investment needs in future time periods (e.g. next budget).
Climate budgeting / green budgeting	Review of possible expenditures of subset of budget lines 'tagged' as being a majority of focus on adaptation or as contributing and then application to future investments.
Decision support tools (e.g. economic appraisal)	Generation of project costs from economic and/or financial appraisal tools (e.g. cost benefit assessment, cost effectiveness analysis)

Source: Taylor, England and Lea Eggert (2025), based on World Bank, 2024.

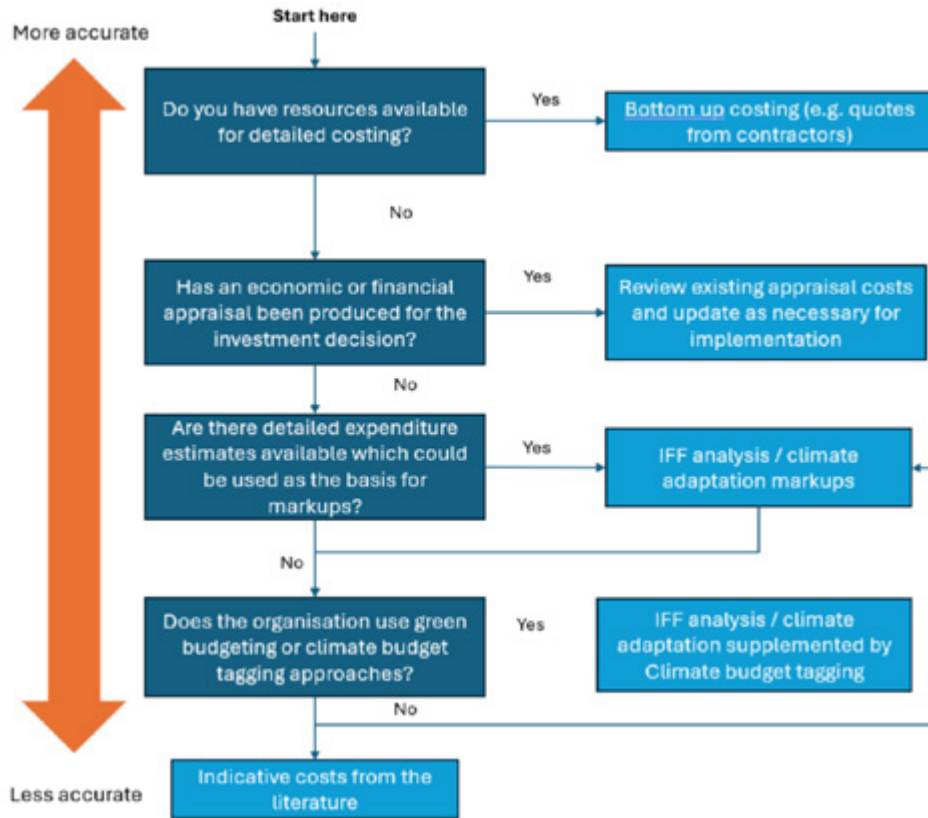
Since the action plan and project pipelines are focused on near term, for the purposes of Pathways2Resilience, a focus on bottom up methodologies are likely to be more relevant. This guide particularly focuses on sector or activity based costing and the use of markups, as well as gathering existing information.

Start by clarifying what information and requirements are needed for the purpose of investment decisions. Then begin to gather data and information to build an evidence base for the project and document the key assumptions for costing (e.g. inflation). This should include reviewing any existing costs information gathered already. You should then choose a costing methodology and produce a clear justification. To help select a costing methodology, you can use the following decision tree:

Task 3.3

Turn pathways into investment packages

Figure 24: Decision tree for selection of bottom-up costing methodologies.



Source: Authors. Note: approaches used are not necessarily mutually exclusive and entry points will vary depending on work done to date.

Having chosen a method, you should then calculate a base cost estimate, along with key uncertainties and risks, and produce a cost estimate report. This should include the fullest range of costs. This includes:

- **Capital / investment costs** – the upfront costs of an investment, such as the construction costs, and associated labour costs.
- **Revenue costs** – the costs to run the project over the lifetime (for example the maintenance costs of green roofs or walls, upkeep of property level flood protection, or data monitoring and evaluation needed for evaluation or financial reporting).
- **Implementation costs** – the costs associated with delivering the proposal, such as any regulations, or permitting schemes, or setting up of new organizational functions.
- **Transaction and financing costs** – The costs of facilitating the project as well as any interest over the lifetime of the project.
- **Contingency** – a margin to address the project based on risks and mitigation measures.

Each action should also account for escalation – i.e. how prices may change over the lifetime. To do this, each project should be dated and the Investment Plan should set out how it has accounted for change in costs during a project lifecycle, such as due to inflation and market factors have been accounted for. Costs should be captured in a detailed spreadsheet, which includes the line items. A final example table of these is shown below (Table 13).

**Task
3.3**
Turn pathways into investment packages

Table 13: Indicative investment packages and sub packages for adaptation pathways and estimated finance needs and indicative activities. Note information is fictional and not generated from a real region.

Package	Lead	Type	Implementation phase	Sub package	Cost (€m)	Indicative Activities
Early warning system	National Environment Agency	Type 3 – Pure adaptation	Short term	Weather forecasting	Setup of €10m, ongoing operations of €0,5.	Provision of climate information Online publication
				Installation of sensor systems		Capital investment programme Annual maintenance and investment
				Staffing capacity building		Knowledge and training
				Alert system costs		Alert triggers Mobile messages
Resettlement with coastal and river planning	Land use planning department	Type 3 – Pure adaptation	Long term	Infrastructure protection and relocation	€500m	Infrastructure protection and relocation Coastal buyouts Setbacks, and buffers Development permitting Tax credits Coastal change and SLR research programme to identify areas at risk
				Research		
				Property buyouts		
				Land use zoning		
				Financial Incentives		
Climate proof highways	Highways department	Type 1 – Climate Proofing	Short term	New highways investment	€50m	Upgrade of drainage assets, higher performance
				Surface dressing programme	€25m	Remote moisture surveys Targeted resurfacing Integration into maintenance programme
				Drainage refurbishment programme	€25m	Targeted upgrade of network pinch points
NBS in built environment	Land use planning department	Type 2 - Mixed	Medium term	Green building pilots	€5m	Green roofs, green walls, training and awareness raising
				Planning regulations	€2,5m	Enforcement of nature-based solutions and adaptation policies Depaving requirements
				Parks and green space expansion	€10m	Creation of new greenspace Climate proofing of existing parks – increasing of shade

Source: Authors

Task
3.3

Turn pathways into investment packages



Food for thought: For the purposes of the economics and financing, we have recommended you group similar activities across and within pathways into common packages. However, you may wish to present the packages differently in your adaptation strategy and action plan.



Before moving onto Phase 4 have you:



Grouped your pathway actions into packages.



Estimated the finance needs associated with them.



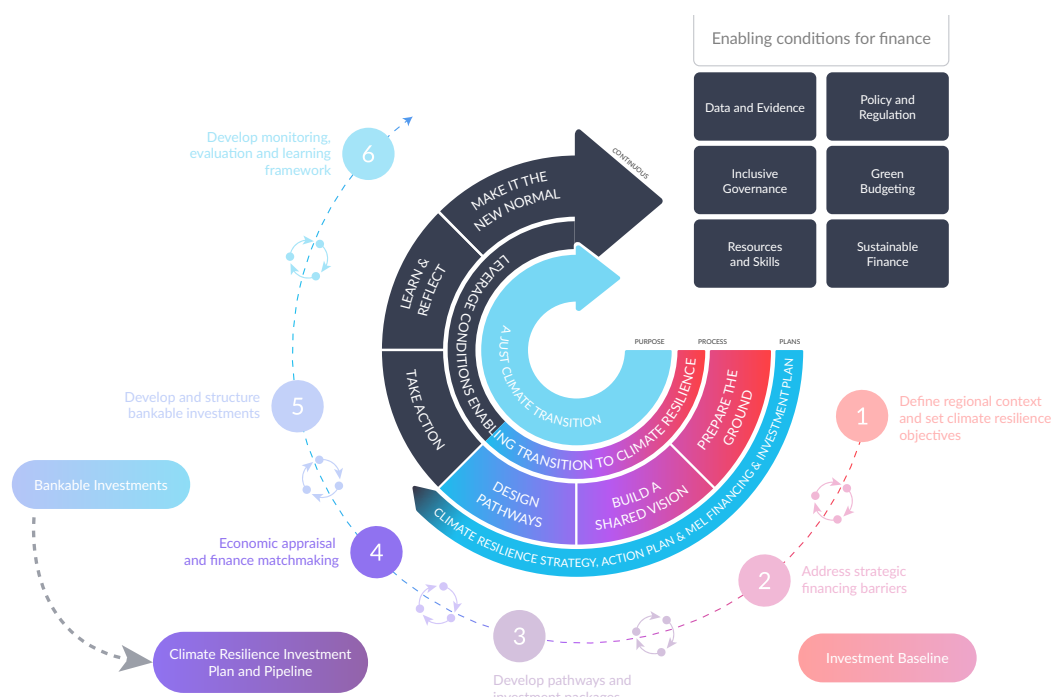
Supporting resources:

Costing

- Bosch, P. and Pásztor, A. (2012) [Guideline Costs of Adaptation Measures](#).
- World Bank (2024) [Climate Adaptation Costing in a Changing World](#) – provides a range of methods to costing adaptation projects.
- Infrastructure and Projects Authority (2021) [Cost estimating guidance: A best practice approach for infrastructure projects and programmes](#)
- European Commission: [Directive 2013/34/EU, known as the Accounting Directive](#)
- Ministry of Economy's Climate Change and International Cooperation Division (2020) [Costing Methodology for Fiji's National Adaptation Plan](#) – example of approach applied by a national government to generate cost estimates for adaptation over the 2021-2025 period.
- Taylor, R., England K, and Lea-Eggert, A. (2025) [Developing an Adaptation Investment Plan. Deliverable 3.1 of the ClimateFIT project.](#)

Phase 4 - Economic appraisal and finance matchmaking

Having built up packages of investment in phase 3, The aim of this phase is to assess the economic and financial performance of actions and to identify financing approaches.



Links to the Regional Resilience Journey:

AIC tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
Task 4.1: Identify economic, fiscal and financial benefits	You should be able to draw on the near-term actions in the preferred pathways developed in RRJ Task 3.3.	These can be used to feed into the action plan prepared in RRJ Task 3.3
Task 4.2: Assess economic and financial returns	You should be able to draw on the near-term actions in the preferred pathways developed in RRJ Task 3.3.	These can be used to feed into the action plan prepared in RRJ Task 3.3
Task 4.3: Matchmake actions with funding and financing opportunities	You should be able to draw on the near-term actions in the preferred pathways developed in RRJ Task 3.3.	The outputs should be used as in input into the overall action plan for the region in Task 3.3.

Task 4.1 Identify economic, fiscal and financial benefits

RRJ Tasks(s)	CRIP Template Section	Effort	Importance
Task 3.1 Identify and assess options	3.1	Medium to high, depending on the complexity of the region's needs and the availability of data.	Essential

What is this Task about?

This task is about identifying the types of benefits that the investment packages of your pathway provide – and whether they are public or private in nature.

What are key inputs for this task?

You will need the initial investment packages developed in Task 3.3, as well as any benefits identified from the longlisting in Task 3.1.

What are the expected outputs?

A table summarising the economic, fiscal and financial benefits of the different adaptation packages.

Why is it important?

The analysis of the adaptation benefits (and co-benefits) for those projects, actions and activities that will be being taken forward in the Strategy and Action Plan is important as this forms the justification for the investment through economic and financial appraisal in Task 4.2, and helps to identify public and private sector opportunities to help unlock both public and private investment in adaptation.

What should you focus on the first time round?

Focus on those near term and medium term actions that you will include in the Strategy and Action Plan. Over time you may wish to build this into other packages that are delivered in future, to cover the wider pathway.

**Task
4.1**
Identify economic, fiscal and financial benefits
How can you complete it?

Begin by identifying the benefits at the package or-sub package level. For each, classify if the benefits are economic, fiscal or financial. An example from the packages and subpackages in Task 3.3 is shown below.

Table 14: Example of an evaluation of benefits and beneficiaries for packages to reduce flood risk.

Economic benefits				
Pathway package	Category	Societal benefits	Fiscal benefits	Financial benefits or revenues
Nature-based solutions for the built environment	Adaptation benefits	Productivity benefits – reduced temperature Improved air quality Health and wellbeing benefits Job creation (labour intensive)	Reduced maintenance costs Reduced reconstruction and repair costs Reduced disaster relief and recovery efforts Reliability of tax revenues	Flood risk reduction Reduced insurance premiums / claims
	Co-benefits	Improved ecosystem services – e.g. improved biodiversity, Carbon Storage	Reduced water treatment costs	Increase in rental yields Increase in property values
Resettlement with coastal and river planning	Adaptation benefits	Value of information Improved decision making Improved public sector coordination and decision-making	Reduced disaster management cost Increased reliability of tax revenues (reduced impact on businesses)	
	Co-benefits	Higher land values long term Avoided carbon from flood damage	Reduced disaster management costs	
Climate Proof Highways	Adaptation benefits	Improved reliability and/or quality Increased business productivity	Reduced repair and maintenance costs	Avoided losses to businesses from disruption
	Co-benefits	Improved investment attractiveness	Improved tax receipts	
Early Warning System Extension	Adaptation benefits	Value of information – improved information leads to improved decision making for flood risk management, leading to: Reduced economic disruption Reduced health impacts (physical and mental health)	Reduced disaster management costs	Reduced damage to property Reduced insurance premiums / avoided costs
	Cobenefits	Increased investor confidence		Increased private sector investment

Task 4.1

Identify economic, fiscal and financial benefits



Before moving onto Task 4.2 have you:



Identified the main economic, fiscal and financial benefits from the Investment packages?



Explainer: Economic, Fiscal and Financial benefits

The different benefits and co-benefits of adaptation projects, create benefits to society, the public finances and financial benefits that can be expressed in monetary terms and evaluated in economic and financial appraisal. These are important since these are typically important to governments or organisations since they support the case to invest.

Economic benefits refer to societal benefits, including social or environmental costs or benefits, whilst fiscal benefits refer to the positive cost savings or revenues for the public finances that these economic benefits may generate. Finally, financial benefits refer to direct financial benefits or revenues (cash flow, either directly, or from co-benefits of adaptation) that provide opportunity for private sector investment. For instance, revenues generated from delivering water services (and potential for PPPs) or private sector benefits from adopting climate smart technologies.

Table 15: The differences between economic, fiscal and financial benefits.

Type of benefits		Focus	Scope	Examples
Economic	Societal	Benefits to society overall and best use of resources	Full range of costs and benefits – including non-market (e.g. health) and intangible / non-market impacts (e.g. air pollution, health, carbon)	Reduced carbon emissions, reduced morbidity and mortality, increased ecosystem services, improved productivity
	Fiscal	Government's budget	Government spending and foregone revenues	Reduced health service costs, reliable revenue streams (e.g. Tube)
Financial		Direct, actual monetary gains by an entity for goods, services or resources	Narrow – specific entity's accounts (sometimes an overlap w. fiscal)	Reduced maintenance requirements, Reduced cooling bills

Identifying the cumulative effects of these benefits can be used to build up a stronger narrative which supports the case for investment, even when such benefits may not be able to be evaluated through direct economic appraisal.

Task 4.2 Assess economic and financial returns

RRJ Task(s)	CRIP Template Section	Effort	Importance
3.2 Design a Portfolio of Interventions, 3.3 Preparing for implementation	5.1	High	Essential but advanced

What are key inputs for this task?

You will need the costs for the relevant investment packages identified in Task 3.3, as well as the economic and financial benefits identified in Task 4.1.

What are the expected outputs?

An economic and financial appraisal of the Strategy and/or actions within the action plan. This appraisal helps inform the creation of the action plan in RRJ Task 3.3.

What is this Task about?

This Task involves evaluating the economic and financial viability of the packages and projects to ensure they represent good value for money on their own, and together. It can focus on all or some of the packages within the strategy or the action plan,



Insight: The decisions on whether a project is investible involves considering different things depending on whether you are in a public body or a private organisation.

Public bodies are interested in the economic (societal case) – that is, the costs and benefits to the society, including non-market benefits, such as carbon storage, or health improvements and whether the project is affordable. In contrast, private organisations are typically focused on costs and benefits to the organisation – such as the total amount of private value created (Net Present Value), and the financial returns. These perspectives are important to consider both when evaluating actions, but also in developing financing approaches.

Task
4.2

Assess economic and financial returns

Why is it important?

Developing a strong economic and financial case for investment is crucial for several reasons.

- **Justifying investment** – Appraisal provides a justification for investment. It assures public funders that the project delivers significant societal benefits and is affordable, whilst showing private funders the project delivers appropriate financial returns and will generate value. It is often a formal requirement for funding or financing.
- **Comparing trade-offs** - Limited budgets mean regions often face choices about allocating investment. Appraisal using common monetary metrics allows regions to compare adaptation against business as usual, alternative options as well as other potential investments in different policy areas, ensuring the best use of available funds. It also provides clarity on the trade-offs with different development paths in the medium to long term, and provides an indication on the net value of different futures and different options.
- **Identifying evidence gaps** - appraisal identifies further evidence gaps that need to be addressed to make a stronger case for investment, ensuring all relevant information is considered in the decision-making process.
- **Centring Just Resilience** – appraisal highlights the value of future benefits, including the importance that current generations place on the future. It can also highlight distributional issues where costs and benefits impact different groups disproportionately. This can enhance consideration of sustainability and also support the achievement of Just Resilience.

What should you focus on the first time round?

Start by focusing on the core activities of the Strategy or Action(s). In future iterations, you may wish to focus on more comprehensive appraisal, including extending cost benefit analysis to cover the uncertainty of climate change. In the early stages, it is important to develop a high-level case focusing on the overall justification for intervention, societal costs and benefits and potential delivery mechanisms. As your region becomes more advanced and uses a wider range of sources and instruments, focusing on more advanced appraisal metrics, (such as NPV and IRR) becomes more important.

How can you complete it?

Begin by selecting deciding the scope of analysis you want to undertake including whether it needs to be economic, financial, or both. Key questions include:

- What level of analysis do you want to undertake - e.g. the strategy and or/ action plan overall, groups or packages of actions, or at the individual actions.
- Who will use the information and what metrics do they need?
- What are the climate scenarios you will consider in your analysis

Following this, consider the appraisal method you wish to use. This can vary based on a range of factors. Key considerations include:

- Data availability (e.g. ability to value benefits in monetary terms)
- Effect of uncertainty
- Length of lifetime of project
- Whether decisions 'lock in' risks.
- Flexibility / learning

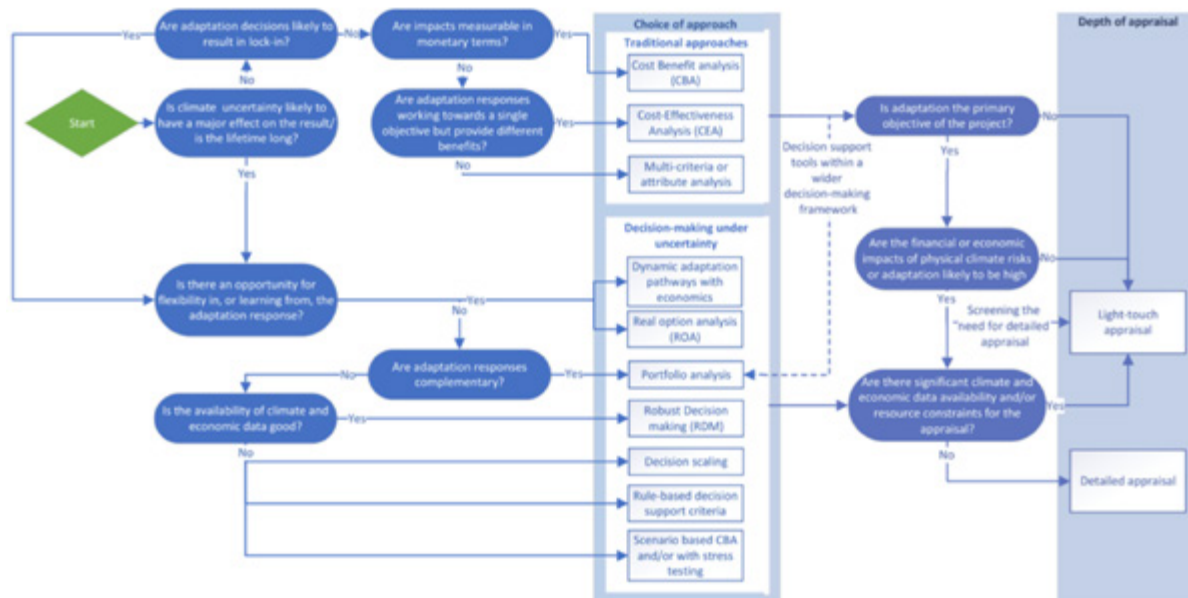
Task 4.2

Assess economic and financial returns

Additional methods focus on managing uncertainty and risk, and accounting for the time difference between current and future costs and /or benefits.

To help address these considerations, the European Investment Bank has developed a flowchart which includes a series of questions to help you decide on which appraisal method is most appropriate, as well as the depth of appraisal required. This is shown below (Figure 25):

Figure 25: Decision making framework for economic appraisal of adaptation projects.



Source: EIB Advisory, 2022.

Having selected the scope and methods, conduct a comprehensive appraisal of the near-term actions. The detailed appraisal required will vary across regions and packages or actions.

The level of appraisal needed and the types of metrics required may also depend on overall financing criteria for the region and other sources of finance. For example, the EIB has its own standards for economic appraisal, whilst in the UK, compliance with the HM Treasury Green Book

standards is crucial. Ensure that your appraisal meets the standards required by your region's specific financial frameworks. However, common metrics used to assess this include Cost Benefit Ratios, Net Present Value, and the Internal Rate of return (see explainer below). Such metrics are also discounted to consider the time value of money – that in general money available today is more valuable than that used in the future. Again, different discount rates are used across the EU.

Task 4.2

Assess economic and financial returns

Drawing on the benefits and beneficiaries generated in Phase 3, summarise the relevant economic and/or financial costs and benefits realised over the lifetime of the action(s). Where possible, quantify these in monetary terms (e.g. health benefits, carbon storage benefits), and compare these to business as usual/do nothing. For economic appraisal, project revenues should be excluded since these typically involve transfers of resources, but not overall net welfare (societal) gains. An example output of an appraisal is shown below (Figure 26):

For the financial analysis build on the financial benefits identified in 4.1 to build a programme-level cash flow analysis to examine the income and expenditure of the strategy and/or individual actions. The financial analysis should include all project revenues (including incentives, fees etc). This analysis provides an overall picture of the expenditure profile and financial performance, including Net Present Value (NPV) and Internal Rate of Return (IRR).

You should then confirm whether the action meets the economic and/or financial criteria required that means it can be included in the strategy and/or action plan. The economic and financial cases might need to be assessed for each project individually and also as part of the overall portfolio of actions. At an aggregate level, the high benefits or profitability of some actions can balance those that

are important but have lower cost-benefit ratios (CBRs) or lower returns. This holistic approach ensures that while individual projects are justified, the overall portfolio provides a balanced and optimised economic and/or financial benefit.

A key part of the appraisal is sensitivity analysis – this can be used to check how sensitive the results are to core assumptions (e.g. prices, or future changes in scenarios, e.g. population). It can be particularly useful where there are data gaps or uncertain estimates. Consider if this is an important consideration in your appraisal. You should also consider the distributional impacts – for example if a set of measures are likely to disproportionately impose costs on poorer households or reduce risks to particular groups.

You may also wish to consider further innovations or experimentation – for example, recent work by the Institutional Investors Group on Climate Change has experimented with including climate change impacts into the cashflows and appraisals of projects comparing business as usual and climate-proof investment options. Such work has been used to make the case for additional investment in adaptation within wider infrastructure projects, by showing the projects perform more effectively under future climate impacts.

Figure 26: Summary of costs and benefits from a nature-based solutions project for flooding in Edinburgh, UK.

Item	Option 1: BAU	Option 2: BGI
Costs	£586,000	£1,314,253
Benefits		
Drainage and Waste Water	£0	£116,708
Property values	£0	£711,666
Environmental Regulation	£0	£2,039
Total	£0	£830,412
Benefit- Cost Ratio	0	0.63
ENPV	-£586,000	-£483,841

All prices discounted over thirty years using HM Treasury Discount Rates

Source: Adaptation Scotland, 2023.

**Task
4.2**
Assess economic and financial returns

Whilst the standard economic and financial appraisal process is summarised above, it is resource-intensive and complicated. In particular, for larger projects, or for decisions with long-lifetimes or a degree of irreversibility, more detailed appraisal methods which better consider uncertainty can be used (see Mediation, 2012).

If resources for detailed individual appraisals are limited, you can leverage existing evidence from similar interventions in other places to provide the necessary justification. This approach ensures the economic case is backed by relevant and credible data, even if detailed individual appraisals are not feasible. Results can be presented in aggregate to highlight the cost/benefit ratios of particular interventions. An example is shown below:

Table 16: Illustrative economic case and cost-benefit ratios for selected adaptation options for Oxfordshire Climate Change Routemap.

Adaptation options	Economic case	Benefit to cost ratio (BCR)
Water efficiency measures – metering / campaigns	Very high	High BCRs for example 11:1 (UK)
Improved early warning systems and weather and climate services	Very high	Early warning systems for floods and storms BCRs 10:1. More general weather and climate services 12:1 (UK)
Flood protection – Traditional flood prevention and preparedness (including infrastructure)	High	UK specific values from EA long-term investment strategy BCR 5:1 Similar values in literature with BCRs typically in the range 3:1 to 6:1, though full range 0.5:1 to over 14:1
Making infrastructure (e.g. transport) resilient (climate proofing)	High	4:1 though full range 0.7: 1 to 20:1. In practice varies.
Flood reduction – Nature based solutions	Medium to High	Varies with intervention Sustainable drainage systems BCRs ranging between 0.9:1 and 1.8:1 Rural natural flood management 2:1 if targeted Wider literature reports flood protection using NBS 3:1
Agriculture	Medium to high	Climate smart agriculture 3:1 Enhanced monitoring and surveillance for pests, 10:1 UK
Heat management	Medium to high	High BCRs 11:1 for heat alert (UK) Passive Positive but low BCRs for green space and green roofs
Wildfire management	Varies with context	BCR 1.6:1 for targeted high-risk areas in UK (e.g., forests) but below 1:1 for other areas Wider literature in high-risk countries finds prevention and response BCRs ranging from 1.6:1 to 39:1, with managing wildland-urban interfaces 3:1.
Capacity building	Varies with context	context-specific studies that have estimated BCRs, reporting results of >10:1 though these are limited in transferability to the specific UK context

Source: England and Watkiss, 2024.

Task
4.2

Assess economic and financial returns



Before moving onto Task 4.3 have you:



Reviewed the relevant appraisal criteria for your region and major known sources.



Appraised the economic and financial cases of the actions to understand the potential costs and benefits and which meet regional and/or funder requirements.



Supporting resources:

Economic and financial appraisal

- European Commission (2014) - [Guide to cost-benefit analysis of Investment Projects. Economic appraisal tool for Cohesion Policy 2014-2020](#) - The guide sets out general principles for carrying out cost benefit analysis in major EU projects, with particular guidance for energy, transport, environment, broadband, and research, development and innovation, along with case studies.
- EIB (2023) - [The Economic Appraisal of Investment Projects at the EIB – 2nd edition.](#) – This guidance provides an overview of how the EIB performs economic appraisals of the projects it considers for investment to ensure they sufficient value to society to merit support. Beyond considerations of financial profitability to investors, the economic appraisal also addresses the wider value generated by the project to society. This comprises benefits and costs to project final users, the taxpayer and third parties, allowing for all applicable market failures, such as environmental externalities.
- European Commission (2021) [Economic Appraisal Vademecum 2021-2027](#) – This update to the EC 2014 guidance provides an overview of the Economic appraisal approaches for Cohesion policy under the 2021-2027 programming period, recognising that such appraisal is nationally led. It expands and enhances previous guidance in additional sectors and is supported by a detailed excel template.
- EIB Advisory Hub (2022) [Climate change adaptation and economics and investment decision-making in the cities. 'How to guide' and case studies.](#) - This document brings together the knowledge and experience from the EIB to provide guidance for supporting municipal and local authorities on using adaptation economics in a local context. It introduces the role of adaptation economics in investment decision-making and outlines when it can be used at different stages in project development and appraisal. It describes the relevant decision tools that can be used to undertake economic appraisal of adaptation options. It provides a toolkit for choosing which approach to use.

Task 4.2

Assess economic and financial returns

- Tröltzsch, J., Rouillard, J., Tarpey, J., Lago, M., Watkiss, P., Hunt, A. (2016). [The economics of climate change adaptation: Insights into economic assessment methods](#). ECONADAPT Deliverable 10.2
- HM Treasury (2022) [Green Book – Central Government Guidance on Appraisal and Evaluation](#) - The green book provides an overview of the standard approach to economic and financial appraisal of policies, programmes and projects in the UK. It also serves as a model example for wider Europe.
- MEDIATION (2012) [Decision Support Methods for Climate Change Adaption: Method Overview - Summary of Methods and Case Study Examples from the MEDIATION Project](#) - This guide provides a summary of decision support tools, their potential relevance for adaptation and guidance on their potential applicability. It covers traditional tools (cost-benefit analysis, cost-effectiveness analysis and multi-criteria analysis) and alternative approaches that more fully capture uncertainty (real options analysis, robust decision making, portfolio analysis and iterative risk (adaptive) management, adaptation turning points and analytic hierarchy process).
- Markandya, A., Sainz de Murieta, E., Galarraga, I. (2016). [Transfer of distributional weights parameters. In Rouillard, J., Tröltzsch, J., Lago, M., Markandya, A., Sainz de Murieta, E., Galarraga, I., Distributional objectives and non-monetary metrics. FP7 Econadapt project, Deliverable 2.3.](#) – provides guidance on how to consider distributional issues related to employment, and equity, and risk aversion in CBA.
- Institutional Investor Group on Climate Change (2025) [The Physical Climate Risk Appraisal Methodology \(PCRAM\) 2.0](#) – Guidance on a new approach to including climate impacts within the cash flows and appraisal of projects.

Case Studies and Examples

- BASE (2015) [Deliverable 5.2 - Economic evaluation of adaptation options](#) – An economic evaluation of adaptation options for 27 different case studies across Europe.
- EIB Advisory Hub (2022) [Climate change adaptation and economics and investment decision-making in the cities. 'How to guide' and case studies.](#) – The EIB toolkit presents case studies in Loule (Portugal), Turku (Finland), Genoa (Italy) and Glasgow (United Kingdom) to illustrate the use of decision-making tools in different urban contexts.
- Whitsunday Regional Council, Australia (2020) [Report to Whitsunday Regional Council: Cost benefit analysis of coastal hazard adaptation options](#)
- Sniffer (2023) [Craigleith Retail Park Case Study](#) - This report explores the potential economic and financial case for nature-based solutions at a retail park in Edinburgh. It assesses the relevance of a range of sources and instruments based on the benefits of the project, as well as potential revenue streams that could be mobilised. It then appraises the economic and financial case and structures a financial model.
- IIGCC (2025) [Making the case for resilience investment: PCRAM 2.0 case study, solar and mini hydro \(Stafford Capital Partners\)](#)
- IIGCC (2025) [Making the case for resilience investment: PCRAM 2.0 case study, ferry and port \(PIDG\)](#) – use of light touch adaptive pathway thinking to support resilient ferries and port services.

Task
4.2

Assess economic and financial returns



Explainer: Economic and financial appraisal

Options appraisal is a standard part of policy and project analysis, and national governments and regions have existing guidelines and decision support tools to help in prioritising options.

While they are closely related, the economic and financial appraisal are different.

- Economic appraisal – as used by Governments and Multi-lateral Development Banks (MDBs) – is based on the principles of welfare economics, and aims to assess the ability of a policy, programme, investment or project to improve social welfare or wellbeing. It is therefore carried out from the perspective of society and includes the economic valuation of non-market effects, such as environmental benefits and costs. This enables assessment of the socio-economic costs, benefits, and other dimensions of alternative choices.
- Financial appraisal is different and considers the incremental revenues and costs generated by an investment, and the ability to generate cash flows that might be used to repay any financing. It is therefore carried out from the perspective of an investor (not society as above). A financial analysis excludes environmental or social benefits except where these are reflected in financial cashflows. It will also consider the cost-recovery objectives and mechanisms, and it will often also undertake a financial and fiduciary analysis of the implementing and executing entity.

Economic and financial analysis both involve the identification of benefits and costs and convert these cost and benefit streams/cash flows to present values using discount schemes. Both generate net present value (NPV) and can be used to estimate the internal rate of return (IRR) indicators.

Results for both can be expressed through a number of metrics including

- **Cost – Benefit Ratio** – the ratio between the total costs of a project and its projected economic or financial benefits. (e.g. a 1:2 ratio means that every €1 invested generates €2 in benefits)
- **Net Present Value** - the difference between the present value of cash inflows and the present value of cash outflows over a period of time. A positive value highlights the project will generate value.
- **Internal rate of return** – the metric used to estimate the profitability of a project. It is the annual rate of growth that an investment is expected to generate.

Results from an economic appraisal can be expressed as the Economic Net Present Value or Economic Internal Rate of Return (ENPV, EIRR), whilst outputs from financial appraisal can assess the financial net present value (FNPV), or financial internal rate of return (FIRR).

Detailed appraisal of adaptation options involves several challenges, including uncertainty and the context specific nature of adaptation. As a result, the most common appraisal and decision support tools have limitations. There is a growing consensus that adaptation appraisal should incorporate uncertainty, and that this requires extended analysis within existing appraisal methods or the use of new decision methods that more fully capture uncertainty. As a result, a number of different decision support methods have been developed. For projects where adaptation is the primary objective, or where there are material economic or financial impacts associated with high physical climate risks, these methods may be justified. However, they are complex to apply, require detailed data and are time consuming and resource intensive. Many projects may only require a 'light-touch' economic appraisal to introduce an economic rationale for adaptation. Light-touch economic appraisal may also have a role in either screening high physical climate risk projects or projects where adaptation is a primary objective. The EIB advisory hub provides an [overview of when different methods should be applied](#).

Task
4.2

Assess economic and financial returns


Case study: Using models to undertake economic and financial appraisal of adaptation options for the wine sector in Tuscany (Cost-Benefit Analysis)
Introduction

As Climate Change is affecting Chianti wine production in Tuscany, a model-based assessment of adaptation options was applied to address grape yield and quality loss and measure the benefits and costs of adaptations to provide choices for farmers on adaptation measures. The study combined six regional circulation models (RCMs) with an existing meteorological data set of Tuscany to simulate the grape yield and quality response to climate change. The study then undertook an economic analysis for two important adaptation measures: (a) relocating the grape production area uphill, where there is less climate impact on wine quality, and (b) using an “exotic” grape variety (e.g. a southern Italian variety), which is drought resistant, to replace the current grape variety.

Core information

Using simulation models for different scenarios can provide decision-makers with information about plausible futures under climate change uncertainty and possible response measures. However, indirect benefits of adaptation measures are not considered in the current optimisation model because it is difficult to quantify them, and the study focused on the net benefit optimisation.

Key takeaways

The study used sensitivity analysis for time horizon and discount rate to confirm the theory of investment under uncertainty, showing a shorter time horizon (or more frequent investment) gives the possibility to postpone the decision to implement adaptation measures due to the value of flexibility, while a higher discount rate leads to a later adaptation decision, because uncertainty creates a value of waiting for new information.

For decision-making under climate change uncertainty in this adaptation situation, the study recommended using a combination of the adaptation measures starting with relocating, because the benefit of a new variety is not yet certain.

Source

Zhu et al. (2013) [A model-based assessment of adaptation options for Chianti wine production in Tuscany \(Italy\) under climate change.](#)

Task 4.3 Matchmake actions with funding and financing opportunities

RRJ Task(s)	CRIP Template Section	Effort	Importance
3.2 Design a Portfolio of Interventions, 3.3 Preparing for implementation	5.1, 5.2	High	Essential but advanced

What is this task about?

This task matches packages in the strategy and/or action plan to possible funding sources and instruments. It uses a decision-tree approach which investigates the potential role for public and private finance, before then exploring the more detailed sources, instruments and financing models. It also considers innovative models from elsewhere, and the reforms needed to mobilise such flows.

What are the key inputs for this task?

The mapping of benefits from Task 4.1 and the economic and financial appraisal from Task 4.2

What are the outputs?

The output is a summary of the financing approach for the package of investments for the strategy and action plan.

Why is it important?

To date, European regions have typically focused on mobilising finance from EU and public sources. This includes the EU LIFE programme, Cohesion Funding and Horizon, and to a lesser extent the EIB. However, even with the increased climate funding through the next Multi-Annual Financial Framework, public finance alone will be insufficient to meet regional adaptation finance needs.

Therefore, using public funding strategically to engage and unlock private funding and finance is particularly vital, as it can significantly augment public resources and drive innovation in adaptation solutions. By aligning climate risk responsibility and costs and benefits of adaptation across different actors, as well as identifying opportunities for

private sector involvement and reforming enabling conditions to incentivize investment, regions can tap into new sources of funding. This not only helps meet immediate adaptation needs but also ensures long-term financial sustainability and resilience in the face of climate change challenges.

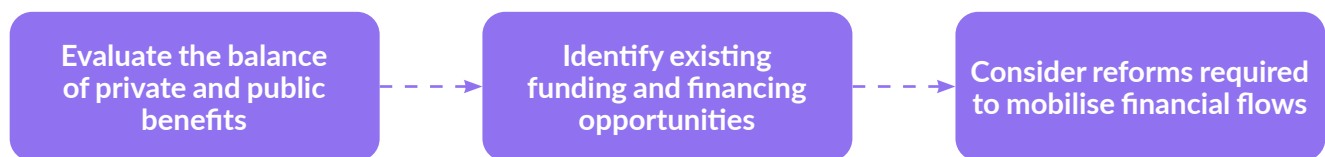
What should you focus on the first time round?

In the early iterations focus on unlocking the more straightforward finance options, or those where there are clear sources and instruments, to become more familiar with the process. In future iterations you can focus on more complex arrangements where dedicated business models are needed, and more effort is required.

**Task
4.3**
Matchmake actions with funding and financing opportunities
How can you complete it?

Matchmaking involves a three step approach which considers the balance of benefits and beneficiaries, considering existing private and public financing opportunities as well as reforms required to bring about these flows:

Figure 27: Approach to finance matchmaking for packages or projects.



Source: Authors.

Step 1: Evaluate the balance of public and private sector benefits

Evaluate the overall balance of private and public benefits that the actions or packages provide and use this to guide the funding mix you want to obtain towards the activities, and therefore the typical types of actors who are likely to have an interest in paying. This should be based on range of benefits identified in Task 3.1 Task 4.1 as well as the economic and financial performance in Task 4.2

The decision tree below can be used as a guide to set some high level principles about whether the packages are likely to be funding or financed by the private sector. The decision tree uses the economic and financial characteristic of a project or package in the strategy or action plan to under-

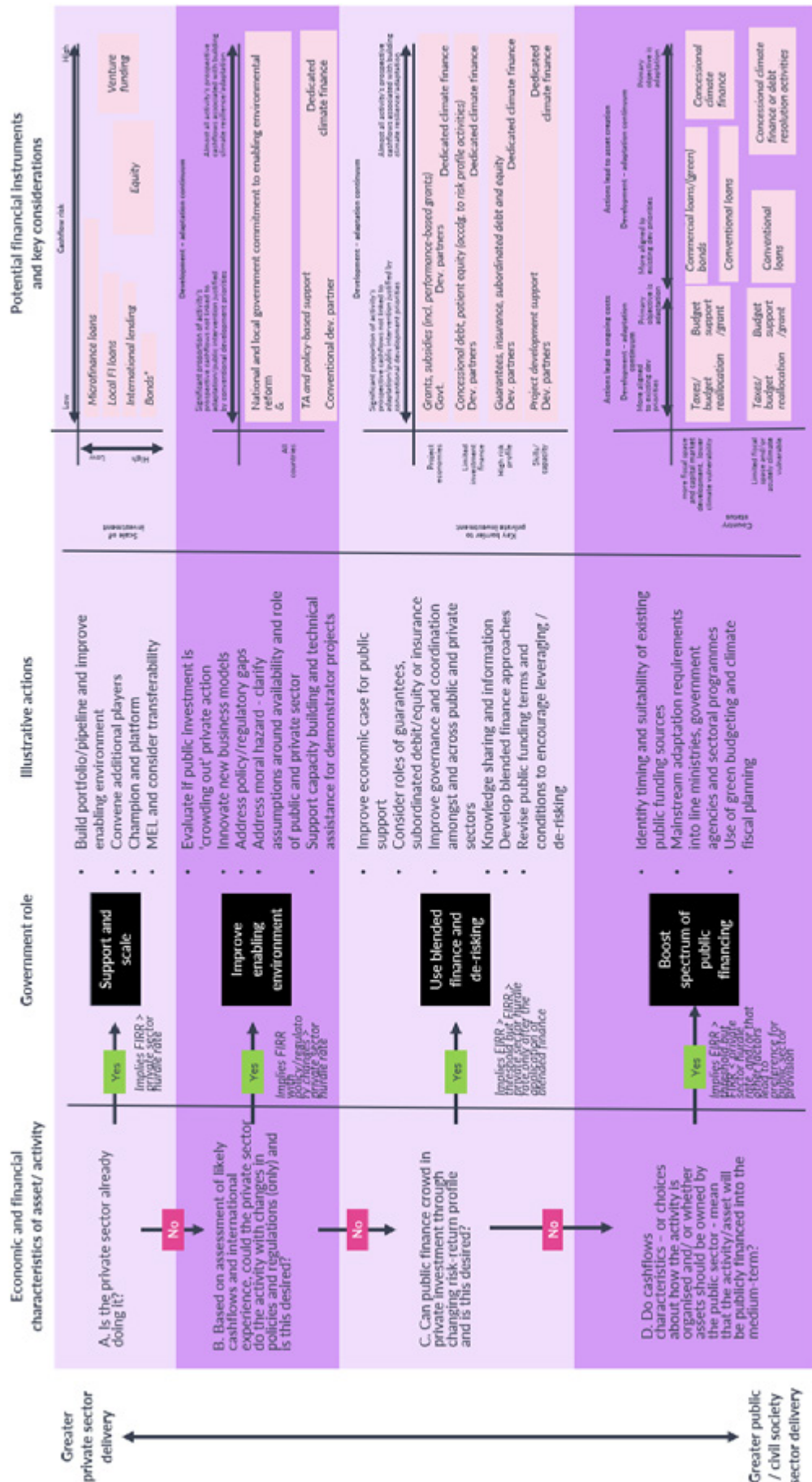
stand its suitability for private sector support and an associated role for Government. The idea is to evaluate where activities are profitable and the private sector is already undertaking them, before evaluating whether increasing levels of public involvement can be used to realise the benefits, as the economic benefits increase and financial benefits decrease. Each level of the decision tree also contains illustrative actions and typical financial sources instruments for consideration.

To support this evaluation, it can be helpful to extend the work identifying economic and financial benefits to include the beneficiaries. An example is shown below.

**Task
4.3**
Matchmake actions with funding and financing opportunities
Table 17: Example of an evaluation of benefits and beneficiaries for packages of investment to reduce flood risk.

Package component	Benefit	Type of benefit	Nature of benefit	Size of benefit	Beneficiaries
Nature-based solutions for the built environment	Flood risk reduction	Adaptation benefit	Public	M	Downstream building owners, Municipality
	Reduced insurance premiums / claims	Adaptation benefit	Private	L	Insurers, policyholders
	Reduced maintenance costs	Co-benefit	Private	L	Building owners, tenants
	Productivity benefits – reduced temperature	Adaptation benefit	Public	L	Health bodies, Businesses
	Improved air quality	Co-benefit	Public	L	General public, health services
	Increase in rental yields	Co-benefit	Private	M	Building owners
	Increase in property values	Co-benefit	Private	M	Building owners
	Carbon Storage	Co-benefit	Public and Private	M	High emitting companies
	Reduced water treatment costs	Co-benefit		M	Water companies, billpayers
	Improved biodiversity	Co-benefit	Public	L	General public
Resettlement with coastal and river planning	Reduced damages	Adaptation benefit	Public	M	Adaptation organisations
	Improved land values for	Co-benefit	Public	L	Public sector agencies
	Improved productivity	Adaptation benefit		M<	
	Improved reliability of tax revenues	Adaptation benefit		M	
Climate Proof Highways	Reduced repair and maintenance costs	Adaptation benefit	Private	M	Highways teams
	Reduced economic disruption	Adaptation benefit	Public	H	Local businesses
Early Warning System Extension	Reduced damage to property	Adaptation benefit	Private	H	Businesses and citizens
	Avoided physical and mental health impacts	Adaptation benefit	Public and Private	M	Health bodies
	Reduced insurance premiums / avoided costs	Adaptation benefit	Private	L	Insurers, policyholders

Figure 28: Decision tree for determining private sector suitability of activities, and associated roles of government



Source: Taylor, R., England K., and Lea Eggert, (2025) based on ADB (forthcoming), World Bank (2019).

**Task
4.3**
Matchmake actions with funding and financing opportunities
Step 2: Identify public and private financing opportunities

Having identified the broad economic and financing characteristics of the action or packages and the beneficiaries, you should begin to consider the potential public and private opportunities for funding or financing. This should consider both sources that could be leveraged as a result of the adaptation in the package, as well as external sources and instruments.

For opportunities within the project, you should identify how the adaptation could create theoretical revenue streams from each of the beneficiaries which might be able to contribute to the financing of adaptation. These could include cost savings and avoided damages, but also increased productivity, or enhanced ecosystem services, as well as private sector benefits such as improved competitive advantage, or reduced costs. This will help identify their potential roles as sources of capital to meet the investment needs for each sector or risk area identified in the pathways and their actions (RRJ Step 3.1.2a).

Table 18: Illustrative mapping of revenue streams from package/project benefits and beneficiaries.

Category	Benefit	Nature of good	Beneficiaries	Revenue streams
Adaptation benefits	Flood risk reduction	Public	Downstream building owners, Municipality	Avoided damages
	Reduced insurance premiums / claims	Private	Insurers, policyholders	Avoided costs
	Reduced maintenance costs	Private	Building owners, tenants	Avoided costs
	Productivity benefits – avoided damages	Private and public	Government, Businesses	Increased output and profits
	Improved air quality	Public	General public, health services	Avoided respiratory treatment costs
	Increase in rental yields	Private	Building owners	Increased rental fees
	Increase in property values	Private	Building owners	Increased monthly rentals
	Carbon Storage	Public	High emitting companies	Carbon Credits
	Reduced water treatment costs	Private	Water companies, billpayers	Avoided costs
	Improved ecosystem services	Public	General public	Biodiversity credits
	Improved reliability of tax revenues	Public	Government, general public	

**Task
4.3**
Matchmake actions with funding and financing opportunities

Category	Benefit	Nature of good	Beneficiaries	Revenue streams
Co-benefits	Reduced repair and maintenance costs	Public	Highways teams	Reduced maintenance costs
	Reduced economic disruption	Private and public	Local businesses	Improved profitability
	Reduced damage to property	Private	Businesses and citizens	Avoided damages
	Avoided physical and mental health impacts	Private and public	Health bodies	Avoided damages
	Reduced insurance premiums / avoided costs	Private	Insurers, policyholders	Avoided costs

You should then consider the potential to capture these revenues or benefits. Value capture refers to the process by which the project secures a portion of the value it has created converting it into revenue or profit. For example, could local businesses be asked to contribute to the financing of the pathway?

For example, could benefits be considered by a new set of taxes? Only include those mechanisms you feel would be viable in your region - it may not be feasible or cost effective to capture all the benefits and co-benefits, or further action may be required to incentivise behaviour. An illustrative table showing this is below:

Table 19: Adaptation benefits and co-benefits, revenue streams and value capture mechanisms for a sample package or project.

Benefit	Nature of good	Beneficiaries	Revenue streams	Value capture mechanism
Flood risk reduction	Public	Downstream building owners, Municipality	Avoided damages	Voluntary contributions / local levy
Reduced insurance premiums / claims	Private	Insurers, policyholders	Avoided costs	Direct contracts
Reduced maintenance costs	Private	Building owners, tenants	Avoided costs	Direct contracts
Productivity benefits	Private and public	Health bodies, Businesses	Increased output and profits	Local levy
Improved air quality	Public	General public, health services	Avoided respiratory treatment costs	
Increase in rental yields	Private	Building owners	Increased rental fees	Business Improvement District
Increase in property values	Private	Building owners	Increased monthly rentals	Building Transaction Tax

**Task
4.3**
Matchmake actions with funding and financing opportunities

Benefit	Nature of good	Beneficiaries	Revenue streams	Value capture mechanism
Improved reliability of tax revenues	Public	Government, general public	Government revenues	Hypothecation
Carbon Storage	Public	High emitting companies	Carbon Credits	Local carbon levy
Reduced water treatment costs	Private	Water companies, bill-payers	Avoided costs	Savings contracts
Improved ecosystem services	Public	General public	Biodiversity credits	Local nature markets
Improved decision making	Public	Adaptation organisations	Increased effectiveness	
Reduced repair and maintenance costs	Public	Highways teams	Reduced maintenance costs	Direct contribution
Reduced economic disruption	Private and public	Local businesses	Improved profitability	Business Improvement District
Reduced damage to property	Private	Businesses and citizens	Avoided damages	
Avoided physical and mental health impacts	Private and public	Health bodies	Avoided damages	
Reduced insurance premiums / avoided costs	Private	Insurers, policyholders	Avoided costs	

Source: Authors.

In parallel to assessing the beneficiaries and revenue streams, use the Pathways2Resilience sources and instruments catalogue and other sources of information to generate a longlist of additional funding or financing sources (and associated instruments) that are available. You should also build on the outputs of Tasks 2.1 and 2.2, zeroing-in on the specific sources and instruments that are of relevance once the pathways are formulated. Then begin to appraise each source and instrument as to whether they would be suitable for use in the package.

This should focus on three criteria: acceptability, deliverability and quantum:

- **Acceptability:** Will the approach be acceptable to the relevant parties?
- **Deliverability:** How likely is it that this approach can be used to deliver the adaptation outcomes envisaged (i.e. is it technically possible)?
- **Quantum:** Will the approach provide the appropriate scale of financing required for the pathway and actions, either by capturing the value, or from elsewhere?

**Task
4.3**
Matchmake actions with funding and financing opportunities

An example evaluation is shown below (Table 20):

Table 20: Sample evaluation of existing sources and instruments for an adaptation pathway.

Source	Instruments	Mechanism type	Acceptability	Deliverability	Quantum
EC	LIFE	New	High	Medium	Medium
	ERDF	New	High	High	Medium
EIB	Framework Loan	Existing	Medium	Low	High
Regional Government	Own resources	New	Medium	High	Low
National Government	Flood Risk Management Fund	Existing	High	High	Medium
Businesses	Local Taxation	New	Low	Medium	Medium

These should be scored from different perspectives – e.g. from the public sector and private sector, or through a workshop-based approach to generate consensus on the priorities. If there is consensus between the key stakeholders, then these should be considered as the main approaches for the financing strategy for the pathway. If such activities do not yield a financially viable pathway, detailed financial structuring will be needed.

Step 3: Consider reforms required to mobilise financial flows

Finally, you should consider potential reforms to enabling conditions that may be required to mobilise the flows. Examples of things that could be changed to modify the attractiveness of financing include new policies, regulations or taxes, but also better data or evidence or development of new skills.

A key consideration is the extent to which the private sector can be encouraged to contribute to the provision of public goods provided. The table below provides some examples of how policy instruments can incentivise such provision through different channels.

**Task
4.3**
Matchmake actions with funding and financing opportunities
Table 21: Common instruments to support private provision of public goods through different motives.

Instrument	Encourages private provision of public adaptation goods			
	Through financial reward	Through interest in non-monetary benefits	Through altruism	Through coercion
Capacity Building		⊗	⊗	
Awareness raising		⊗	⊗	
Information provision		⊗	⊗	
Regulation				⊗
Public Private Partnerships	⊗	⊗		
Subsidies / Incentives	⊗	⊗		
Tariff charge and tax	⊗			⊗
Trading	⊗	⊗		
Payments for Ecosystem Services	⊗	⊗		
Insurance		⊗		

Source: Authors, updated from Lukat, et al. (2016)

Depending on how benefits accrue (and to whom), you should also consider whether there is the potential to transfer provision between actors. For example, if it possible to quantify financial benefits from flood risk reduction to specific employers, regions could shift the responsibility (and associated costs) of flood recovery from being purely the role of governments to partially making private businesses responsible, or requiring public bodies to have private contributions for projects to proceed. This would allow them to prioritise public funds to protect citizens could provide a strong signal to encourage private sector investment in adaptation. Throughout the process you might wish to consider innovative models or precedents from elsewhere – that combine sources and instruments to successfully mobilise finance.

As with many other stages in this process, it may be helpful to hold workshops and engage with relevant financial experts, government agencies, private sector partners, and community representatives, to understand their attitudes, and share knowledge.

Finally, you should summarise the outcomes of the matchmaking into an Investment Strategy for the packages of near term actions within the Strategy or Action Plan. If such activities do not yield a financially viable approach, consider whether a more detailed financial structuring will be needed (see Phase 5).

**Task
4.3**
Matchmake actions with funding and financing opportunities
Table 22: Indicative financing plan for adaptation packages or subpackage.

Pathway 1: Flood risk in the built environment

1. Pathway overview and costs

The €625m long term set of packages to address flood risk includes a focus on enhancing early warning, and coastal relocation, as well as investments in climate proof highways and increasing the nature based solutions in the built environment.

2. Public / private balance of the pathway

The pathway creates a mix of economic, fiscal and financial (private) benefits. Whilst the economic and fiscal benefits are easily demonstrated and captured, the financial benefits are harder to evidence. Given the relative ease of attributing benefits to p the financial strategy will continue public provision, and address barriers to enhance private provision. Local, Regional and National Government will continue to be responsible for activities which assess flood risk and for delivering schemes. Local Governments will take forward the planning of such schemes, but the pathway will increasingly seek to crowd in contributions from private sector resulting from enhanced value and avoided damages.

3. Economic, Financial and Fiscal benefits to be captured

Benefits	Benefits type	Beneficiaries	Revenue streams	Value capture mechanisms
Increased property values	Private	Property owners	Higher rental yields	Property charges, transaction taxes
Reduced water treatment demand	Fiscal and private	General public	Reduced drainage charges and water treatment costs	Bill rebates, captured by additional rental surcharge
Avoided damages	Economic	Municipality	None	Grant funding from municipal budget

4. Additional external sources and instruments to be leveraged

Source	Instruments	Acceptability	Deliverability	Quantum
EC	LIFE	High	Medium	Medium
	ERDF	High	High	Medium
EIB	Framework Loan	Medium	Low	High
Regional Government	Own resources	Medium	High	Low
National Government	Flood Risk Management Fund	High	High	Medium
Businesses	Local Taxation	Low	Medium	Medium

5. Reforms required to mobilise financial flows

Limited evidence on financial benefits of adaptation – requiring more awareness raising and engagement. Current legislation allows repayment of water savings, but only to bill payers. Could be strengthened through legislative reform which allows repayments directly to project proposers. Data and evidence on costs of a cubic meter is not robust – could consider further research or installation of monitoring and evaluation. Detailed technical knowledge will be needed to help put legal agreements in place. Enhanced coordination will be needed by the region to plan investment.

Source: Authors.

**Task
4.3**

Matchmake actions with funding and financing opportunities



Before moving onto Phase 5 have you:

- ☐ Assessed the potential pathway revenue streams, additional sources, overall financing mix and enabling conditions
- ☐ Documented the investment approach for each adaptation package.
- ☐ Confirmed the envisaged financing plan for the Strategy and Action Plan fit within the region's fiscal space.



Supporting resources:

Guidance and supporting materials

- Pathways2Resilience - Investment Strategies template – This is available in the [toolbox](#).

Case Studies and Examples

- Sniffer (2023) [Craigleith Retail Park Case Study](#) - This report explores the potential economic and financial case for installation of nature-based solutions at a retail park in Edinburgh. It assesses the relevance of a range of sources and instruments based on the benefits of the project, as well as potential revenue streams that could be mobilised. It then appraises the economic and financial case and structures a financial model.
- Khosla, S. and Watkiss, P. (2022). [Developing adaptation finance business cases – case studies and results](#). Summary report to Sniffer. – This report, although focused on individual projects, rather than pathways, evaluates the suitability of a range of different sources and instruments for managed realignment programmes, flood risk management and community resilience programmes.
- IISD (2021) [Innovative Financial Instruments for Climate Change Adaptation](#) - This guide includes a wide range of innovative instruments that can be used to fund or finance adaptation.
- Lukat, E., Rouillard, J., Lago, M., Tröltzsch, J. (2016). Use of non-monetary metrics/weights in adaptation decision-making. In Rouillard, J., Tröltzsch, J., Lago, M., Markandya, A., Sainz de Murieta, E., Galarraga, I., [Distributional objectives and non-monetary metrics. FP7 Econadapt project, Deliverable 2.3](#). – Provides more detailed guidance on the balance of public and private provision of public adaptation goods and the different policy instruments available to consider this mix.

Task
4.3

Matchmake actions with funding and financing opportunities



Case study: CLIMATEFIT: Developing Investment Strategies in European Regions

Introduction

The [CLIMATEFIT project](#), funded by the European Union's Horizon Europe program, is dedicated to enhancing financing of climate resilience and adaptation. It aims to advance climate resilience by developing and applying innovative tools, methodologies, and strategies to support investment in projects in 20 European Regions. It focuses on providing actionable solutions to adapt to the effects of climate change, ensuring that both urban and rural areas are prepared for future climate challenges. The project spans multiple sectors, including agriculture, water management, energy, and infrastructure, reflecting the broad impact of climate change on different aspects of society.

Key takeaways

- **Development of Investment Strategies, Plans and Cases:** The project is developing a suite of tools and strategies tailored to regional needs. This will involve 20 investment strategies of which 10 will progress to investment plans and four will then progress to investment cases.
- **Local Resilience Taskforces:** CLIMATEFIT is developing Local Resilience Taskforces, groups of local stakeholders. These will be used as the basis to develop a European Network of Local Resilience Taskforces.
- **Stakeholder Engagement and Capacity Building:** Engaging stakeholders is a critical component of CLIMATEFIT. The project involves local governments, businesses, community organizations, and other relevant parties in the development and application of adaptation finance strategies. Capacity-building activities, such as workshops and training sessions, are conducted to ensure that stakeholders have the knowledge and skills needed to effectively use the tools and implement adaptation measures.
- **Knowledge Sharing and Dissemination:** CLIMATEFIT emphasises the importance of sharing knowledge and disseminating findings. The project develops resources such as reports, guidelines, and case studies to communicate its results and insights. It also organizes events and activities to promote the adoption of its tools and strategies across Europe and beyond.

Expected Outcomes

- CLIMATEFIT will streamline collaboration for innovative finance across EU contexts, focusing on investment strategies in 20 regions to overcome barriers and support successful financial instruments, using a unified financing framework.
- The project will have delivered a Capacity Building Programme to boost institutional capacity, offering e-learning based on successful initiatives like the EU City Facility project.
- A manual for public authorities on leveraging tailored financing models and creating resources like a leverage manual and priority-setting tools.
- Successful implementation of pilot projects demonstrating the practical application of adaptation measures.
- Strengthened capacity and knowledge among stakeholders to address climate change impacts.

Source: [ClimateFIT](#).

**Task
4.3**

Matchmake actions with funding and financing opportunities



Case Study: Québec: Reinvesting Carbon Revenues into Local and Global Resilience

Introduction

Québec has built one of the most advanced subnational climate finance systems worldwide, showing how regional governments can transform climate policy into a reliable engine for resilience and solidarity. Rooted in the polluter-pays principle, the province ensures every dollar generated through carbon pricing is reinvested in climate action—supporting both its own transition and vulnerable communities abroad. By embedding climate finance into its fiscal framework, Québec has guaranteed predictable, long-term resources for mitigation, adaptation, and international cooperation.

Core Information

Québec's carbon pricing journey began with a fuel surcharge and took a decisive leap in 2013 with the launch of its cap-and-trade system, the *Système de plafonnement et d'échange de droits d'émission* (SPEDE). Linked with California's carbon market under the Western Climate Initiative (WCI), SPEDE created a cross-border market that both reduces emissions and generates significant revenues. Since its launch, the system has raised more than CA\$10 billion (~US\$7.2 billion).

A key strength of Québec's model is its reinvestment mechanism. It channels 100% of proceeds into the dedicated Electrification and Climate Change Fund (ECCF). This ensures transparency, builds public trust, and creates long-term policy certainty by ring-fencing resources for climate action. Local governments are among the main beneficiaries. Since 2021, over CA\$550 million (~US\$390 million) has been allocated to municipalities to develop climate plans, reinforce infrastructure, and launch community projects. Building on this, Québec's 2025-2030 implementation plan announced a further CA\$400 million over five years to accelerate municipal resilience.

Beyond municipalities, ECCF resources support a wide range of initiatives: industrial decarbonisation, clean technology deployment, resilience-oriented R&D, sustainable mobility, just transition measures for workers, and land-use adaptation strategies. By spreading investments across multiple sectors, Québec not only strengthens its economy but also ensures that climate action is deeply embedded in society. Furthermore, through the International Climate Cooperation Programme (ICCP), part of its carbon revenues fund projects in vulnerable Francophone countries, particularly in Africa and the Caribbean. To date, 65 projects have been supported, tackling issues from food security to resilient energy systems.

Québec's approach has made carbon pricing a stable and transparent source of climate finance. Ring-fenced within the ECCF, revenues are invested where they deliver the greatest impact, balancing local needs with global responsibilities. For municipalities, dedicated adaptation funding empowers local authorities to design and implement tailored strategies. For the international community, Québec's solidarity demonstrates how subnational governments can mobilise resources to address shared climate challenges. With more than CA\$10 billion mobilised since 2013, Québec has become a global reference point for integrating carbon revenues into a just and effective climate finance system.

Key Takeaways

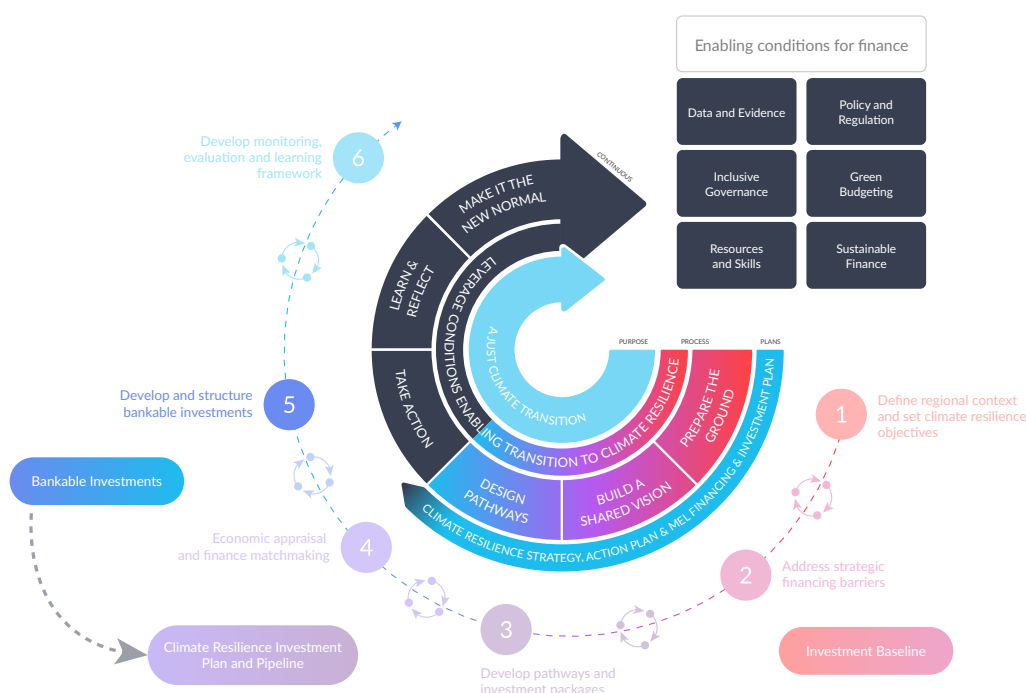
- Over CA\$10bn mobilised since 2013, making it one of the largest subnational climate funds globally.
- Significant, predictable funding empowers municipalities to implement adaptation strategies.
- Through the ICCP, Québec supports climate projects in vulnerable countries, linking local action to international justice.
- It provides a blueprint for how subnational and national governments can integrate carbon pricing with dedicated reinvestment

Sources

- [Gouvernement du Québec. MELCCFP – Cap-and-trade system \(SPEDE\)](#)
- [Québec 2030 Plan for a Green Economy](#)
- [Regions4 Financing Resilience International Forum Shaping a resilient future: Unleashing Finance at the Subnational Level report](#)

Phase 5 – Develop and structure bankable investments

Your proposed Strategy, Investment Plan and Action Plan may include a number of actions which are not yet bankable. The aim of this optional phase is to improve the bankability of the investments in your strategy and/or action plan identified in Task 4.3 that need to be delivered in the near term, but for which no current financing models appear viable, and to develop an implementation plan to allow work to proceed through to financial close and the construction or operation stages. These aspects are likely to be for larger scale, longer term, and more complex projects, though are important for all projects. Whilst the three tasks are presented as linear here, the reality is that they are iterative and require constant feedback and revision based on new findings and analysis.



Links to the Regional Resilience Journey:

AIC tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
5.1 Baseline financial and economic merits	N/A – This set of guidance is an optional extension aimed at enhancing the implementation of action plans	The main output from this stage is an enhanced set of Investment Concepts. This can be used
5.2 Co-design value proposition and business models		
5.3 Develop financial structuring and Investment Concepts.		

Task 5.1: Develop a business model

RRJ Journey Stage	CRIP Template Section	Effort	Essential/optional
Design pathways	5.1, 5.2	Medium	Optional

What is this Task about?

This task is about defining the business model of the project – notably how the project creates and delivers value. It involves identifying the project beneficiaries and revenue streams within the project and setting out the core way in which the project delivers the adaptation and associated co-benefits.

What are the key inputs?

You should use any initial work on financial models in 4.2.

What are the expected outputs?

A business model canvas, and a supporting table mapping the project benefits, beneficiaries, revenue streams and the potential to capture them. If possible, you should also include a diagram showing how the project will be delivered.

Why is it important?

Being clear the value the project is creating, and for whom, and if relevant, whether it can repay financing is a pre-requisite for seeking funding and financing of the project.

What should you focus on the first time round?

Focus on defining the core elements of the business model – notably how the adaptation is delivered, and any revenues within the project. You do not necessarily have to set these out in a financial flow diagram – though it is helpful if resources allow.

**Task
5.1**
Develop a business model
How can you complete it?
1. Document the business model

Building on the measures and costs of the action plan in Task 4.1, begin to document the key components of the business model, and draw the overall organizational structure, business model and financial flows onto a diagram. Key information to document includes:

- A short description of the project and its key activities
- The key stakeholders and their envisaged roles
- The main resources required
- The costs associated with delivering it
- The value proposition – namely the main benefits and co-benefits, beneficiaries, any revenues and the preferred options for capturing their value.
- A summary of the current enabling conditions for the project and how they could further be enhanced to improve project bankability.
- A written description of the business model

Start by identifying whether adaptation is a primary objective (dedicated adaptation), a secondary objective (climate proofing), or a mixture of both. For climate proofing projects, there are typically existing financial or delivery arrangements which provide a pre-existing set of options and constraints (e.g. consumer bills in infrastructure). If these exist, these should be identified and outlined.

A key resource to help you do this is the Business Model canvas. This captures the key components, allowing you to write a concise summary of the business model. Whilst originally private sector focused, it has been developed further to be relevant to regional governments, and for adaptation. A template is shown below, updated from previous work developing it for use in nature-based solutions projects:

Figure 29: The Business Model Canvas.



Source: Authors, updated from Connecting Nature (2019) and Strategyzer, 2024.

Task 5.1

Develop a business model

The value proposition section has been expanded to move from financial benefits to the wide range of economic social and environmental benefits, whilst project flexibility seeks to identify viable project flexibilities which for changes in costs and benefits can be reduced through delivery (e.g. through volunteers), or the size of project. Finally, Value capture refers to how to generate revenue from goods and services delivered to users and customers – in this case by capturing the benefits for use in repaying funding or financing. More detailed guidance on the other sections can be found in the Connecting Nature business model canvas (link below).

For more complicated projects, you may wish to systematically quantify the project benefits, whether they are public or private, and how they can capture value through revenue streams.

To do this, follow similar steps as for Investment Strategies in Task 3.3. and map the benefits that arise from the project, and whether they are public or private. These may be direct adaptation benefits (e.g. reduced flood damage to infrastructure or homes, water treatment costs, reduced mortality and morbidity). It may also include co-benefits (such as improvements in health, carbon storage, or increases in property values), as well as additional value generated from seeing investments' synergies with other activities (e.g. unlocking development). For each benefit, list if the benefit is public or private, the beneficiaries, and the value/revenue streams that the project creates for them. If known, include quantitative details, and ideally financial information. Examples would be estimates of the avoided damages from reduced flood risk or increases in property value from investments in nature-based solutions. An example is shown below:

Table 23: Example of project benefits for a nature-based solutions project to tackle flooding in Edinburgh, UK.

Category	Benefit type	Nature of good	Beneficiary	Revenue streams
Adaptation benefits	Moderation of extreme events – Drainage Infrastructure	Public	Scottish Water	Avoided infrastructure investment costs, Avoided running costs
	Moderation of extreme events – Surface water	Public and Private	City of Edinburgh Council, Tenants, Nuveen	Avoided infrastructure investment costs, Avoided running costs.
	Moderation of extreme events – Insurance claims	Private	Tenants, Insurance industry	Reduced insurance premiums
	Wastewater treatment	Public and Private	Scottish Water, Tenants	Avoided infrastructure investment costs, Reduced wastewater charges
Co-benefits, environment (Regulating services)	Local climate and air quality regulation	Public	City of Edinburgh Council, Nuveen, Tenants	Grant finance
	Carbon sequestration and storage	Public / private	Edinburgh City Council, NatureScot, high emitting companies	Government net zero / carbon credits (note private Carbon Credit markets would have lower values)
Wider Amenity benefits	Economic growth and property value uplift	Private	Nuveen Real Estate	Increased rental fees

Source: England et al., 2023.

**Task
5.1**
Develop a business model

Having identified the value created, for each benefit, identify instruments and mechanisms that could be used to capture this value – such as project co-financing, or new or modified contractual payments that reflect the benefits and the overall viability of these. Consider the likely willingness to pay, ability to pay, as well as how likely it is to be able to realise in practice, as well as its relative contribution to total project costs. An example template is included below:

This process will help you prioritise where to target efforts to realise these different benefits as part of constructing the overall business model. Table 24: Template to evaluate potential for value capture from project benefits.

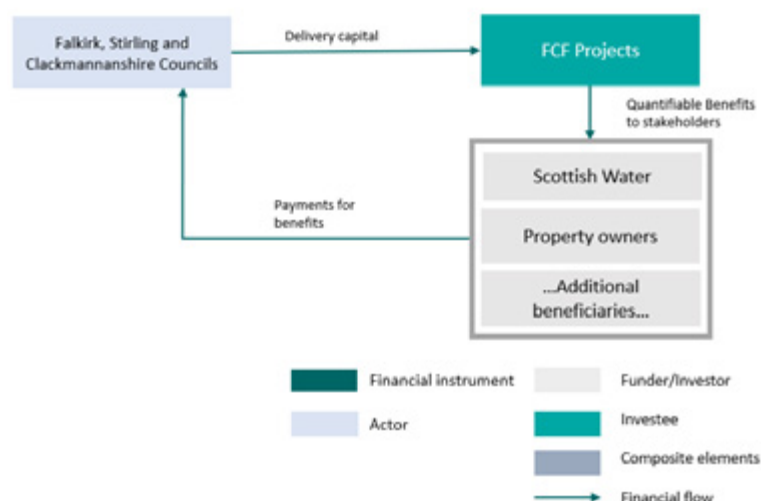
Benefit type	Willingness to pay	Ability to pay	Deliverability	Overall magnitude (as % of costs)	Overall viability
Increased real estate rents	M	H	M	Medium	Medium
Carbon Credits	H	H	M	Very low	Medium
Reduced water treatment costs	M	H	L	High	Medium

2. Set out a business model diagram

Use the elements of the business model canvas, and the more detailed analysis on benefits, beneficiaries and revenue streams to document the core way in which the project will be delivered, by who, and the main repayments / value creation and capture. An example diagram is shown below.

Note this is an iterative process and you may have to repeat this process a number of times, both in the development of the business model, but also as a result of the financial structuring and delivery plan in Tasks 5.2 and 5.3.

Figure 30: Outline of a business model for a climate forest project in Scotland.



Task
5.1

Develop a business model



Before moving onto Task 5.2 have you:

- ☐ Documented the overall business model in a business model canvas?
- ☐ Assessed the detailed benefits, beneficiaries and revenue streams.
- ☐ Drawn the overall business model in a diagram?



Supporting resources:

- Strategyzer (2024) [Business model canvas](#) – the Business Model Canvas is a strategic management and entrepreneurial tool. It allows you to describe, design, challenge, invent, and pivot your business model. This includes a downloadable template and an overview of the approach.
- Connecting Nature (2019) [Nature-Based Solutions Business Model Canvas Guidebook](#) – an updated version of the business model canvas, used for delivering NBS.
- Toxopeus, H.S. (2019) [Taking Action for Urban Nature: Business Model Catalogue, NATURVATION Guide](#) - A collection of 'typical' business models used for financing nature-based solutions projects.
- PWC and InnovateUK (2023) [Financing Local Net Zero Projects](#) – This outlines an approach for financing local net zero projects for start to finish for Public Authorities. Whilst it focuses on mitigation, it provides guidance on many of the considerations of financial structuring, including business models and commercial structures.
- Pathway2Resilience (2025) Adaptation Business Model Canvas – This is available in the [toolbox](#) and will allow you to develop your own business model, whether individually or in groups.

Task 5.2 Undertake financial structuring

RRJ Journey Stage	CRIP Template Section	Effort	Essential/optional
Design pathways	N/A	Medium	Optional

What is this Task about?

This task is about defining how the business will be funded and optimised, through the use of financial structuring. Financial structuring refers to the creation and organisation of dedicated financial arrangements between relevant parties for a programme, project or action so that it channels initial resources from sources to those delivering the project, captures the value generated and repays the costs through revenue flows and benefits, and achieve the adaptation objectives. It also successfully allocates the risk and rewards between parties. This includes the upfront funding or financing (sometimes known as the capital stack), as well as the maintenance and operations and the repayment of debt.

What are the key inputs?

The key inputs are the overall business model developed in in Task 5.1.

Why is it important?

Financial structuring helps distribute the risks and rewards across the parties, aligning risk-return profiles with investor expectations. An implementation plan clearly demonstrates that the project can be delivered in practice. Together, they provide confidence to funders and finance

What should you focus on the first time round?

Focus on defining the core financial arrangements that will allow the project to proceed in the simplest way. Future versions could focus on mobilising additional sources or using more complicated instruments.

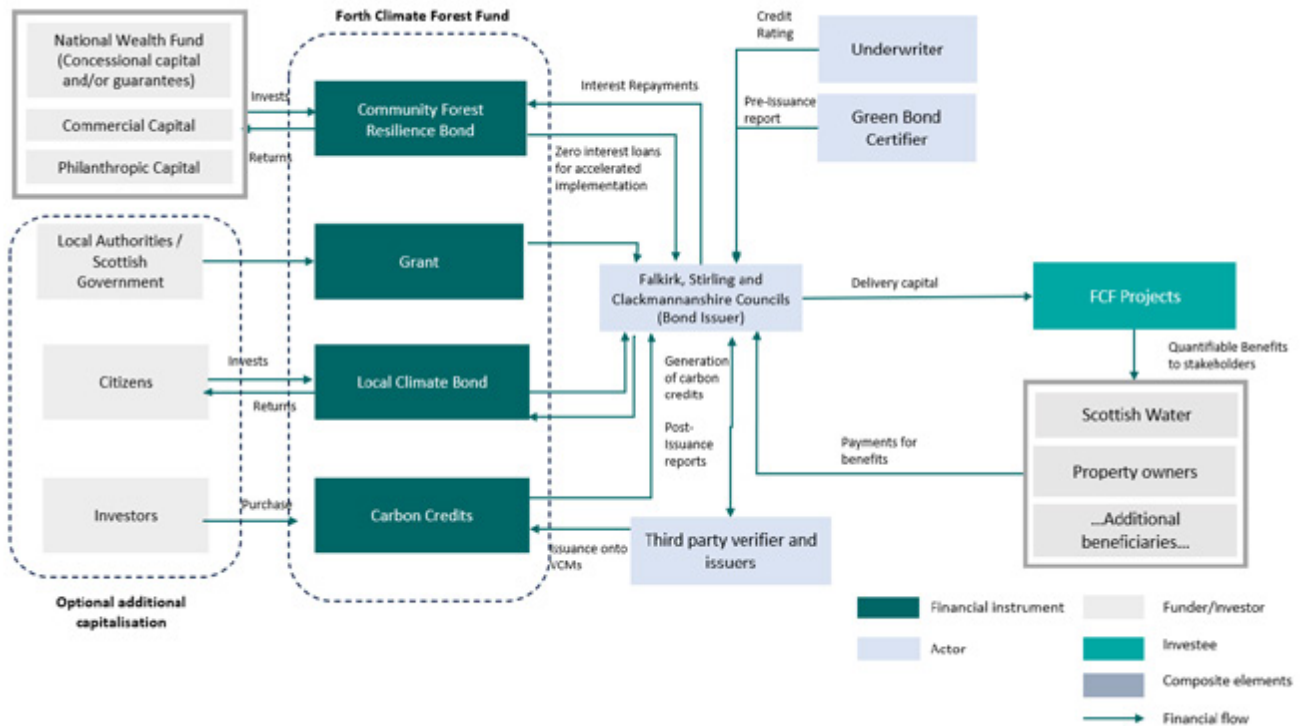
What are the expected outputs?

A core output of this process is a financial structure diagram. This identifies the key actors from a financing perspective and documents the flows of finance into and out of the project. This is similar to, but different from, a project governance diagram, which will typically illustrate reporting and delivery arrangements and contractual relationships. An example for an urban forest fund structure, building on the business model show in Task 5.1 is shown (Figure 31):

**Task
5.2**

Undertake financial structuring

Figure 31: Illustrative financial flow diagram for a regional climate forest fund.



Source: England and Watkiss, 2025.

How can you complete it?

This involves three main steps:

1. Select preferred sources and instruments



2. Define and document financial structure



3. Optimise financial structure

1. Select preferred funding and financing sources and instruments

Review the appraisal of additional sources and instruments for the Investment Strategy in Task 3.3, as well as the appraisal of value capture in the business model in Task 5.1 and decide on the mix of sources and instruments that you will use in the financing arrangements. Where possible, secure written assurances for their contributions. For example, this could be a heads of terms,

a grant or loan agreement letter. As part of this, you should consider additional sources and instruments beyond those identified as beneficiaries to the project.

Task 5.2

Undertake financial structuring

2. Define and document the financial structure

Start to develop the financial structure and develop an overall diagram. Start by mapping the key organisations which have a financial role in the project. This covers those providing upfront funding and finance but also those that receive finance and then spend it to enable delivery (e.g. through projects), as well as those who repay. Link the boxes with arrows that represent the financial flows, then layer on boxes between the different actors which represent the types of instruments that will be used to facilitate them flows, such as a grant, commercial loan, etc. Label the arrows to illustrate the type of transactions happening.

3. Optimise the financial structure

Finally, having completed an initial financial structure, work to optimise it further, by challenging the initial approach, exploring similar work in other best practices and considering opportunities to improve the enabling conditions.

3.1 Project structure

In reviewing the project structure, key questions to consider include:

- **Could actions or delivery approach be rescope**
- Could you adjust the actions or delivery approach to provide wider benefits which could mobilise additional funds (e.g. could you position the pathway as a demonstrator project to attract University research funding which could cover costs)?
- **Would strategic public finance unlock wider finance** – e.g. to de-risk the project, or to leverage private finance, through some kind of blended finance. For example, could you use national and EU-level funding programs, grants, and incentives to support regional adaptation efforts?
- **Could insurance be a targeted mechanism to help** – either as part of the adaptation pathway itself, or as a mechanism to reduce risks in delivery of projects? You could explore the potential

of innovative insurance products and financial instruments that can be leveraged to support adaptation efforts, such as parametric insurance, catastrophe bonds, and resilience bonds.

- **Can you change roles and responsibilities to better align risks and rewards** – would some partners be willing to change their levels of risk (and associated financing or funding or revenue share) or reduce financing terms to better balance their financial and adaptation contribution? Could other partners be included to reduce costs or better optimise delivery?

In many cases, a combination of all these aspects will be needed, and you should take an iterative approach to understand potential effects on the overall bankability of the actions.

Best practice examples

Innovative financing for adaptation is a rapidly advancing area. In addition to looking at the project structure itself, you should explore whether there are lessons from new governance or innovative financial instruments. For example, could newer and more innovative financing instruments be used to leverage the benefits such as green bonds, climate funds, and public-private partnerships? You may also wish to review similar examples of adaptation projects that have been successfully funded or financed to better understand the way in which the funding was structured. There are various sources of information, including the best practice examples from the Pathways2Resilience catalogue, case studies from CLIMATEFIT project, project databases from LIFE, Cohesion Policy, [EIB project pipeline](#), [CCFLA's financial instrument case studies repository](#) (includes both adaptation and mitigation) and Climate ADAPT.

**Task
5.2**

Undertake financial structuring

Whilst the business and financial models for adaptation projects are context specific, there is still merit in reviewing similar examples that have worked elsewhere in the world, or where they haven't and why. This will help optimize the project's own approaches and highlight potential areas to be concerned about. It will also provide confidence to stakeholders that similar projects have been undertaken before.

Enabling conditions

Finally, it is important to document the existing enabling conditions the project relies on, as well as further improvements that could increase project viability. This includes capacity building efforts and institutional strengthening which address barriers and constraints (e.g. improving information, and reforming institutional arrangements and processes), as well as measures which create the enabling environment for adaptation (e.g. policy, regulation legislation). It is also important to ensure these activities are also financed. Start by reviewing those enabling conditions developed in Phase 4 and build on them to document the current enabling conditions and identify a series of actions to pursue that improve the overall enabling conditions.

This approach can be delivered in many ways, including a desk-based approach, as well as workshops with the project teams. For projects which are likely to seek private sector financing, you may also wish to host investor pitch days, bringing together potential financiers to understand their concerns and requirements and help you refine your approach.

The main aim is to create a final record of the flows of funds throughout the project lifetime. This starts with initial finance flows into the project (e.g. from funders or financiers), how it is spent, and where relevant, how revenues are generated (e.g. from property rental), or value is generated, and how funds are repaid. You may also choose to include the amounts envisaged through flows and how they flow over time (e.g. annual payments) Depending on the complexity of the projects, you may wish to draw financial flows as part of a wider governance diagram or create a dedicated financial flow diagram.



Before moving onto Task 5.3 have you:

☐

Defined the sources and instruments?

☐

Defined and documented the financial structure?

☐

Considered additional ways to optimise the financial structure?

Task
5.2

Undertake financial structuring



Supporting resources:

- ClimateFIT (2025) Developing an Investment Concept: A Handbook for Public Authorities
- Toxopeus, H.S. (2019) [Taking Action for Urban Nature: Business Model Catalogue, NATURVATION Guide](#) - A collection of 'typical' business models used for financing nature-based solutions projects.
- PWC and InnovateUK (2023) [Financing Local Net Zero Projects](#) – This outlines an approach for financing local net zero projects for start to finish for Public Authorities. Whilst it focuses on mitigation, it provides guidance on many of the considerations of financial structuring, including business models and commercial structures.
- CPI (2024) [Building Financial Instruments for Climate adaptation](#) – This report provides recommendations for developing effective financial instruments that meet the growing demand for adaptation finance. It is based on lessons developing over 20 adaptation-focused instruments from the Global Innovation Lab for Climate Finance.
- Gridlines (2025) [Structuring infrastructure project finance models – a comprehensive guide.](#)

Case studies:

- Khosla, S. and Watkiss, P. (2022). [Developing adaptation finance business cases – case studies and results.](#) - This report examines the opportunities for public, private, blended and third sector finance for three projects in Scotland that would have traditionally been public grant financed - a coastal managed realignment, a flood management project and a community climate resilience project.
- England, K., Watkiss P., and Hunt, A. (2023) Adaptation Finance Case study 2023L Craighleith Retail Park Demonstrator - Showcases the business model development process, including valuing the adaptation benefits and co-benefits of a project to help improve bankability and inform the business model for a nature-based solutions project in Edinburgh.
- [Global Innovation Lab for Climate Finance](#) – The lab is providing support to a wide range of financial instruments for adaptation. Whilst different to project finance, they include a wide range of instruments, financial flow diagrams and descriptions of how ideas have been realized into successful approaches to financing adaptation

Task 5.3: Develop a commercial structure and delivery plan

RRJ Journey Stage	CRIP Template Section	Effort	Essential/optional
Design pathways	N/A	Medium	Essential

What is this Task about?

The aim of this task is to ensure you have a clear commercial approach and delivery plan which allows the project to be executed and implemented.

What are the key inputs?

The business model developed in Task 5.1, and the financial structuring in Task 5.2.

Why is it important?

Any project must be delivered in a way which is robust and credible, as well as being in line with standard practices and legal requirements.

What should you focus on the first time round?

All aspects of this activity are important. Focus on ensuring the arrangements are concrete and robust, within the resources available for the task.

What are the expected outputs?

A delivery plan for the project, considering legal requirements, contracting and risk, delivery and governance, procurement arrangements and accounting and tax requirements.

How can you complete it?

Work through each of the five areas below that are typically required to be able to deliver a large-scale project in practice. They are delivery and governance, procurement, legal, contracting and risk and accounting and tax

Figure 32: Common components for consideration of a project delivery plan.



Source: Authors.

**Task
5.3**
Develop a commercial structure and delivery plan

Procurement – Develop a procurement strategy for the project. This should outline which elements of the project are subject to procurement law, what procurement routes will be used, overall timescales for each procurement and how and when soft market testing might be used. If the project includes new technologies or innovative approaches you may also wish to consider the use of [Pre-Commercial Procurement](#) or the [Public Procurement of Innovative Solutions](#).

Legal – Consider the main areas where legal advice is likely to be required. This may include the legal forms of any organisations created to facilitate delivery, as well as compliance with EU or Member State legal requirements, as well as any State Aid issues.

Delivery and governance – Define how the project will be delivered (e.g. in house, third party, or publicly / jointly (e.g. through a special purpose vehicle (SPV)). There is a continuum of delivery options, from full private sector provision to full public provision. The final delivery structure depends on the contractual structures and procurement routes, but a guiding principle is that those best placed to manage each activity and the associated risks should do so, with allocation of roles and responsibilities to relevant parties based on their desire for risk and reward. A few key considerations when designing if is set out below:

Table 25: Key considerations in delivery and governance of projects. Source: Authors, updated from UKRI and PWC, 2023.

Theme for consideration	Description
Control	Does the project align with your medium and long term objectives? What level of control does your organisation require? Where a scheme has been contracted with the private sector it can be difficult and costly to revert back to the public sector.
People and assets	Where are the capability and resources that are best placed to undertake the role? Also consider the risk of not having or losing internal capabilities and infrastructure. A clear understanding of any employee considerations or asset transfer considerations is essential. Ensure you have sought legal and commercial advice on any issues and considered potential pension liabilities.
Delivery	Who is best placed to undertake each role to deliver the project and maintain the continuity of service? The delivery model does not need to be fixed for all phases of the scheme. Consider alternative models when appropriate
Market and suppliers	Is there a viable supply chain capable of delivering the project? Is it mature enough for a straight procurement or is innovation needed?
Risk	Consider how you can best minimise the overall risk and which risks can be reasonably allocated to a third party. Reputational risks can never be outsourced and appropriate management and mitigation are needed.

Task
5.3

Develop a commercial structure and delivery plan

Accounting and Tax – Clarify the main reporting frameworks and tax arrangements for the project. The project must comply with all relevant local and international financial reporting frameworks including any sustainable finance regimes and the treatment of taxes for the different delivery and governance arrangements. The reporting requirements and accountancy rules may vary with the different legal structures used to deliver the project.

Contracting and risk – consider the project risks that will arise from its delivery, and how these are allocated across the participating parties. You should also consider how payments are made within the contracting structure. A contract structure should reflect the specific project conditions, including the beneficiaries, and the delivery structure.



The information provided above outlines some of the key considerations as part of a delivery plan. However, none of the information above should be seen as a substitute for proper legal advice and support. It is important that regions seek appropriate legal advice in line with their own organisation's description.



Before moving onto Phase 6 have you:



Considered the different procurement, legal, delivery and governance, accounting and tax and contracting and risk issues that must be addressed to ensure delivery?



Documented these in a delivery plan?

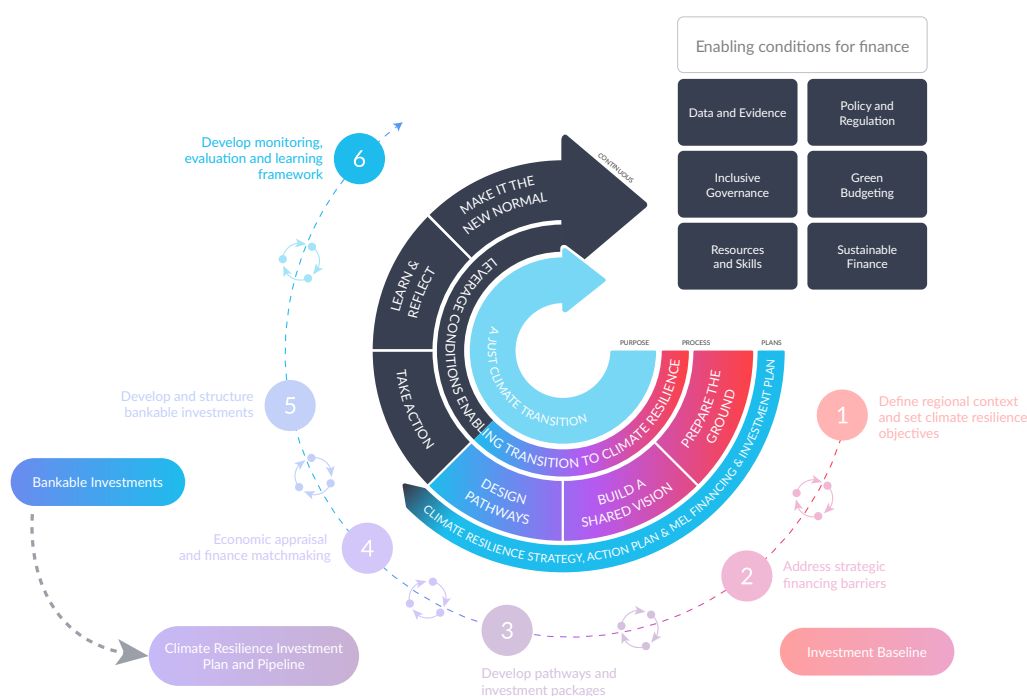


Supporting resources:

- PWC and InnovateUK (2023) [Financing Local Net Zero Projects](#) – This outlines an approach for financing local net zero projects for start to finish for Public Authorities. Whilst it focuses on mitigation, it provides guidance on many of the considerations of financial structuring, including business models and commercial structures.
- ClimateFIT – Investment Concept Handbook (forthcoming) – This provides detailed guidance on how to build detailed Investment Concepts for bankable projects.

Phase 6 – Develop monitoring, evaluation and learning framework

The aim of this phase is to provide regions with the means to track and report progress on the implementation of their Investment Plan, including the mobilisation of finance. It also focuses on reporting metrics and progress associated with private financing and identifying learning for further improvement. This phase establishes a systematic approach to track progress and assess the effectiveness of mobilising finance for adaptation, and extract insights from practical experience. It also ensures that any projects which have been externally financed (e.g. whether privately, or from green bonds). By embedding continuous monitoring, reporting, and structured reflection, Phase 6 closes the first AIC cycle and lays the groundwork for iterative improvement. This supports the transformational aims of shifting from one-off adaptation projects to coherent, inclusive, and finance-ready investment pathways.



AIC tasks	Relevant RRJ inputs	Outputs relevant to the RRJ process
Task 6.1 Monitor and disclose progress on achieving adaptation financing objectives	You should be able to align with the overall Monitoring, Evaluation and Learning Plan developed in RRJ Task 3.3.2	The design can feed into the development of the MEL for the Strategy in Task 3.3.2
Task 6.2 Report on privately funded projects in line with financing requirements	You can leverage the privately finance options that entered the pathways you developed in tasks 3.2.2 and 3.2.3	
Task 6.3 Conduct a learning and reflection session on the preparation of the Investment Plan	You can mobilize the regional stakeholders identified in Task 1.2.2 and draw in the shared vision from Task 2.3.1	You can embed the MEL inputs into the Theory of Change developed in Task 2.4.1

Task 6.1: Identify, monitor and disclose progress on adaptation financing

RRJ Journey Stage	CRIP Template Section	Effort	Essential/optional
Task 3.3.2 Develop a Monitoring, Evaluation and Learning Plan	8.1 Monitoring and scrutiny arrangements, 8.2 Economic and financial Indicators	Medium	Essential

What is this Task about?

This task focuses on monitoring and publicly disclosing progress related to the delivery of the Climate Resilience Investment Plan and its overarching adaptation financing objectives. It involves reporting on the overall financing mobilised, the development of the project pipeline, and the implementation of broader actions to establish enabling conditions for investment to relevant politicians, management structures and/or committees.

What are the key inputs?

You will need the details on the financial models for the action plan (Task 4.2) and the set of bankable projects identified in Task 4.3, as well as any additional models developed in Phase 5. In addition, you will need the final list of existing and new financial sources and mechanisms set up in Task 2.3 and mapped to the pathways in Task 3.3.

What are the expected outputs?

The expected outputs include reports and disclosures detailing progress on delivering the Climate Resilience Investment Plan. These should cover the total amounts of finance mobilised/secured, pipeline development, and the implementation of enabling actions. Such reports should also include relevant Key Performance Indicators (KPIs) and be made publicly available to ensure scrutiny and accountability. These outputs can feed into the development of the MEL for the Investment Plan in RRJ Task 3.3.2



Insight: In developing your MEL framework it is important to identify what you can measure but also what you cannot, to balance efficiency with feasibility. It will be important to recognize that you may need to develop new reporting processes to underpin the processes. In particular, green budgeting can be a useful technique to help monitor flows of public institutions, whilst compliance with the EU Taxonomy on Sustainable Finance may help with tracking private sector flows

Task 6.1

Identify, monitor and disclose progress on adaptation financing

Why is it important?

- Ensures transparency and accountability - Monitoring and disclosing financial progress provides accountability to stakeholders including administrative committees, politicians, and the public. Public reports demonstrate progress, whilst guaranteeing scrutiny and holding decision-makers accountable for fund usage.
- Mobilises and sustains finance - Demonstrating progress through transparent monitoring can be a catalyst for securing and scaling up further investment. A well-documented track record of mobilising and deploying finance builds credibility and increases visibility of investment needs. This can attract further investments and supports the case for domestic fund allocation.
- Strengthens Strategic Planning and Implementation - The data and insights generated from monitoring feed directly back into the strategic planning cycle, ensuring the AIP and the broader resilience strategy remain relevant and effective. This helps to check whether the policy process is on track and if stated objectives can be achieved.
- Identifies areas for further action - Monitoring reports help identify areas where further action is needed to improve the financing and implementation of the strategy. A sound MEL strategy can feed into refining and expanding the actions included in the Climate Resilience Strategy and Investment Plan.

What should you focus on the first time round?

In the initial stages, clearly define the KPIs for monitoring the financial resources mobilized for the defined pathways, and the mechanisms for collecting them, even if at a high level. As the plan matures, more detailed financial reporting and broader reporting on adaptation finance flows can be incorporated. You can start by tracking financial flows from established adaptation options in one or more pathways, focusing on financial instruments underpinned by strong governance, such as EU structural funds and competitive grants (LIFE,

HORIZON, etc.). Make sure you align the process with the MEL Plan developed in RRJ Task 3.3.2. In future iterations you may also wish to consider alignment with wider national, EU or international frameworks, such as the Global Goal on Adaptation.

How can you complete it?

1. **Define MEL scope and objectives** - Work with others across the regional government, as well as local municipalities and other partners, to for monitoring Climate Resilience Investment Plan financial flows, integrated with the Climate Resilience Action Plan MEL framework (RRJ Task 3.3.2). You should align with regional/national practices ensuring harmonized monitoring and reporting. Justify the framework based on transparency and accountability principles, highlighting how robust monitoring enhances stakeholder engagement and ownership of both the Investment Plan and broader regional resilience strategy.
2. **Define relevant Key Performance Indicators (KPIs) to measure the progress of the Investment Plan, aligned with accessible data and your organization's existing capabilities and resources.** Reporting should include progress on the overall financing of the investments included in the plan (i.e., total amounts mobilised/secured). It should also report on pipeline development, and implementation of wider actions to provide the enabling conditions for implementing, (Tasks 2.3 and 3.3). These will need to be appropriate to the region, but examples could include the totality of finance mobilised for investment (and the percentage splits of public and private), the proportion of the Climate Resilience Strategy with agreed financing strategies, the number of sources engaged in the region in financing, or the numbers of instruments being deployed or developed. Where relevant it should also include reporting on wider adaptation flows, e.g., from green budgeting approaches used by the region or local municipalities. You may also wish to include indicators which contribute to national objectives and the finance indicators within the Global Goal on Adaptation.

**Task
6.1**
Identify, monitor and disclose progress on adaptation financing

Your precise mix of KPIs will vary depending on your region. However, some indicative KPIs are set out below:

Table 26: Indicative KPIs for Monitoring Financial Flows and enabling conditions.

Indicator	Unit	Justification
Finance flows		
Total finance provided and mobilised for investment	€	Core indicator for tracking the overall success of the Investment Plan in closing the adaptation finance gap
Residual adaptation finance gap	€ / %	Provides a high level view of how much funding / financing remains to be secured for the delivery of the Strategy and Action Plan
Total / % finance provided through debt/leveraging	€	Sub-indicator to distinguish between types of funding and assess the associated risk, fiscal pressure and regional regulatory framework
Total / % Private finance provided and mobilised for investment	€	Indicating the increased engagement of the private sector to bridge the adaptation finance gap
Ratio of external to internal sources of finance	%	Measuring the share of external sources (e.g. national, EU Structural Funds compared to the regional budget)
Number of (new) financing sources engaged	Number (and total finance entailed)	Tracks progress in engaging a wider range of actors
Number of financial instruments being deployed or developed	Number (and total finance entailed)	Tracks the region's maturity in financial structuring and its ability to tailor financing to different types of projects
Proportion of adaptation finance dedicated to the most vulnerable	%	Required to ensure a just resilience approach.
Enabling conditions		
Establishment of a multi-stakeholder governance mechanism for the Investment Plan	Yes/No	Tracks whether an appropriate multi-actor structure is in place.
Number of actions identified and under way to address strategic financing barriers	Number	Monitors the commitment in implementing the action plan by addressing strategic barriers.
Integration of adaptation into public investment management (PIM) and public financial management (PFM) systems	Yes/No	Tracks whether adaptation is formally embedded in how public money is spent and managed.

**Task
6.1**
Identify, monitor and disclose progress on adaptation financing

Where applicable, include reporting on wider adaptation finance flows, such as those derived from green budgeting approaches. In line with the KPIs in Table 6.1.2, you are encouraged to provide qualitative information of the progress in fostering the enabling conditions for finance identified in AIC Tasks 2.3 and 3.3. It is important to assess and communicate all background assumptions, limitations, and uncertainties underpinning the chosen indicators.

You should ensure all reports are made publicly available to facilitate appropriate scrutiny and accountability, and to help identify areas requiring further action. Report and disclose progress on delivering the Climate Resilience Investment Plan to relevant administrative committees and/or politicians.



Before moving onto Task 6.2 have you:

- ☐ Established a clear framework to monitor financial flows and enabling conditions to support your Investment Plan?
- ☐ Selected a core set of finance KPIs with baselines and targets, aligned to Investment Plan objectives?
- ☐ Decided how to make reports available for scrutiny and accountability?

Task
6.1

Identify, monitor and disclose progress on adaptation financing



Supporting resources:

- Informed City (2025) [Global Goal on Adaptation potential indicators dashboard](#) - This interactive dashboard sets out the shortlist of indicators from the Technical report on indicators for the GGA by the UNFCCC in an easy, accessible way.
- Asian Development Bank (2022): Adaptation Metrics to Scale Up and Align Investment with Climate-Resilient Development
- IISD (2019) [Monitoring and Evaluation Systems for Adapting to Climate Change Are Only As Good As They Are Usable](#) - Sets out some common principles and approaches for M&E in climate adaptation.
- IIED (ongoing): [Supporting national monitoring and evaluation systems to enable adaptation assessment and reporting](#) -
- UNDRR (2025) [Budget tagging for Disaster Risk Reduction and Climate Change Adaptation: Guide for design and taxonomy](#) - sets out key considerations in budget tagging approaches, as well as a useful reference table for types of activities and classifications.
- IIGCC (2025) [Climate Resilience Investment Framework](#) - The Framework includes indicative targets for investors to assess their resilience of their holdings (assets). It can be useful for considering the types of metrics and targets for a Regional Investment Plan, especially if planning to involve Institutional Investors.

Task 6.2: Report on externally financed projects

RRJ Journey Stage	CRIP Template Section	Effort	Essential/optional
Task 3.3.2 Develop a Monitoring, Evaluation and Learning Plan	N/A	Medium	Optional (Essential if private/external finance used)

What is this Task about?

This task involves establishing a transparent process for regions that have used external finance arrangements, such as bonds or loans where this is required, for their projects. It will be important for regions to disclose the use of proceeds through a transparent process, providing assurance to financiers that their funds meet industry-standard classifications for 'green or sustainable' investments. The guidance for this task focuses on typical private financing requirements, but similar efforts may also be required for some other sources and instruments (e.g. philanthropic grants or EU instruments).

What are the key inputs?

The key inputs are the set of projects included in the action plan, for which external funding or financing has been used to develop the projects, and the associated monitoring requirements.



Insight: Different financial instruments come with different requirements. In the process of evaluating their impact you will need a good understanding of relevant industry frameworks and requirements for financial instruments, such as the ICMA's Green Bond Principles or the EU Taxonomy on Sustainable Finance. Taxonomies are not specific to financing jurisdiction (so financiers may have to report against other international taxonomies. Some sources will only be interested in the climate resilience of the projects being financed, whilst others will be interested in the impact itself – i.e. the risk reduced through the delivery of the project particular, green budgeting can be a useful technique to help monitor flows of public institutions, whilst compliance with the EU Taxonomy on Sustainable Finance may help with tracking private sector flows.

What are the expected outputs?

The expected outputs are any further reports required by external funders or financiers. This may consist of impact reports, or transparent disclosures on the use of proceeds for privately funded projects, demonstrating alignment with relevant financial frameworks and requirements.

The exact output will vary depending on the source and instrument put in place. For example, for Green Bonds, Sustainability-Linked Bonds or Community Municipal Investments, these could be use of proceeds reports, written informal updates, or overview of projects, whilst for Commercial Loans or the EIB it could be reporting in line with its Environmental and Social Standards Framework, and voluntary reporting in line with the EU Taxonomy on Sustainable Finance.

**Task
6.2**

Report on externally financed projects

Why is it important?

- **Assurance to financiers** – effective reporting ensures their investments meet green and sustainable criteria and conform to established industry standards, allowing for more preferable lending rates. Frameworks like the **ICMA's Green Bond Principles** or the **EU Taxonomy on Sustainable Finance** have specific disclosure and reporting standards that must be met to classify investments as 'green'. The use of proceeds is an integral part of green bonds and other private sources of finance and robust reporting helps build trust among stakeholders and bolster their engagement in the region's resilience strategy. This transparency is essential for maintaining investor confidence and for the continued mobilisation of private capital for adaptation efforts.
- **Regional attractiveness for investment** - Transparent reporting on the use of proceeds and project performance helps convince stakeholders and investors of the region's credibility. Demonstrating a robust and accountable approach makes the region a more attractive destination for private investment.
- **Capacity building** - establishing a track record of successfully managing and reporting on externally funded or privately financed projects, a region demonstrates its capacity and reliability. The data and lessons learned from the reporting process can be used to strengthen the **economic and financial cases** for future projects in the pipeline, making them more attractive to investors and easier to finance. This contributes to the overall goal of moving from adaptation planning to effective implementation

What should you focus on the first time round?

In the early stages, focus on establishing the fundamentals – e.g. the core indicators and information required by financiers or relevant industry standards. In future iterations you can focus on expanding this further with additional indicators or further project information.

How can you complete it?

1. **Identify relevant sources and instruments** - Start by reviewing the list of financial sources and instruments supporting your action plan. Identify those which have external monitoring requirements, and what these are (annual reports, use of proceeds, indicators etc), as well as when they are required. For those which require monitoring and evaluation, develop a process to collect, compile and report the information. Ensure this reporting aligns with the relevant frameworks and requirements for the financial instruments used. For example, reporting for green bonds should adhere to the ICMA's Green Bond Principles, while investments directly funded by institutional investors, or the EIB should align with the EU Taxonomy on Sustainable Finance. Wherever possible, you should align their reporting with recognised industry standards and frameworks that private financiers and institutional investors already use and trust.

Task 6.2

Report on externally financed projects

2. **Define relevant metrics and measurement:** set out the relevant metrics and identify **how** the proceeds from private finance will be overseen and reported on. This should include both qualitative and quantitative performance indicators. ***In all cases, you should also disclose the underlying methodology and/or assumptions used in the quantitative determination.*** The central element financiers generally want to see is a clear disclosure of the use of proceeds and alignment with taxonomy definitions of spend. The report must transparently show how the funds raised through bonds or loans have been allocated to specific, eligible “green” or “sustainable” projects and activities. An example of the type of project metrics is shown below (Figure 33).

To ensure the metrics are relevant and useful for investors, regions should engage in a “code-sign process” with private sector actors, such as financial institutions and companies (following the groundwork of ***Building a Shared Vision*** in RRJ Task 2.1). This collaborative approach ensures that reporting provides the specific information that financiers need to assess and manage their investments in adaptation. A robust system should be in place to track financial flows from the initial source (the bond or loan) to its final use in the specific adaptation project. This is fundamental to providing the transparency that underpins the “use of proceeds” reporting.

3. **Integrate into the finance MEL framework:** Finally, the reporting requirements should be integrated into the project’s design and governance structure. This ensures that the necessary data collection and monitoring processes are built-in from the start. Integrate the information from this step into the KPIs developed in 6.1 to monitor financial flows from private sources and assess their overall importance.
4. **Prepare reports (and second opinion) :** Having developed the process and metrics, bring together the information and compile it into regular reports, aligned to the reporting periods for the instruments. The content should be aligned to the types of instruments, detailing the projects funded. For example, the UK Government’s green financing framework report shows how green gilts have been allocated to support the national UK Flood Risk Management programme of climate change adaptation projects, which is then cascaded to the regional or local level. In contrast, impact investors may be more interested in the actual impact of projects delivered. In some cases, these reports may also need to be supported by an independent assessment of a financial institution (sometimes known as a ‘second opinion’).

Figure 33: Illustrative Summary Template for Project-by-Project report on adaptation financed by a green bond.

Climate change adaptation/resilience projects Temperature-related projects	Signed Amount a/	Share of Total Project Financing b/	Eligibility for green bonds	Climate change adaptation component	Allocated Amount c/	Project lifetime d/	<Indicator x> e.g. Increase in grid resilience, energy generation, transmission/distribution and storage	<Indicator y> e.g. Reduction in the area damaged by wildfires	<Indicator z> e.g. Reduction in emergency and unplanned rail and tarmac replacement	-	Other indicators
Project name f/	currency	%	% of signed amount	% of signed amount	currency	in years	<unit x> in MWh	<unit y> in km ²	<unit z> in km	-	
e.g. Project 1	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	e.g. increased number of households with access to resilient energy systems etc.

Source: ICMA, 2024

Task
6.2

Report on externally financed projects

Figure 34: Use of proceeds report for climate change adaptation in the UK.

Name	Green expenditure category	Expenditure description	Department	2024 allocation (£ million)		
				2022-23	2023-24	Total
Zero-emission buses	Clean Transportation	Funding to support the purchase of zero-emission buses	DfT		£92.00	£92.00
Flood & Coastal Erosion Risk Management	Climate Change Adaptation	Investment into flood and coastal erosion risk management programmes	DEFRA	£91.69	£1,302.00	£1,393.69
Green Homes Grant voucher scheme	Energy Efficiency	Provides vouchers to homeowners to improve the energy efficiency of housing stock	DESNZ	–	–	–
Home Upgrade Grant	Energy Efficiency	Funding for property owners and private renters to improve their home's energy efficiency	DESNZ	–	–£15.45	–£15.45
Local Authority Delivery	Energy Efficiency	Subsidies for local authorities to improve the energy efficiency of housing stock	DESNZ	–	–£30.67	–£30.67
Public Sector Decarbonisation Scheme	Energy Efficiency	Grants for public sector bodies to fund heat decarbonisation and energy efficiency measures	DESNZ	–	£395.48	£395.48
Social Housing Decarbonisation Fund	Energy Efficiency	Fund supporting the installation of energy performance measures in social homes in England	DESNZ	–	£231.01	£231.01
Agri-environment schemes	Living & Natural Resources	A collection of agricultural environmental and forestry schemes including: Countryside Stewardship Offer, Future Plant Health, and Environmental Land Management	DEFRA	–	£764.80	£764.80
Green Recovery Challenge Fund	Living & Natural Resources	Funding to establish nature recovery against England	DEFRA	–	–	–
Nature for Climate Fund	Living & Natural Resources	Fund supporting tree-planting and peat-restoration schemes in England	DEFRA	–	£220.15	£220.15
CCUS infrastructure (formerly CCS infrastructure)	Pollution Prevention & Control	Fund to support capital expenditure on transport and storage networks and industrial carbon capture projects	DESNZ	£7.19	£32.40	£39.59
Heat Networks Transformation Programme	Renewable Energy	Capital grants for the development of new and existing low and zero-carbon heat networks	DESNZ	–	–	–

Source: HM Government 2024.



Before moving onto Task 6.3 have you:



Established a transparent process to disclose the use of proceeds for privately support your Investment Plan?



Ensured that reporting on privately financed projects aligns with relevant industry frameworks and requirements?

Task 6.2

Report on externally financed projects



Supporting resources:

- European Commission (2025) [European Green Bond standard – supporting the transition](#) – an overview of the European Green Bond Standard.
- European Commission (2023) [EU Taxonomy Navigator](#) – Information on the ‘common economic activities used to evaluate whether projects using private financing can be classified as green’ for the purposes of lending. The Commission created an educational and user-friendly website offering a series of online tools to help users better understand the EU taxonomy in a simple and practical manner, ultimately facilitating its implementation and supporting companies in their reporting obligations.
- Climate Bonds Initiative (2024) [Climate Resilience Taxonomy](#) – The CBI’s taxonomy aims to provide clear guidance on what constitutes a resilient investment. By defining credible and impactful projects, our updated Taxonomy ensures that resilience considerations are integrated into the broader sustainable finance market. Resources include papers on the principles, as well as detailed metrics for what is classed as investments in climate resilience.
- LMA (2025) [Green, Sustainability Linked and Social Loan Principles](#) – The standard principles to be followed by financial providers to provide ‘green’ ‘sustainability-linked’ or ‘social’ loans.
- UNEP FI (2024) [Adaptation and Resilience Impact: A measurement framework for investors.](#)
- Bernhofen, M, and Ranger, N. (2024) [Aligning Finance with Adaptation and Resilience Goals](#) - a synthesis and preliminary analysis of targets and metrics for aligning finance with climate-resilient development.
- ICMA (2024) [Green Bond Principles](#) – The green bond principles aim to support issuers with the development and issuance of green bonds. Alongside the main principles, the website includes project mapping guidance and a checklist for issuance of green bonds.
- ICMA (2020) [Suggested Impact Reporting Metrics for Climate Change Adaptation Projects](#)
- EIB (2025) [How we monitor projects](#) – an overview of the EIB project cycle, including a section on how the monitor projects.

Case studies

- [EBRD \(2019\) Example use of proceeds report for green finance](#) – Climate Resilience Bonds often require reporting on the use of proceeds to investors. This report provides an example of the types of reporting required from green bonds.
- City of Paris (2020) [Projects funded by the € 300 million Sustainability Bond issued on November, 2020](#) – A second example of the type of proceeds report required for investors when using bonds to support adaptation and mitigation projects.
- [HM Government \(2024\)](#) UK Government Green Financing: Allocation Report 2024 – sets out the UK government has allocated its green gilts raised on the debt markets.
- Dutch State Treasury Agency (2023) [State of the Netherlands Green Bonds report](#) – This report shows how the Dutch Government is using its green bonds to finance a programme of climate change adaptation [amongst other projects in the Netherlands, some of which are cascaded down to regional or local level.](#)

Task
6.2

Report on externally financed projects



NOTE: While this guidance provides high level advice on the reporting associated with the use of financial instruments, it should not be seen as a replacement for proper financial and legal advice. In addition, it does not cover the process of issuing financial instruments such as green bonds. This is a complex area and regions should seek dedicated advice if preparing to use such instruments.



Case Study: London's Green Financing Frameworks

The Greater London Authority with the support of industry experts, has developed a Green Finance Framework in, to ensure compliance of bonds and loans with the Green Loan Principles. This framework, published in November 2023, governs how the GLA will raise finance bonds and peer-to-peer loans for eligible green projects. It follows internationally accepted standards like the ICMA Green Bond Principles and the Loan Market Association Green Loan Principles.

Key features of the framework include:

- Use of Funds: Proceeds must be allocated only to eligible green projects.
- Project Selection: A defined process ensures projects meet green eligibility criteria.
- Management of Proceeds: Transparent accounting of fund allocation.
- Reporting: Regular public reporting on fund use to investors and the wider community.

London's Green Financing Framework by the Greater London Authority sets out the process by which the GLA will finance climate and environmental projects through issuance of green bonds and other green finance instruments (e.g. borrowing from the UK's development bank. It aligns with these principles for municipal green bonds, supporting the Mayor's environmental and carbon reduction goals. The reporting assures investors that the funds will finance carefully assessed and selected environmentally sustainable projects.

Through the publication of annual Allocation and Impact Reports detailing use of proceeds per project, the process bolsters credibility and external accountability, tracks the progress in meeting climate targets, and feeds evidence back into policy learning and iterative improvement.

However, the first iteration of the framework does not relate to adaptation. Therefore, to complement the city-wide work, local London boroughs have also begun developing their own frameworks which include adaptation in the use of proceeds and have begun raising finance. In many cases this has been as part of work with Abundance Investments. Abundance specialises in Community Municipal Investments, which allow local authorities in London to raise capital directly from private investors to support adaptation projects, whilst also providing a nominal financial return. Investors receive rigorous monitoring and transparent reporting to demonstrate compliance with the financing framework, as well as to demonstrate impact.

→ **See London Green Finance Fund Framework**

→ **See London Allocation and Impact Report (2023/24) and second opinion**

→ **Hammersmith and Fulham Green Finance Framework**

Task 6.3: Learn and reflect on the preparation of your Investment Plan

RRJ Journey Stage	CRIP Template Section	Effort	Essential/ optional
MEL approach developed in RRJ Task 3.3.2 Reflect on how change is supposed to happen 4.2.1	8.3 Learning	Medium	Essential

What is this Task about?

This task involves organising a dedicated learning and reflection session after the preparation of the CRIP and an initial round of project development or reporting. It brings together key actors to evaluate the entire preparation process, identify lessons learned for future CRIP iterations, and pinpoint any gaps in competencies and capabilities.

What are the key inputs?

You will need to have completed the Adaptation Investment Cycle to reflect on the process in a holistic manner. It is also important to gather stakeholders' feedback from RRJ Phase 2 and, depending on when the session is held, a first assessment based on the data and monitoring procedures from Tasks 6.1 and 6.2. It is important that you have reliable documentation on the practices and tools you used in developing the Climate Resilience Investment Plan.

What are the expected outputs?

The expected output is a reflection and learning report documenting a set of learnings and recommendations for improvement. These recommendations should summarise the key challenges in producing the plan strategies. It should also summarise the lessons learned, and the key activities to undertake to address any identified gaps in competencies and capabilities within the team and improve the readiness of the region to refresh or update the plan.

**Task
6.3**

Learn and reflect on the preparation of your Investment Plan

Why is it important?

- **Enables Learning and Adaptive Management** – learning allows for continuous improvement and adjustment. As many of the AIC tasks may be new to your region, this session gives you an opportunity to refine your understanding of what each requires and how you completed them. Recognizing shortfalls in competencies and capabilities is essential for building the skills and allocating the resources needed for more mature and effective investment planning in the future. This feedback can inform targeted training and capacity-building initiatives. Doing so ensures, that future iterations of the Investment Plan are improved.
- **Ensures that knowledge and lessons learned are captured and institutionalized** – without specific effort, reflections and learning typically remain with individuals. Documenting these helps to build long-term capabilities, processes and evidence for robust investment plans.
- **Facilitates Knowledge Transfer** – Disseminating the learning and experiences from preparing your CRIP can help other entities within your region (e.g. in municipal planning within regional boundaries) as well as other sub-national entities.

What should you focus on the first time round?

In the early stages focus on the main staff involved in the development of the Investment Plan, or key users such as senior managers, or external stakeholders. Ask them to focus on the key issues that contributed to success or made the process challenging. For those issues that were challenging, focus on what could have been done differently. You could also include a broader range of stakeholders and staff.

The priority in early iterations is to ensure you have engaged all relevant stakeholders for the session, allowing them to reflect on the challenges faced in the preparation of the Investment Plan. Structure the session so that you can capture and document

all recommendations to ensure that valuable knowledge and lessons are preserved and shared beyond the immediate team members involved in preparing the CRIP.

How can you complete it?

1. Invite stakeholders to participate in a Learning and Reflection session

Bring together the key actors involved in the development of the AIP once its preparation is complete and the first round of project development and/or reporting has been fulfilled. This includes all regional actors that were actively involved in the development of the CRIP. In case your journey involves external experts, such as technical officers and consultants, they should be an integral part of the group learning session. To ensure the evaluation and learning is relevant across multiple layers of governance, you should engage senior officials and political leaders at the local and regional level and, if possible, representatives from national authorities (e.g. the ministries pertinent to adaptation actions). Involving representatives from smaller administrative units (e.g. municipalities) can prove material in documenting key learnings.

The distribution of private and public financial sources in the final plan should guide the selection of stakeholders. For example, if there is a sizeable private finance component in your CRIP, it is important to include the relevant private sector partners – e.g. commercial and investment banks, institutional investors (like pension funds), venture capital, and impact investors - who can provide direct feedback on the attractiveness of the investment pipeline, the clarity of the financial models, and barriers to investment. To ensure the CRIP is inclusive, equitable, and grounded in the best available knowledge, feedback from members of the Civil Society and community representatives, including those most affected by climate risk and adaptation options is also essential.

**Task
6.3**
Learn and reflect on the preparation of your Investment Plan
2. Facilitate a structured learning and reflection session

The session's primary purpose is to evaluate the Climate Resilience Investment Plan (AIP) preparation process to identify lessons for future iterations and pinpoint gaps in competencies and capabilities. However, you could also use the session to evaluate specific parts of the Investment Plan, such as the economic rationale, the stakeholder engagement process, and reviewing the selection of financing instruments and enabling conditions. The overarching objective is to build a safe, open environment for honest discussion to underline the shortcomings of the first iteration of developing the investment plan and identify areas for improvement.

Developing a clear agenda for the event is essential to guide the discussion and keep the focus on the MEL process regarding the Investment Plan. It should encourage them to discuss the process of developing the Investment Plan, and to reflect on what went well and what could have been improved. Some indicative areas and questions that could be used for discussion are outlined in the table below (Table 27):

If the development of the CRIP was challenging or you think the actors may not be willing to share their reflections collectively or in person, you should consider alternative methods such as an anonymous survey.

Table 27: Indicative questions to guide a Learning and Reflection session. .

Area	Indicative questions
Scope of activities	• Did we map the system in relevance to baseline evidence and overall investment procedures? • Did we map current and expected spending on adaptation? • Did we provide realistic estimates on the costs of inaction • Did we accurately highlight the barriers to adaptation finance?
Procedures	• Did we have a clear process for developing the Investment Plan? • Are budgeting and investment planning procedures clearly described? • Is pathways thinking embedded into our listing of adaptation options, sequencing and prioritization? • Were our monitoring and reporting procedures clearly specified? • Was consensus met in agreeing on the financial models for the action plan? • Did we establish actions to enhance our capacity in diversifying our portfolio of financial sources and instruments?
Stakeholders and Governance	• Did the core team showcase the key competencies and flexibility to lead the development of the CRIP? • What gaps in competencies and capabilities have been identified within the team? • Did we involve the right stakeholders? • Was the governance structure for developing the plan effective? • Was there sufficient coordination horizontally (across departments/cities) and vertically (between national, regional, and local levels)? • Did we have a sufficient focus on financing action for the most vulnerable / at risk?
Indicators	• How did we select our indicators? • Do the indicators cover both financial flows and procedures in developing the CRIP? • Are they being systematically monitored and reported?

Source: Authors

**Task
6.3**

Learn and reflect on the preparation of your Investment Plan

3. Document the recommendations (optional).

Document the outcome from the session in the form of recommendations for the future version of the Investment Plan in a learning report. This ensures that the knowledge and lessons derived from the process are not lost and can be used for future planning and capacity building, and stakeholder engagement. The learnings should directly

inform the next iteration of the Adaptation Investment Cycle, ensuring the process matures over time and becomes more effective at mobilising finance for adaptation actions.



Before moving onto compiling your Investment Plan have you:

- ☐ Convened key actors for a learning and reflection session?
- ☐ Identified lessons for future Investment Plan iterations?
- ☐ Documented these recommendations to ensure knowledge transfer?



Supporting resources:

- Christina Lister Comms (2025) [Tips on running staff reflection workshops](#) – A helpful guide on successful approaches for running learning and reflection workshops

04

COMPILING, APPROVING AND PUBLISHING YOUR INVESTMENT PLAN

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RRJ Journey Stage	CRIP Template Section	Effort	Essential/ optional
Task 3.3. Preparing for implementation.	5, 6.	Medium	Essential

Having completed all of the phases and tasks, you should bring together all the elements of the Climate Resilience Investment Plan into a single coherent and comprehensive document, setting out how you will finance the action plan, in the context of the wider Investment Strategies.

What is this Task about?

Having completed all the Phases of the Adaptation Investment Cycle, you should now compile your Climate Resilience Investment Plan. A template for the Investment Plan is included in the Pathways2Resilience Climate Toolbox.

What are the key inputs?

The inputs are the key outputs from the previous tasks of the Adaptation Investment Cycle. A summary of the core plan elements and where they are developed is shown below:

Table 28: Key Investment Plan elements and where they are produced in the Adaptation Investment Cycle.

Plan Element	Associated Tasks
The financing context, strategy objectives, and current investment needs, flows and the gap.	Task 1.1, Task 1.2, Task 1.3
Existing and future sources and instruments for the Strategy, barriers and enablers	Task 2.1, Task 2.2, Task 2.3
Investment strategies for the pathways	Task 3.3
Actions, with associated economic and financial analyses, and financing approaches	Task 4.1, Task 4.2, Task 4.3, Task 5.1, Task 5.2 Task 5.3
A project pipeline of additional projects for future development.	Task 4.1, Task 4.2, Task 4.3
Actions to improve the enabling conditions	Task 2.2, Task 3.3, Task 3.2
Monitoring, evaluation and learning framework	Task 6.1, Task 6.2, Task 6.3

What are the expected outputs?

The output is a Climate Resilience Investment Plan, similar to the form of the template, along with a list of all activities in all the packages and pathways, known as a project pipeline. In addition, the Investment Plan should include a package of actions to improve the enabling environment for finance in the region.

Why is it important?

All public investment will be subject to formal sign off and approval by regional staff and /or politicians. The Investment Plan draws together all the previous information generated in the Investment Cycle into a single document which captures the region's approach to financing the Strategy and Action Plan and allows this sign off. The Investment Plan also allows you to further engage stakeholders and funders to help develop the project pipeline. Moreover, a signed-off plan is likely required for applications to funding mechanisms such as the Mission Cities Capital Hub. A further benefit is that an Investment Plan provides assurance the region can track progress mobilising finance and comply with monitoring requirements for certain finance sources (e.g. Green Bonds). Finally, it is a required output of Pathways2Resilience.

What should you focus on in early iterations?

Focus on ensuring a clear, focused Investment Plan, which includes all the relevant sections of the plan. It is better to have a narrower, but more robust Investment Plan, than a large list of actions that cannot be paid for or that offer poor value for money.

How can you complete it?

Compile all the work to date and use it to populate the Climate Resilience Investment Plan template. Once you have compiled this, consult on it with relevant stakeholders for final feedback and validation. This ensures it is comprehensive, realistic, and supported by all parties involved. After this is complete, seek approval from relevant senior managers. You should present the plan to senior political figures or committees identified at the start of the plan development process, making sure to address any concerns, and setting out how it will be delivered. Once approved, decide on how to publish the plan. You should think about the level of detail to make publicly available and consider submitting the plan to funding platforms like EIB Adapt or InvestEU, as well as including them in your region's Inward Investment pitchbook.



Food for thought: Whilst the AIC focuses on producing a Climate Resilience Investment Plan, in reality you may wish you include these components into one overall Strategy and Action Plan, or as a supplementary document to your existing Strategy. This is perfectly acceptable – the key emphasis is on completing the steps in the cycle, and generating the required information, recognising that the final output may look different depending on local circumstances.



To complete the plan have you:



Brought all the inputs from the process together and completed a written Climate Resilience Investment Plan.



Consulted and engaged stakeholders.



Secured relevant internal or political approval.



Submitted the relevant elements to key platforms such as InvestEU or Mission Cities Capital Hub.



Supporting resources:

- Climate Resilience Investment Plan template
- Climate Resilience Investment Plan project pipeline template

05

APPENDICES

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Appendix 1. Investment Plan checklist



This Appendix brings together the overall checklists included at the end of each phase and task within the CRIP development process, to provide a handy checklist for regions to consider for the overall Investment Plan.

	Prepare to deliver your investment plan
☐	Set initial outcomes, objectives and scope of Investment Plan
☐	Identified and allocated resources and needs
☐	Agreed a governance and engagement approach
☐	Developed a project plan
☐	Secured political approval
	Phase 1: Define regional context and set climate resilience objectives
	Task 1.1
☐	Identified a high-level indicative budget for the strategy and action plan.
☐	Reviewed the region's economic and social goals, how they will be affected by climate change and how adaptation can help achieve them to help provide a backdrop for the adaptation investment
☐	Documented the key requirements from the Public Financial Management and Public Investment Management approaches, as well as key existing financing relationships with the private sector.
	Task 1.2
☐	Engaged with existing services or other organisations on what impacts they have experienced or might experience in future.
☐	Undertaken a desktop search of existing studies.
☐	Completed an inventory on the costs of extreme weather or climate change in the region as well as known adaptation needs and existing expenditure?
	Task 1.3
☐	Documented the spending objectives for the Climate Resilience Strategy and Action Plan.
☐	Set out a clear investment rationale.
☐	Completed the financial parts of the baseline report.
	Phase 2: Addressing strategic financing barriers
	Task 2.1
☐	Compiled a table of the existing sources and instruments the region is using to finance adaptation action.
☐	Mapped the wider landscape of sources and instruments.
☐	Reviewed their strengths and weaknesses through the Pathways2Resilience catalogue.

	Task 2.2
☐	Identified the barriers that make it challenging to use existing or desired sources and instruments.
☐	Reviewed the Pathways2Resilience catalogue to identify additional sources and instruments and any associated barriers.
	Task 2.3
☐	Compiled an action plan on how to diversify your adaptation-related financial sources and instruments, including timelines, and a clear allocation of roles and responsibilities.
	Phase 3: Develop pathways and investment packages
	Task 3.1
☐	Clearly defined a long list of adaptation options.
☐	Identified the indicative costs of options and types and sizes of economic and financial benefits they offer.
☐	Evaluated the options based on their initial economic and financial viability.
	Task 3.2
☐	Categorised options based on type, urgency, benefits and investment needs.
☐	Sequenced the options into pathways that will form the basis for evaluation.
	Task 3.3
☐	Grouped your pathway actions into packages.
☐	Estimated the finance needs associated with them.
	Phase 4: Economic appraisal and finance matchmaking
	Task 4.1
☐	Identified the main economic, fiscal and financial benefits from the Investment packages?
	Task 4.2
☐	Reviewed the relevant appraisal criteria for your region and major known sources
☐	Appraised the economic and financial cases of the actions to understand the potential costs and benefits and which meet regional and/or funder requirements.
	Task 4.3
☐	Assessed the potential pathway revenue streams, additional sources, overall financing mix and enabling conditions
☐	Documented the investment approach for each adaptation package.
☐	Confirmed the envisaged financing plans for the Strategy and Action Plan fit within the region's fiscal space.
	Phase 5: Develop and structure bankable investments
	Task 5.1
☐	Documented the overall business model in a business model canvas?

☐	Assessed the detailed benefits, beneficiaries and revenue streams.
☐	Drawn the overall business model in a diagram?
Task 5.2	
☐	Defined the sources and instruments?
☐	Defined and documented the financial structure?
☐	Considered additional ways to optimise the financial structure?
Task 5.3	
☐	Considered the different procurement, legal, delivery and governance, accounting and tax and contracting and risk issues that must be addressed to ensure delivery?
☐	Documented these in a delivery plan?
Phase 6: Develop monitoring, evaluation and learning framework	
Task 6.1	
☐	Established a clear framework to monitor financial flows and enabling conditions to support your Investment Plan?
☐	Selected a core set of finance KPIs with baselines and targets, aligned to Investment Plan objectives?
☐	Decided how to make reports available for scrutiny and accountability?
Task 6.2	
☐	Established a transparent process to disclose the use of proceeds for privately (or externally) financed projects?
☐	Ensured that reporting on privately financed projects aligns with relevant industry frameworks and requirements?
Task 6.3	
☐	Convened key actors for a learning and reflection session?
☐	Identified lessons for future Investment Plan iterations?
☐	Documented these recommendations to ensure knowledge transfer?
Compiling, approving and publishing your Investment Plan	
☐	Brought all the inputs from the process together and completed a written Climate Resilience Investment Plan.
☐	Consulted and engaged stakeholders.
☐	Secured relevant internal or political approval.
☐	Submitted the relevant elements to key platforms such as InvestEU or Mission Cities Capital Hub.

Appendix 2. Enabling environments to mobilise adaptation finance

The Adaptation Investment Cycle emphasises the importance of a supportive set of conditions (or an enabling environment). Pathways2Resilience defines enabling conditions for adaptation finance as a set of measures and conditions which support the overall fundability or bankability of regional adaptation projects.

In this context, this relates to both the enabling conditions for the region to be able to implement the investment plan – but also more widely for other actors to be able to mobilise resources for adaptation finance. This is particularly important to support diversification of sources and instruments in Phase 2, mobilising finance for the realisation of pathways in Phase 3, the financing of action plans in Phase 4, and the development of bankable projects in Phase 5.

To this end, Pathways2Resilience has identified six categories of enabling conditions that are needed for successful adaptation finance mobilisation.

These are shown below:



Inclusive governance –

Appropriate governance mechanisms which allow proper coordination across finance and economic departments as well as those responsible for adaptation. This could include regional funds or facilities, and climate change specialists or teams in finance departments. There should also be representation of those disproportionately affected by the climate impacts, or the costs of adaptation, as well as relevant sectors of the economy. It also involves working with financial institutions to including climate risk and physical adaptation into their mandates, as well as ensuring there is assigned 'risk ownership' (of climate risks and adaptation responsibilities) within government and other actors.



Data and evidence –

Appropriate finance and investment-focused data and evidence, as well as technical assistance which support the development of projects and financing are crucial components of bankable projects. This can involve identifying and assessing a range of climate risks under multiple climate scenarios, as well as adaptation measures, costs and benefits, and the impacts on investment-related activities, such as future cashflows or economic or financial benefits. In addition, partnerships with research institutions and scientists to support



Resources and Skills –

Ensuring regional actors have the collective skills and resources to be able to undertake the activities to build the enabling conditions for adaptation, as well as to develop a Climate Resilience Investment plan is crucial. This involves identifying skills gaps, as well as training programmes and capacity building activities.



Policy and regulation –

A wide range of policy and regulation can help to mobilise adaptation finance. This includes mainstreaming climate change risk and adaptation into the region's long term vision, economic planning, modelling and forecasting plans and strategies, as well as public policy decisions, and public procurement. It also involves ensuring that they are supported by national plans and strategies, as well as ensuring a supportive environment for innovation and piloting of new approaches, to allow for learning and experimentation.

The enabling environment is place and context specific – and depends on the existing structure of a sector and the wider economy, as well as the roles of the wider public and private sector so the exact mix will vary from region to region. Furthermore, regions will not always have control over some of these factors and instead will need to work collaboratively with national governments to improve the overall enabling conditions.

However, we have developed a benchmark / checklist for enabling conditions to help understand what you currently have in place, and what could be developed further. This is available in the Pathways2Resilience toolbox.



Sustainable finance–

Regions can also support and enhance work on private sector adaptation finance, including supporting the requirement and uptake of physical risk disclosures, support and alignment with the EU Taxonomy on Sustainable Finance, and helping alignment and support with private and financial sector Transition Plans.



Public Financial and Investment Management–

PFM refers to the systems, laws and processes for how the regional government raises funds, allocates resources, spends funds and accounts for them publicly. Integrating consideration of climate change risk and adaptation within them is crucial to align financial flows to climate resilience. This includes a range of different tools, including climate budget tagging, climate-resilient fiscal planning, credit ratings, and others. It also involves making sure climate risk is included in public investment decisions.



Further reading:

- CIF (2022) [Enablers: The role of enabling environment in scaling up climate finance](#).
- CPI (2024) [Assessing enabling framework conditions for Urban Climate Finance](#).
- Stenek, V., Amado, J-C., and Greenall D. (2013) [Enabling Environment for Private Sector Adaptation](#)

Appendix 3. Financing Just Resilience

The European Environment Agency (EEA) highlights how climate change creates unequal burdens among individuals, places and generations based on the combination of the hazards, exposure to those hazards and their relative vulnerability. These differential impacts can also arise from historical injustices and unequal power arrangements. What's more, differential impacts of climate change can also arise from the processes and outcomes of adaptation policies and actions. Addressing these issues typically take on four forms:

- **Distributional** – Understanding who is impacted by climate risks and how, and who is affected (and how) by adaptation.
- **Procedural** – involvement of those affected by climate change, as well as thinking about who is heard and how in the adaptation finance process
- **Intergenerational** – considering how risks will affect future generations (as well as current) and ensuring adaptation actions
- **Recognition** – Ensuring there is basic respect, robust engagement with and fair consideration of diverse needs, cultures and perspectives relevant to the climate impact/risk or adaptation measure. Addresses the underlying causes of distributional and procedural injustices, as it focuses on issues of what is valued and safeguarded.

To contribute to addressing these considerations, the Investment Cycle has also been embedded an explicit focus on supporting 'Just Resilience' in the financing of adaptation, in line with the ambitions of the European Climate Adaptation Strategy. Throughout the phases and tasks, there are activities which enable you to assess the equity issues associated with the economic impacts of the Climate Resilience Strategy, and the mobilisation of resources. The table below (Table 29) illustrates the relevant activities in each task and the Just Resilience dimensions they address.



Supporting resources:

- EEA (2025) [Social fairness in preparing for climate change: how just resilience can benefit communities across Europe](#) – This report from the EEA defines Just Resilience in concept and private, takes stock of the current state of justice in EU national and subnational adaptation policy, planning and funding, and four key systems (Built environment, agriculture and food, water, and transport) and sets further priorities for action.
- Watkiss et al. (2016) [Climate Change Impacts on the Future Cost of Living](#) – This project analysed the impacts of climate change on the cost of living in UK households – through direct expenditure, indirect costs, international affects, and non-market costs, and the distributional effects (i.e. across income deciles). It provides a useful example of how policies or programmes can assess the distributional effects of climate change to inform economic appraisal of policies or programmes.

Table 29: Overview of how Just Resilience concepts are included in the Adaptation Investment Cycle.

Phase	Task	Just Resilience Dimensions			
		Distributional	Procedural	Intergenerational	Recognition
Preparing to deliver your Investment Plan – Inclusion of the most vulnerable to climate change or the impacts of adaptation actions in the development of the Investment Plan, including in decisions around which projects and programmes to finance.			⌚	⌚	⌚
Phase 1	Consider distributional and equity implications when setting the economic rationale (Task 1.1)	⌚		⌚	⌚
	Analyse how impacts of extreme weather and future climate change affect individuals households and places differently (Task 1.2)	⌚		⌚	⌚
Phase 2	Consider the equity-related implications of different financing approaches - e.g., the ethical credibility of different sources (Task 2.2)	⌚		⌚	⌚
	Analyse which groups are currently receiving different sources and instruments of adaptation finance	⌚		⌚	⌚
Phase 3	Consideration of Just Resilience in the longlisting of adaptation options to prioritise actions which address risks to the most vulnerable (Task 3.1)	⌚		⌚	⌚
Phase 4	Consider the net benefits of adaptation alongside the <i>distribution</i> of these benefits – for example impacts on poor and vulnerable households and individuals (Task 4.2)	⌚			
	The ethical and distributional implications of financing adaptation actions such as the distribution of costs across the population (Task 4.3)	⌚			
Phase 5	Consideration of the most vulnerable groups affected in the design of the business models	⌚		⌚	⌚
Phase 6	Establishing metrics to help monitor which investments and flows which support Just Resilience (Task 6.1).	⌚		⌚	⌚
	Evaluation of the focus on the most vulnerable in plan development and appraisal (Task 6.3)	⌚		⌚	⌚

Appendix 4. Financing transformative adaptation

Pathways2Resilience and the EU Mission on Adaptation to Climate Change aim to develop and finance transformative adaptation strategies and solutions as key enablers to meet the Mission goals.

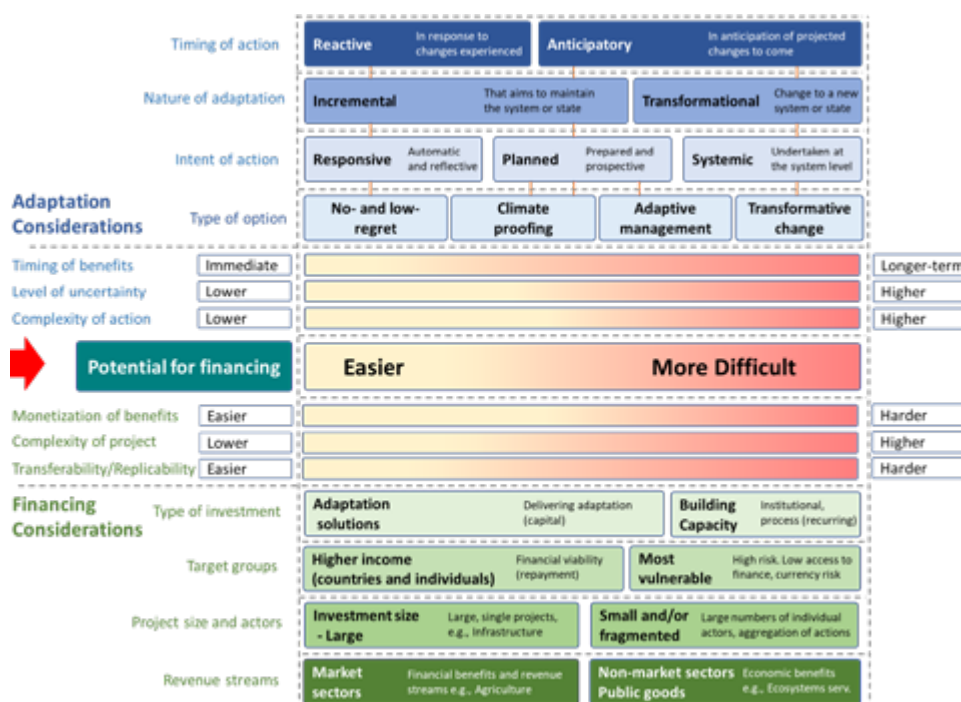
Typically, a Climate Resilience Strategy and its pathways and actions will involve a wide range of adaptation actions (e.g. dedicated adaptation solutions and capacity building), spanning market and non-market sectors. Some of the actions will be incremental whilst others will be aimed at transformative change.

In general terms, there are a range of adaptation and finance-related considerations that affect the difficulty of financing an adaptation project. The diagram in Figure 18 from the UNEP adaptation gap report below outlines the key considerations that

make projects, programmes and strategies more or less difficult to finance, based on the literature. Ease of financing is shown in the middle. Options that are on the left of the diagram are typically easier to finance, whilst those towards the right are more challenging. For adaptation (shown at the top), considerations include the timing, nature and intent of adaptation as well as type of options. To complement this, financing characteristics are shown at the bottom of the diagram, often framed around barriers, as well as wider bankability challenges.

Similarly, projects which have low numbers of monetisable benefits, limited revenue streams in non-market sectors and with the nature of public goods are more challenging to finance.

Figure 35: Adaptation financing potential of projects.



Note that each consideration is not mutually exclusive, and there are always exceptions.

Source: UNEP 2024.

The purpose of the diagram above is not to discourage a focus on adaptation, but highlight the challenges involved in its financing. Whilst financing transformative adaptation is more challenging, and suggests a greater role for public institutions, it should not be excluded from the scope of your ambitions. The process for developing a Climate Resilience Investment Plan has been designed to encourage the financing of a region's strategy and pathways in their entirety, whilst recognising that regions will be starting from different levels of maturity and capability.

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