Developing Skills for Adaptation

IEMA

Transforming the world to sustainability

Foreword

Climate change is already impacting every country on Earth, and it's clear that emissions are not being cut fast enough to prevent a continuation of these changes. Indeed, because of past emissions, for the next few decades at least, climate change is inevitable. The World Meteorological Organization 2023 report confirmed that 2023 was the warmest year on record, with the global average near-surface temperature at 1.45°C above the pre-industrial baseline. It was the warmest 10-year period on record.[1]

As well as continuing to find ways to cut emissions without preventing the economic development many countries still need and deserve, we must also adapt to the changing climate.

The risks of not adapting are diverse. They include the risks of injury, ill health and even death brought on by sudden extreme weather events; longer-term chronic risks of loss of food security; the forced displacement of peoples; and the ever-present shadow of new epidemic or pandemic disease.

As these risks become clearer (even where the exact detail or timing is not yet known), governments and regulators around the world are asking organisations to report on their exposure to risk, and their actions to mitigate these risks. In the UK, governments invite organisations with a public function, such as utilities, infrastructure, local government bodies, and health and social care settings, to report on their adaptation planning.[2] The Environment Agency requires organisations doing activities that require environmental permits to carry out risk assessments. The International Financial Reporting Standards (IFRS) Foundation calls for entities to report on their current and anticipated adaptation requirements and actions.[3] In the UK, HM Treasury has made financial disclosure in line with the recommendations of the Task Force on Climate-related Financial Disclosures (and therefore the IFRS standard) mandatory for large companies and from next year for government Arm's-Length Bodies.

It's expected that scrutiny of reporting will rise as governments use it as a tool to ensure that organisations are active on adaptation and regulators increasingly make adaptation a compliance issue. In the short term, the ability to prepare for climate change risks and reduce the impact they have can be a competitive advantage for businesses. In the longer term it will become a baseline necessity.

We hope that this paper will prove useful to a range of groups interested in green skills development – whether those planning curricula for school-age children, programmes for undergraduate and postgraduate degree students, and vocational courses. Employers looking at developing the skills of their staff will be especially interested.

Many of the skills in this paper, are 'soft' skills that should be developed as part of any course. They are the skills that enable people to make a positive and long-lasting impact on the world around them.

1 'State of the Global Climate 2023' (wmo.int).
2 UK reporting requirements are set out in: 'Third National Adaptation Programme (NAP3)' – GOV.UK (www.gov.uk).
Public bodies in Scotland are required to report annually on mitigation and adaptation under S44 of the Climate Change (Scotland) Act 2009.
3 Paragraph 14 of the ISSB-2023-A – Issued IFRS Standards requires entities to set out their current and anticipated adaptation requirements and efforts.

Contents

Introduction

In 2022 IEMA published a paper setting out guidance for the climate change adaptation practitioner. It provides an introduction to adaptation from both a strategic perspective (i.e., why adaptation must be a core activity for any leading private or public sector organisation) and from a practical one (i.e., how to get started).

It was designed to:

- Raise awareness of climate risks, their impacts and appropriate responses
- Help members understand the strategic implications of climate risks to assets, people, organisations and places, and begin to adapt
- Provide a forward-looking approach to the key issues for adaptation in the next two to three years in the UK (and beyond).

This paper builds on this, setting out the areas of action needed to build adaptive capacity and reduce risk and vulnerability, the challenges likely to be encountered, and the skills that will be needed to overcome these barriers. We cover this over the following list of project action stages. This list is not a linear sequence of project action stages because feedback and iterative working will be necessary as complex systems evolve and climate tipping points are reached.

- Understanding risk and opportunity: People who can calculate scenarios and risk within complex systems
- Solving problems: People who can solve technical problems and funding challenges
- Delivering adaptation plans: People who can deliver technical solutions
- Project governance: People who can sponsor, monitor and evaluate projects
- Communicators: People who can effectively translate and set out information needed between different stakeholder groups.

A widely accepted definition of adaptive capacity is that established by the Intergovernmental Panel on Climate Change (IPCC) as the ability of a system "to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences".[4]

Wherever the boundaries of a system are drawn, the ability of that system to adjust to climate change will rely in great part on the skills of the individuals that are in or that otherwise influence the system.

ISO 14090 Adaptation to Climate Change – Principles, requirements and guidelines calls for an organisation to determine the leadership and broader governance required, which includes identifying and developing the required human resources, roles and responsibilities, and knowledge and expertise. This calls for 'soft' skills: leadership, broader governance, organisational change management, facilitation, convening, translation of information into action, and managing drivers for change. It also calls for the 'hard' or technical skills of climate change knowledge, risk management, – assessment and prioritisation, and financial planning.

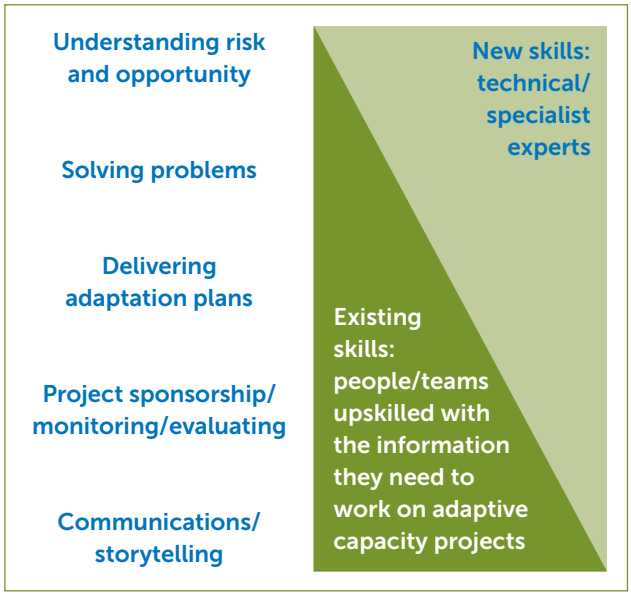
Adaptation to climate change is an adjustment or change management challenge. The types of skills needed for effective change management fall into broad categories:

- Risk assessment of complex systems and action
- Understanding of climate-related risks. Why action needs to be taken, and by whom, what the action(s) must be, and the timescale(s) in which the action(s) must be taken
- The ability to articulate, coordinate and deliver the actions. This is the critical difference between an abstract understanding of a problem and real-life action
- Effective communications to eliminate barriers of understanding.

In translating these change management skills into adaptation projects, it becomes clear that some of these skills will be technical and niche; for instance, new insights will be needed in the fields of engineering and systems and risk assessment. Others will be more a question of upskilling existing teams and roles as working towards adaptive capacity becomes a mainstream element of all jobs.

4 IPCC 'AR5 Climate Change 2014: Impacts, Adaptation, and Vulnerability'.

Almost all roles will require a combination of new/specialist and existing skills. This diagram illustrates the concept of a sliding scale of the combination of new/specialist and existing/enhanced skills, without being intended as a definitive breakdown of the proportions.



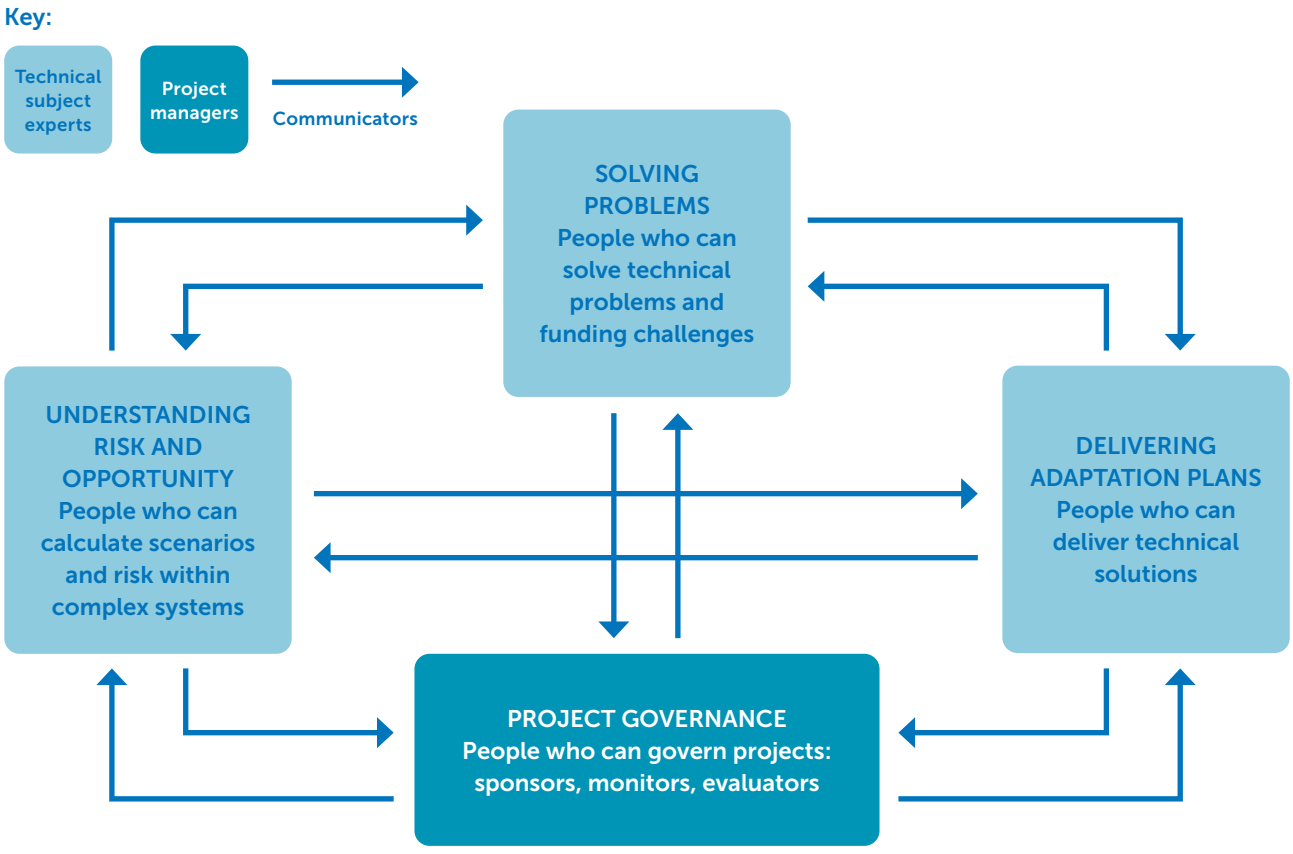
Roles and tasks that involve understanding risk and opportunity are highly technical and specialised; even large institutions may outsource this work to external experts. However, these experts will also need to be informed to a certain degree on the business, sector or region that has commissioned the work.

Problem-solving and adaptation project delivery will require a large degree of technical expertise, combined with a range of project management and innovative skills that will be needed to bring together a range of stakeholders, including finance providers.

Project sponsorship, monitoring and evaluation will require an almost 50/50 combination of generalist and technical expertise.

Communications and storytelling is a skill that already exists, but practitioners will need a degree of training and information to facilitate their abilities to communicate on the relatively new process of building adaptive capacity and addressing climate change challenges in general.

This diagram illustrates the interaction between these stakeholders (who may have several overlapping roles).



Technical and specialist expertise

Entities of all kinds manage risk by identifying potential threats (both certain and uncertain), then analysing their likelihood and impact in order to prioritise significant risks.

Climate change-related events can be physical or transitionary. Physical risks can be sudden and acute (e.g. a wildfire, heatwave or flood) or slower to manifest and chronic (e.g. coastal erosion). Transitional risks include changes to regulations, customer preferences and lack of skills.

Deciding what degree of climate risk (likelihood x outcome) an entity is exposed to presents challenges. Currently occurring and future event patterns are difficult to predict because of the extremely complex interlinkages between natural systems (climate, Earth systems, ecosystems) and man-made systems (social and built infrastructure and manufactured products).

Tipping points are thresholds beyond which a small change makes a big difference to a system. For instance, a storm (more likely in some areas due to human-caused changes in Earth and climate systems) could generate a lightning strike that causes a one-second power cut that causes a power surge that then cuts out all transport communications, in turn pausing rail travel (impacting social and infrastructure systems). These are physical cascading risks. The threshold of a tipping point is not only often unknown, it can also arise abruptly and have irreversible outcomes. For further reading on tipping points and cascading risks, see footnote.[5] Transitional risks (such as shifts in legislation or consumer tastes or availability of skills) are relatively easier to anticipate and manage.

As well as the likelihood of risks being difficult to predict, understanding the impacts of events is also extremely difficult to estimate or quantify, adding to the challenge of what scenarios to prioritise defending against with adaptation measures. Just the likelihood of a heatwave occurring, for instance, does not tell us how many people will get sick, how much public transport is impacted or how many businesses will lose money. Even when measuring impacts of past events, there are challenges in determining which impacts can be directly attributed to the event, often resulting in understating of potential impacts of climate change and related events.

Unlike the simple calculations behind the chances of Russian roulette or your opponent's next chess move, climate-related risk cannot be perfectly quantified. Mapping all possible events and all possible outcomes to generate a 'perfect' understanding of risk is impossible. Models exist but are subject to limitations, therefore the expert judgement of competent persons working in collaboration is essential. Despite uncertainty, decisions must be made and actions taken.

Given that the degree of risk exposure and sensitivity is difficult to establish and is changing, it is harder still to decide what to tolerate and what to tackle by adaptation measures and when. The section on project sponsors (see p13) elaborates on this.

Human technical subject expertise is therefore a clear collection of skills that is needed to prepare an organisation's, region's or state's adaptive capacity to climate-related impacts.

5 For further reading on tipping points, this report led by Professor Tim Lenton from the University of Exeter's Global Systems Institute is comprehensive and up to date at the time of writing this paper: 'Global Tipping Points' (global-tipping-points.org).

Upskilling existing roles

As businesses build their capacity to adapt and even thrive in a changing climate, every job will require a certain level of understanding of the challenges and threats that will arise, given that disruption to the business-as-usual model is to be expected.

The sections below set out a range of skills that will be needed. General school-level education is increasingly incorporating climate change as a topic, and the need for adaptation needs to be baked into these lessons. Further education courses and professional and vocational qualifications must include elements of adaptation as relevant to the course themes.

Areas of action

Understanding risk and opportunity

While, as outlined above, research into Earth system tipping points is still at an exploratory stage, broadly it is clear that impacts and consequences of climate change will be huge because mitigation measures have failed to be implemented at a scale or pace needed. Although it refers to 'environmental degradation', the precautionary principle as set out in the 1992 Rio Declaration (UNCED 1992) is also useful for adaptation: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

Research into adaptation planning by Goldstein et al published in 2019[6] identified five blind spots or errors common to a majority of climate-related financial disclosures:

- The magnitude and costs of physical climate change risks. These were found to be considerably underestimated
- A too-narrow focus on direct operations, neglecting impacts on supply chains, employees and customers
- Calculating costs and returns of action versus the counterfactual of doing nothing
- Working with non-linear risks with unknown tipping points sitting in wider systems susceptible to cascading impacts
- Averting the 'tragedy of the horizon' in which by the time the need for climate change adaptation becomes unavoidably apparent, it is too late to do anything about it – also described as a 'predictable surprise'. Bundled in with this is the perennial problem shared with climate change mitigation – that the costs and benefits of action often do not accrue to the same people or organisations, disincentivising anyone from paying.

Examples of the tasks at this stage

- Gathering information on indirect and cascading risks
- Identifying indicators and thresholds of risk and opportunity
- Monitoring and reporting on impacts as and when they occur, to build up an evidence base of impacts and costs of events
- Scenario planning – developing scenarios that are contextually relevant to the organisation's strategy and critical resources
- Understanding the extent of your organisation's own infrastructure as well as the extent of the supply chain.

Examples of the challenges that will be faced at this stage

- A lack of data: this could result in an underestimation of risk and impact, making it harder to communicate the importance of an issue; for instance, data may not have previously been collected on how many houses were flooded during a heavy rain period or how many businesses closed during a heatwave. Retrospectively gathering this data would rely on individual memories, making it expensive or impossible to collect, and it can be extremely difficult to determine which impacts can be directly attributed to an event
- Accessing and using climate projections and impact models: there is often a sense that there is no 'single source of truth' on what physical risks will be as the science is evolving. There are choices to be made on which resources and scenarios to use and how
- Balancing use of models with manual risk assessments: climate risk models often underestimate impacts, while manual risk assessments are time-consuming to construct
- Choosing indicators: understanding which indicators should best be used for measuring impact; for instance, insurance premia or raw materials prices.

6 Goldstein, A, Turner, WR, Gladstone, J and Hole, DG (2019). 'The private sector's climate change risk and adaptation blind spots', Nature Climate Change, 9(1), pp18–25.

- Apportioning responsibility between multiple entities: scenario planning quickly reveals that both risk and agency to act are shared by multiple entities
- Building on business continuity planning: this particularly uncertain aspect of business continuity needs to be combined with other areas of business planning, and long-term plans need to be balanced with short-term goals and essential operations
- Drawing boundaries – too wide and the problem might become too big to tackle. Too narrow and important aspects are lost; for instance, biodiversity, or the impacts on access to materials through a vulnerable supply chain, might be forgotten
- Understanding the scale of potential financial impacts
- Uncertainty around distributional impacts.

Skills that will be needed at this stage

Understanding risk and opportunity requires the ability of critical thinking. This is a skill set that is commonly broken down into simple stages: problem identification; data collection and organisation; data analysis; and decision-making under uncertainty. However, successful critical thought is not as simple as this list. It also requires[7]:

- Avoiding collection bias: avoiding the tendency to search for information that will confirm existing beliefs and views, identifying possible shortcomings in the data collection process
- Avoiding confirmation bias: avoiding the tendency to interpret data in a way that confirms existing beliefs and views
- Avoiding mistaking correlation for causation
- Empathy: intellectual humility and an understanding of different viewpoints
- Curiosity: questioning sources and integrity of data, understanding your own information blind spots
- Compromise: some data sources will not be perfect or ideal, so being able to work with the information you have while making clear, for yourself and others, the choices you have made and why.

7 An interesting article providing an in-depth look at critical thinking is: 'Enhancing critical thinking skill formation: Getting fast thinkers to slow down', The Journal of Economic Education, Vol 53, No 1 (tandfonline.com).

Solving problems

Examples of the tasks at this stage

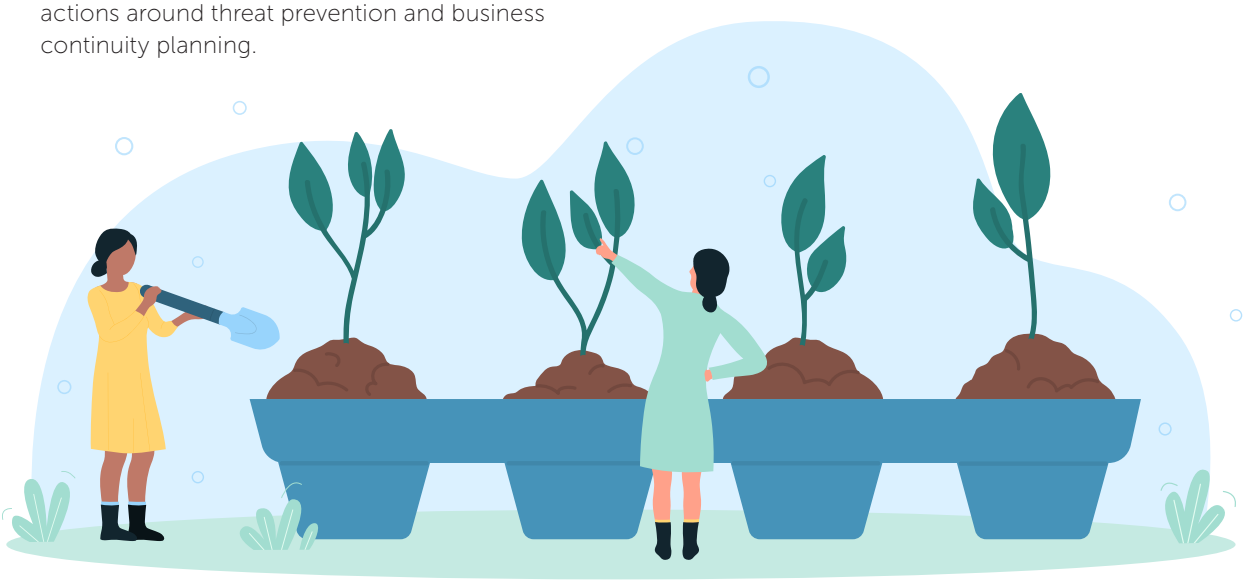
- Identifying and evaluating adaptation options and pathways
- Determining what the desired outcomes should be
- Effective/creative project planning
- Translating written solutions to tangible and deliverable projects or interventions.

Examples of the challenges at this stage

- Not necessarily having information on what adaptation measures have already been tried and tested elsewhere
- Time frames: getting the time frame for action right – short versus long term
- Finance: getting the costings right and/or seeking finance to take action, where funding might be limited or outside of budgets
- Systems thinking: avoiding adverse unintended consequences – a decision might solve an immediate problem but create other problems for other organisations or communities; for instance, installing air conditioning cools a building but heats the surrounding area
- Prioritisation: getting the balance right between actions around threat prevention and business continuity planning.

Skills that will be needed at this stage

- Being able to evaluate and prioritise different adaptation actions, weighing up short-terms risks and costs vs long-term benefits: this calls for skills in calculating financial returns for actions, and the ability to compare actions to pick adaptation measures presenting the best value for money
- Thorough project planning: this includes being able to work backwards from target outcomes to identify interim outcome stages, and identifying barriers and openings between the interim stages. Critical to this is the ability to factor in lead times, including the time to build adaptive capacity
- Understanding the potential co-benefits of adaptation: nature regeneration, improving housing and neighbourhoods, self-sufficiency for individuals and communities, enhanced skills and employment, and improved connectivity and transport. As well as synergies and co-benefits, it is important to be able to identify potential trade-offs and conflicts of adaptation measures, such as a carbon-intensive adaptation measure
- Being able to demonstrate both the non-financial and financial benefits of these features.



Delivering adaptation plans

Adapting to the impacts of climate change will require a range of actions, from one-off projects to making permanent shifts to new ways of working. All successful groundbreaking projects require engagement with stakeholders. Knowledge that has been built up by communities or employees over time should never be underestimated, and they will often be able to identify areas to prioritise and aspects of plans that may look good on paper but be unworkable in the real world.[8]

Examples of the tasks at this stage

- Project planning: broadly there will be several types of projects, each with their own challenges:
    - First-in-kind pilot projects (treading a brand-new path)
    - Repeating pilot projects elsewhere (adapting and applying a tested path elsewhere)
    - Repeating well-established projects (where the processes are well known and relatively easy to replicate in another place).
- Securing finance: the type of finance available will depend on the type of project
- Delivering change management programmes.

Examples of the challenges that will be faced at this stage

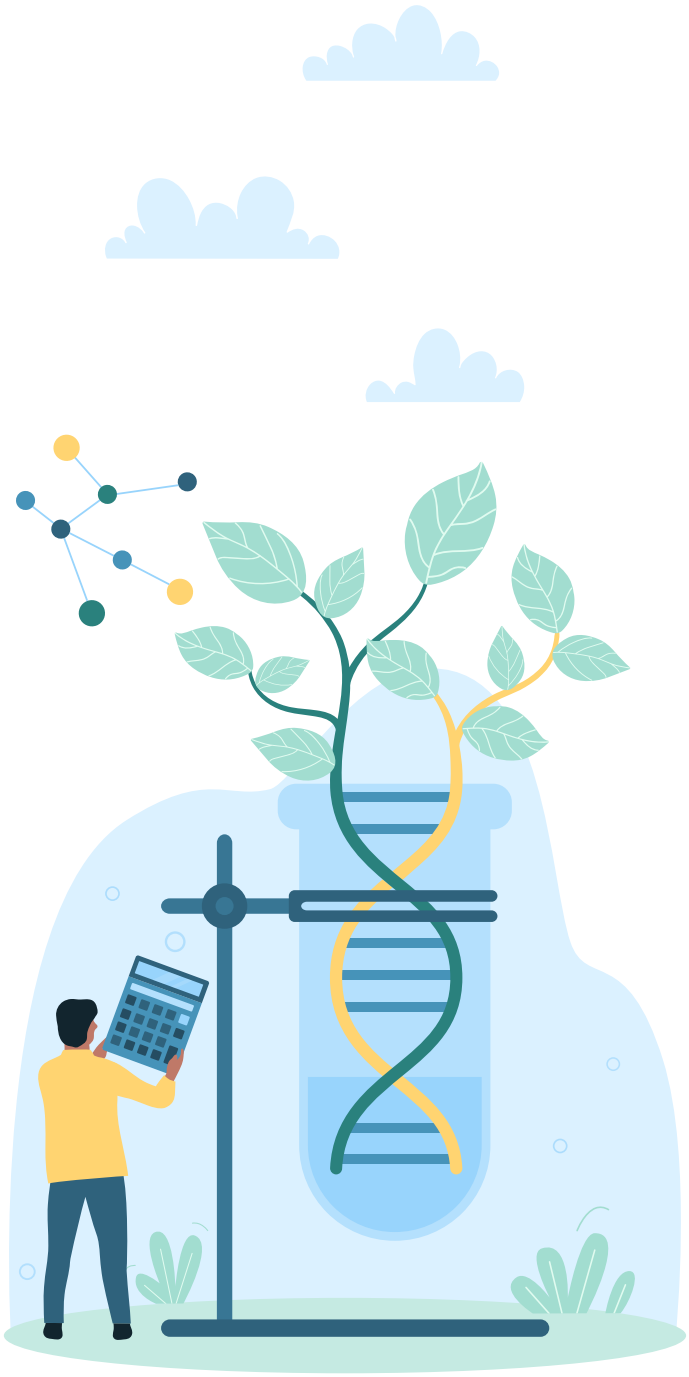
- Planning innovative finance: first-in-kind pilot projects and the next round of repeating a pilot project both require creativity in project planning, overcoming barriers, and finding novel and sustainable ways to raise project finance. There may be more established routes to funding for more commonplace types of projects. The challenges will include:
    - knowing where to look for finance
    - applying for and accessing funding, potentially from many sources such as grants, green finance, private investment, community investment schemes and quid pro quo benefits with other organisations
    - finding and costing co-benefits such as energy efficiency schemes for mitigation to help fund adaptation.
- Finding a sustainable form of finance: this includes learning from previous financial models involving private investment into public infrastructure; finding the balance between ensuring a sufficiently attractive return to investors that also provides good value for money for taxpayers and service users in the long term
- Especially for repeating pilot projects, getting the best out of the pilot projects. Pilot projects and well-established techniques are the easiest to fund and deliver. Grant funders, governments and academia are often supportive of exploratory projects, while established techniques often have a replicable business model in place. Pilot projects may be proven to work but be difficult to replicate, for example, because supporting policies are not put in place or because they relied so heavily on grant funding that there wasn't an obvious business model through which they can go on to stand alone. Grant funding streams can be variable in longevity, making it difficult to plan long term[9]
- Sustaining momentum throughout difficult groundbreaking projects
- Negotiating different regulatory and disclosure regimes in the case of international projects
- Delivering on change management programmes
- Identifying the right stakeholders to engage with.

8 The article 'Successful Community Participation in Climate Change Adaptation Programs: on Whose Terms?', Environmental Management (springer.com), reports on findings from research into local communities' perspectives on adaptation projects in rural Northern Ghana. Despite the specificity of this article, the findings apply equally to change management programmes in any householder or worker community, and anywhere in the world.

9 There are many examples of demonstrator projects which do not end up being translated into business as usual despite proving success. For example, the LIFE Housing Landscapes project ran from 2013 to 2016 and included relatively low-cost light-engineering climate change adaptation measures based around the retrofitting of blue and green infrastructure. It was technically hugely successful – for instance, 89% of rainfall was absorbed by green roofs, 100% of rainfall was diverted from storm drains, and roof temperatures were considerably lower in hot weather. The findings included recommendations that Sustainable Drainage Systems (SuDS) were retrofitted into existing infrastructure and that the development size threshold for SuDS being compulsory be lowered. Unfortunately, eight years later the National Planning Policy Framework (NPPF) still only requires SuDS on major developments (10 or more dwellings). There is no new policy around retrofitting. LIFE 3.0 – LIFE12 ENV/UK/001133 (europa.eu).

Skills that will be needed at this stage

- The ability to think creatively and long term about finance options
- Being able to navigate and influence the policy space so that enabling policies are in place and/or 'doing the right thing' despite the absence of a supporting policy context
- Communicating the successes of a project, particularly pilot projects, to increase their impact and encourage further investment, actions or policy changes
- Project planning skills: the ability to find the right approach for different projects, for instance:
    - Classic project planning skills include defining scope and planning workstreams by being able to identify critical paths and logical dependencies
    - For adaptation projects in particular, project planning must also involve 'people' skills. Understanding communities and community values, having a genuine cultural sensitivity, and the ability to build cross-sector partnerships
    - Knowing when agile and flexible processes may be more useful in a situation; for instance, when a project requires a high level of community insight and engagement. This could involve less upfront planning and instead deploys a more iterative continuous planning process.[10]
- The obvious general project management skills such as leadership, communication, time management and so on are well documented. Less well documented are personal skills such as diplomacy (for working with diverse stakeholders), vision (having the ability to imagine a project way into the future) and transparency (to unlock a maximum amount of learning opportunities for future projects).



10 For further learning on linear versus adaptive planning, this article looks at where project planning improves project performance and where it may be counterproductive: 'Planning to Fail: When Is Project Planning Counterproductive?', IEEE Journals & Magazines, IEEE Xplore.

Project governance: sponsorship/leadership

Examples of the tasks at this stage

- General project sponsorship tasks include having the vision to get the project started, the leadership tasks to get others to buy in to the project, and the management skills to make it happen

- Understanding the organisation/system that project will sit within: knowing the policies and procedures in place that are opportunities to integrate adaptation, and knowing the terminologies of different groups and therefore how to communicate with them and encourage engagement from different audiences. For example, the context and importance of adaptation will need to be conveyed differently to emergency preparedness, resilience and response (EPRR) professionals compared to environmental professionals.

Examples of the challenges that will be faced at this stage

Adaptation projects face very specific challenges that are unlike other public or corporate projects, and these challenges apply to the tasks of having vision, and displaying leadership and project management. While not necessarily unique to adaptation in itself, they combine to make adaptation uniquely challenging,

- *Do we need to do it?* Getting people to understand the concept of adaptation – non-specialists are only just getting to grips with the terminology of climate change, and adaptation is seen as a new concept. There is the need to understand each department or sector's own terminology around hazards, risk and risk mitigation in order to effectively communicate climate change concepts without misunderstandings (for instance, EPRR teams use the term 'risk mitigation', so mitigation versus adaptation with relation to climate change can be confusing)

- *Do we need to do it now?* Understanding/accepting that adaptation costs need to be seen as an alternative to the costs of 'repair' that will otherwise occur in the future. Then 'selling' this concept to financial management planners. This is a 'now cost' that would otherwise be deferred – a difficult proposition in an era of quarterly financial results reporting

- *Why to we need to do it? Isn't it somebody else's problem?* The systemic nature of climate change impacts mean that changes happening on one place impact another. For example, the breakdown of a transportation network due to extreme weather has a negative impact on organisations that rely on the transport network. The global economy is structured with neat corporate boundaries in which an entity is responsible for its own matters and everything else around it is assumed to work 'on call' or at least be substitutable for an equivalent that works. The impacts of climate change mean that sometimes things don't work and there isn't a substitute that can be called in. A good service might simply not be possible to source. This breaks down the global economic model of corporate entities serving themselves only, and requires a new, more cooperative model. Unfortunately, such a model doesn't yet exist and first movers will likely be at an economic disadvantage. The ability to develop, articulate and lead on such a model is a clearly needed skill if the economy is going to adapt

- Cascading concepts through an organisation – it's one thing for many layers of management to be clear on goals – the message needs to reach those 'on the shop floor'. The top-down versus bottom-up approaches need to be blended. On the other hand, senior leadership needs to be on board so that systems are put in place to allow those 'on the shop floor' to incorporate longer-term planning (e.g. teams that have strategies for one quarter/one year that need to have five- or 10-year strategies to incorporate climate change adaptation)

- Understanding that the level of climate risk depends not only on the hazard itself but on exposure (location, existing adaptation in place) and vulnerabilities (demographics of individuals, nature of an organisation's being weather dependent or dependent on vulnerable supply chains)

- Lack of comprehensive regulatory or legislative guidance for organisations on monitoring reporting and delivering on adaptation, especially where reporting is voluntary.

Project monitoring and evaluation

Good projects will contribute towards the ongoing success of an organisation, region or sector. Results should be tangible and ideally the project should be designed and organised in such a way that it can be run more smoothly in future iterations.

Examples of the tasks at this stage

- Auditing the projects as they progress to ensure that they're being carried out as planned
- Evaluating the outcomes and success of projects.

Examples of the challenges that will be faced at this stage

- Knowing what success looks like: ensuring that the initial problem was well defined
- Different stakeholders may have a different view of what success looks like. Funders may want to see projects completed on time, academics may focus on the learning that can be acquired, communities may want different results on the ground
- Auditing process: projects that have been designed to be agile and iterative are more difficult than auditing more formulaic and linear planned projects
- Timescales: many projects require long-term clearly documented audits and consistent planning. It is unlikely that the same team will be in place all the way through planning and delivery of the project, so succession planning and effective handovers will be critical
- Choosing indicators for evaluating and measuring success: there may not be counterfactual data available to measure success, and/or it may be that success is an event that doesn't happen; for instance, properties not flooded, or operations not disrupted – both almost impossible to quantify
- Timescales for evaluating and measuring success: the event horizon is unlikely to match the project timescale. For instance, it might be impossible to prove that a flood barrier works until an extreme flood event occurs, by which time the project and funding could be closed
- Uncertainty around cause and effect linkages: links between projects or actions and outcomes on the ground can be difficult to establish[11]
- Finding the best way to evaluate projects and actions that involve long-term changes to ways of doing things (for example, new farming methods rather than one-off construction projects). A successful outcome of these could be, for example, collective capacity building, which is harder to measure than the outcome of whether or not a flood defence was constructed on time and within budget.

Skills that will be needed at this stage

- Especially for projects and actions requiring changes to methods: communication, fieldwork and critical thinking skills will be required to gather and process the feedback information needed to assess the success of capacity building. Questions on the process might include:
  - What worked that surprised you?
  - What failed that surprised you?
  - What could be done better next time?
  - What did you learn from the project?
  - Will you be able to share the information with others and if so how will you do it?
- Understanding how multidisciplinary teams work: the input and outcomes may not always be generated or accrue to the same groups.

11 The article 'Monitoring and evaluation approaches in water resources project design: experiences from an urban water system climate change adaptation project in Indonesia' – ProQuest reviews different monitoring and evaluation frameworks, and the findings apply broadly to many adaptation projects anywhere in the world, beyond those involving water resources in one specific country.

Communications

Communication skills are a thread that runs through each type of adaptation and capacity building task. Each time an aspect of a project passes from one area to another – for instance, from problem-solving in the abstract to project planning in the absolute – somebody needs to take the information and translate or present it in a way that makes it not only accessible but also appealing to enact, to the next person or group in the chain. Communication is also pivotal to the success within each portion of the chain. Effective communication is required between and within teams to ensure clear goals and outcomes. Training, awareness raising, engagement and education are essential to ensure that the relevant individuals and organisations are on board.

Some examples of communications tasks

- Engaging stakeholders: stakeholder engagement is an essential part of effective behaviour change strategies
- Ensuring that everyone's input feels valued: this can increase effectiveness of activities implemented
- Articulating to user groups the reasoning behind any changes: new operational guidelines are more likely to be adopted by groups that understand why they are happening
- Communicating the results of the monitoring and evaluation process, especially where they redefine the original problem, for a complete feedback loop.

Some examples of communications challenges

- Overcoming the obstacle of change feeling like an 'inconvenience': customers, employees, clients and so on are more likely to accept change when the reasons for it are communicated effectively
- Adaptation measures being 'politicised' and used as a divisive tool, which can undermine projects and outcomes
- The message 'receivers' will be influenced by their existing world views (including on climate change), political views, and literacy and numeracy skills: getting the message right for the audience can't take a one-size-fits-all approach
- Not everyone in a communications role will be a climate change or adaptation expert: ensuring that everyone has enough literacy in the topic to do the job
- Perceptions of trust, credibility and intention.

Skills for communication

Skilled communicators are critical to the smooth functioning of all other aspects of climate change adaptation. Some communicators will be expert and dedicated, however everyone, no matter what their role in the process, must be able to communicate effectively.

- 'Listening' more than 'telling': taking a 'consultative' approach rather than an 'educational' approach
- Matching the communication appropriately to the decision context
- Matching the communication appropriately to the 'receiver'
- Creative sense of narrative development.

Further reading

IEMA resources

(Note that these are up to date at the point of publication of this paper – search the IEMA website for later additions to this topic.)

- IEMA *Climate Change Adaptation Practitioner Guidance*

Other resources

A number of external organisations provide specialist technical planning tools, including these:

International Organization for Standardization

- *ISO 14090 Adaptation to Climate Change – Principles, requirements and guidelines*
- *ISO 14091 Adaptation to Climate Change – Guidelines on vulnerability, impacts and risk assessment*
- *ISO 14092 Adaptation to Climate Change – Requirements and guidance on adaptation planning for local governments and communities*
- *ISO 14097 Greenhouse Gas Management and Related Activities — Framework including principles and requirements for assessing and reporting investments and financing activities related to climate change*

The British Standards Institution

- *BSI 8631:2021 Adaptation to climate change. Using adaptation pathways for decision making. Guide*
- BS PAS under development: *Adaptation to climate change – adaptation pathways for infrastructure*

Adaptation Scotland

- The Framework

Transition Plan Taskforce

- *Building climate-ready transition plans: Including adaptation and resilience for comprehensive transition planning approaches*

UK Met Office

- The Met Office climate data portal
- UK Climate Projections (UKCP)
- UK climate maps and data
- Global (60km) Projections
- UKCP E-Learning

Further information

For more information, please contact:

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We are the Institute of Environmental Management and Assessment (IEMA).

We are the global professional body for over 22,000 individuals and 300 organisations working, studying or interested in the environment and sustainability.

We are the professional organisation at the centre of the sustainability agenda, connecting business and individuals across industries, sectors and borders.

We also help and support public and private sector organisations, governments and regulators to do the right thing when it comes to environment- and sustainability-related initiatives, challenges and opportunities.

We work to influence public policy on environment and sustainability matters. We do this by drawing on the insights and experience of our members to ensure that what happens in practice influences the development of government policy, legislation, regulations and standards.

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