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Article (Published version)
(Refereed)

Development in Practice

ISSN: 0961-4524 (Print) 1364-9213 (Online) Journal homepage: http://www.tandfonline.com/loi/cdip20

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To cite this article: Nicola Ranger, Alex Harvey & Su-Lin Garbett-Shiels (2014) Safeguarding development aid against climate change: evaluating progress and identifying best practice, Development in Practice, 24:4, 467-486, DOI: 10.1080/09614524.2014.911818

To link to this article: http://dx.doi.org/10.1080/09614524.2014.911818

Development in Practice, 2014
Vol. 24, No. 4, 467–486, http://dx.doi.org/10.1080/09614524.2014.911818

Safeguarding development aid against climate change: evaluating progress and identifying best practice

Nicola Ranger*, Alex Harvey and Su-Lin Garbett-Shiels

(*Received November 10, 2013; accepted March 19, 2014*)

Official development assistance currently totals around US$130 billion per year, an order of magnitude greater than international climate finance. To safeguard development progress and secure the long-term effectiveness of these investments, projects must be designed to be resilient to climate change. This article reviews 250 projects for three countries from two development organisations and finds that between 2% and 30% of these may require action now to "future-proof" investments and policies. Both organisations show improvements in the recognition of climate change in projects, but many projects are still not future-proof.

L'aide officielle au développement s'élève actuellement à environ 130 milliards de dollars par an, montant supérieur à celui du financement international de la lutte contre le changement climatique. Pour protéger les progrès du développement et garantir l'efficacité à long terme de ces investissements, les projets doivent être conçus de manière à être résilients face au changement climatique. Cet article examine 250 projets menés dans trois pays par deux organisations de développement et constate qu'entre 2 et 30 % d'entre eux requièrent une action dès à présent pour protéger les investissements et les politiques des aléas futurs éventuels. Les deux organisations affichent des progrès sur le plan de la reconnaissance du changement climatique dans les projets, mais nombre de projets ne sont pas encore à l'épreuve du temps.

La ayuda oficial destinada al desarrollo alcanza alrededor de 130 mil millones de dólares por año, un orden de magnitud mayor que el orientado a responder a los efectos del cambio climático a nivel mundial. Con el fin de salvaguardar el avance del desarrollo y de garantizar la efectividad a largo plazo de estas inversiones, los proyectos deberán tomar en cuenta los efectos producidos por el cambio climático. El presente artículo informa sobre los resultados de una revisión efectuada a 250 proyectos impulsados por dos organizaciones de desarrollo en tres países. Se encontró que entre 2 % y 30 % de dichos proyectos requieren actualmente la implementación de cambios que los hagan pertinentes para las inversiones y las políticas a futuro. Ambas organizaciones han instrumentado modificaciones en algunos proyectos de manera que respondan al cambio climático; sin embargo, otros proyectos permanecen sin considerar esta proyección a futuro.

Keywords: Environment (built and natural) – Climate change; Aid; South Asia; Sub-Saharan Africa; Latin America and the Caribbean

Introduction

Tackling climate change is widely recognised as crucial to achieving long-term sustainable poverty alleviation. Poverty alleviation and climate change are intimately linked (Stern 2007)

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as the poorest people tend to suffer the greatest impacts and have the least capacity to adapt. Even today climate shocks, like droughts, flooding, and storms, have a material impact on the development prospects of the poorest countries. Since 1980, weather-related catastrophes have caused almost 1.2 million fatalities and led to direct damages amounting to US$610 billion in low income (LICs) and lower-middle income countries (LMICs).[1] For the poorest in society, these direct impacts can have a long-term influence on economic prospects.

Climate change is expected to increase the intensity and frequency of climate shocks in many regions (IPCC 2012). In parallel, gradual changes in climate such as rising temperatures, changing rainfall patterns, and sea level rise, will affect human health, food systems, water supplies, and ecosystems. This will create a more challenging environment for development (World Bank 2010, 2013a). Climate change will also interact with other pressures, such as population growth, urbanisation, resource scarcity, and conflict, which will multiply risks to development.

Without appropriate interventions, climate change could create a vicious circle of growing vulnerability and impacts; the poor could be driven deeper into poverty and the gains achieved through development cooperation may be reversed (World Bank 2010). This risk is high on the political agenda. The May 2013 report of the High Level Panel on the Post-2015 Development Agenda reiterated that "*without tackling climate change, we will not succeed in eradicating extreme poverty*" (UN 2013, p. 55).

Many development agencies acknowledge that adapting to climate change is critical to achieving broader development goals.[2] As part of the Copenhagen Accord, developed countries agreed to mobilise US$100 billion per year to support adaptation and mitigation by 2020.[3] The UK has committed a budget of GB£3.87 billion to the International Climate Fund (ICF) between April 2011 and March 2015, of which around half is allocated to adaptation and the remainder to low-carbon development and forestry. Together, the multilateral development banks provided US$3.7 billion in adaptation finance in 2011 alone.[4]

Yet this represents only a small fraction of total development assistance. For example, official development assistance (ODA) reached around US$130 billion per year from OECD DAC (Development Assistance Committee) countries over the period 2010–12.[5] It is crucial to ensure that these core programmes are resilient to future climate change. Klein (2001) describes three ways in which climate change could affect development projects:

- *The direct risk to the expected long-term outcome of projects*. Certain projects are particularly sensitive to climate change, like those involving water supplies, food, natural resources management, human health, and disaster resilience. In addition, capital investments, such as roads, bridges, major irrigation systems, and dams, last for many decades and so may have to operate under a set of climatic conditions for which they were not designed.
- *The indirect risk to the expected outcome of the projects*. Climate change alters the natural, social, economic, and political environment in which projects operate. So an impact in one part of the world may have significant implications for another though global supply chains.
- *The effects of the project and its outcomes on the vulnerability of communities or ecosystems* to climate change. Many projects can have co-benefits that help reduce vulnerability to climate change but there can also be unintended negative consequences; projects can influence the vulnerability of communities (potentially irreversibly) well beyond the formal end of the project. This can potentially lead to a situation where short-term interventions result in "*long-term maladaptation, increasing vulnerability to climate shocks*" (Brooks, Grist, and Brown 2009, p. 741).

"Climate-proofing" involves designing and implementing projects in such a way that they achieve their desired objectives (outcomes) irrespective of current variability and future climate change and avoid any negative impacts on the long-term vulnerability of people or economies (Klein et al. 2007; OECD 2009). This is a material issue for development organisations (Klein et al. 2007). For example, a review in 2006 concluded that 40% of World Bank projects were at significant risk from climate (World Bank 2006). An OECD analysis assessed all official aid flows from 1998 to 2000 to six developing countries and found that US$ half a billion per year in flows to Bangladesh and Egypt, and about US$200 million to Nepal and Tanzania, were at risk from climate change (van Aalst and Agrawala 2004). In 2006 OECD member states made a commitment to integrate adaptation into development cooperation (OECD 2006). This is now a public commitment made by many development organisations. For example, in DFID's 2011–2015 Business Plan there is a commitment to make programmes more "*climate-smart*" (DFID 2011a).

However, a critical question for aid agencies is where *additional* action is required *today* to manage expected climate-related risks to projects in the *future*. In this paper, we refer to this as "future-proofing".[6] Investing in future-proofing today is not necessarily the best course of action in all cases as it can entail greater costs or trade-offs to secure benefits that may not be realised for a decade or more. For example, the World Bank (2006) estimated that accounting for future climate in high-risk projects today could potentially increase project costs by between 5% and 15%.[7] Dercon (2012) and Béné et al. (2012) highlight that adaptation can in some cases entail a productivity trade-off. These costs and trade-offs of future-proofing must be weighed against the urgent need to allocate resources where they can have the greatest impact on poverty reduction today.

This article sets out to identify where future-proofing might be justified as an immediate action. Our central hypothesis is that although many projects could be deemed to be at risk from climate change (e.g., that 40% of World Bank projects), in only a small number of cases is *additional* action justified *today* to manage expected *future* climate change. The article sets out to test this hypothesis through the application of a framework to identify projects where future-proofing might be justified today.

In the second part of our analysis, we ask where there are signs that action may be justified today how well this is identified by development organisations? Finally, we provide best practice examples of different types of future-proofing from recent development projects. Throughout, we apply frameworks that are simple enough to be used routinely by aid agencies to identify projects requiring additional analysis.

In the following section, we introduce the methodology for the study, including the proposed framework for identifying where future-proofing might be justified. We then give the findings from the screening exercise for three countries and two development organisations, before considering *how projects should be designed differently* to account for long-term risks today and drawing examples of best practice from recent programmes. Finally, we discuss the findings, with a focus on the barriers to future-proofing in practice.

Methodology

Conceptual framework for future-proofing

The framework aims to identify where *additional* future-proofing action is likely to be justified today despite the potential costs and trade-offs. To do this fully would require detailed cost-benefit analyses. We introduce a simple qualitative approach to screen projects based on the frameworks outlined in Fankhauser, Smith, and Tol (1999).

Fankhauser, Smith, and Tol (1999) lay out an economic framework for appraising the *optimal timing of adaptation*; where there are benefits to adapting now to future climate and where this can be left until later given the additional costs that may be involved.[8] They conclude that early action is likely to be justified in the case of "*quasi-irreversible investments with a long lifetime (e.g. infrastructure investments, development of coastal zones)*", where they suggest that "*precautionary adjustments may be called for to increase the robustness of structures, or to increase the rate of depreciation to allow for earlier replacement*" (p. 67). Another important area identified by Fankhauser et al. (2013) is where there are *long-lead times* for action. This includes for example, research and development, building institutional capacity, and migration out of hazard-prone areas.

In the context of development projects these studies suggest three areas where additional action today is justified to adapt to future risks:

(1) *Long-lived, investments with large sunk costs*, such as hydropower stations, roads, dams, and other infrastructure. A failure to account for climate change upfront in such long-lived investments could mean that they underperform (e.g., in the case of water supply systems and hydropower) or become exposed to increasing damage. This could mean that investments need to be retrofitted or replaced prematurely, imposing greater costs. Figure 1 illustrates the lifetime of different investments; new transport and energy infrastructure can last for 40 years or more, large dams for at least 60 years, and patterns of urban development (the layout of suburbs, roads, and other infrastructure in a city), for more than 100 years. The climate is likely to be very different on these timescales. Capital investments are particularly prone to maladaptation because they tend to be difficult to change over time.

(2) *Long-term planning and policy-making*, such as growth strategies, sector development plans, a poverty reduction strategy, coastal development plans, drought contingency plans, and urban zoning can have far-reaching and complex consequences that influence vulnerability for decades. In some cases, they will have positive co-benefits for long-term resilience, for example, through strengthening governance, building capacity, and increasing access to credit. But in a few cases there is a risk of maladaptation when people are inadvertently committed to greater and difficult-to-reverse decisions that may increase the risk from climate change. This includes:

- Social protection systems can increase resilience to climate shocks but will need to be adjusted over time to cope with the changing profile of vulnerability and climate risks.

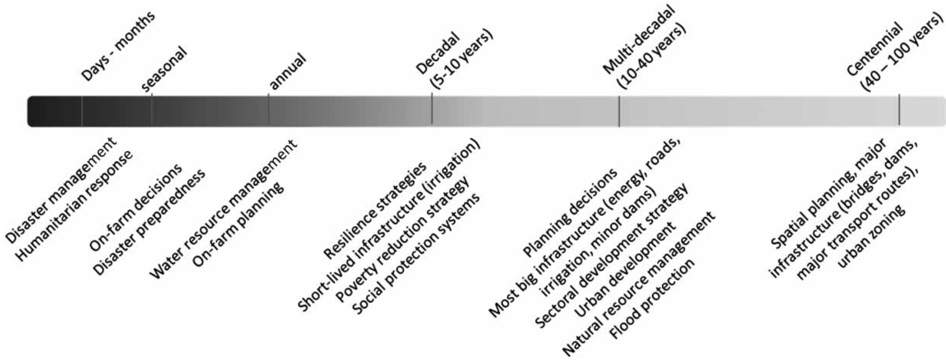

Figure 1. The timescales of different types of climate-sensitive decisions.
Note: Based on Stafford-Smith et al. 2011.

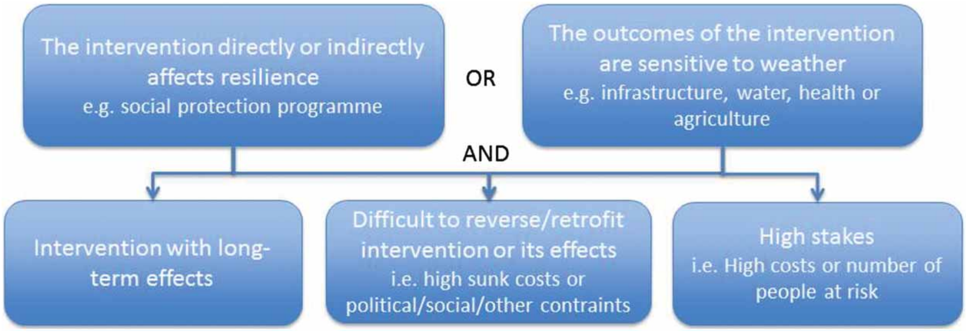

Figure 2. Simple framework illustrating the conditions under which long-term climate change is likely to be an important factor in the design of a programme.

If this adaptability is not built in from the start, systems can be difficult to adjust over time, due to political, social, or legislative barriers, making them less effective.

- A programme that promoted water-intensive agriculture may change behaviour semi-irreversibly and be detrimental if the climate became drier (IEG 2012).
- A rural roads programme that built intersections on floodplains could lead to urban development and put these communities at risk in the long term (IEG 2012).
- A project that built schools on a floodplain could, at best, limit access to education for local children, or at worst, put them in danger (Save the Children 2008).
- Even short-lived projects, like climate-smart agriculture or rural development programmes, can cumulatively add-up to major changes in long-term resilience in unexpected ways.

(3) *Interventions with long lead-times*: in cases where measures will take many years to implement, it may need to start now. For example:

- Removing barriers to adaptation and building adaptive capacity can take time, as it can involve major changes in institutional, governance, and legislative structures (e.g., land and water rights), decision processes, and cultural norms and behaviour.
- Research and development, for example, to develop and pilot new agricultural technologies can also take many years.
- Changing livelihoods and migration, for example, enabling rural communities in unsustainable areas to move and seek new economic opportunities can take time.

This leads to a set of criteria that can help in identifying projects where it may be beneficial to future-proof now. In general, where the project or its outcomes are long-lived (i.e., long-term), difficult-to-adjust, and have a high cost or impact (i.e., high stakes) then climate change is likely to be a central factor in design today (Ranger 2013). This framework is illustrated by the lower three blocks in Figure 2. Conversely, where the project or its outcomes are short-lived, low-cost, or adjustable over time,[9] then accounting for long-term climate change is less likely to be a central factor in design (Hallegatte 2009). A similar criterion for the urgency of adaptation was used in the UK's National Climate Change Risk Assessment (Defra 2012).

Screening methodology

To test our central hypothesis we apply our future-proofing framework to the project portfolios of two development organisations, the World Bank and the United Kingdom's Department for International Development (DFID), for three countries over the period January 2007 to September

2013.[10] All information is drawn from publicly available sources.[11] Altogether we evaluate almost 250 projects with a total value in excess of US$4.5 billion. However, this is a small slice of total development assistance provided internationally to the countries in question. The limited scope of the sampling means that it is not possible to generalise our conclusions, but it does provide an initial view to guide further analysis and test the hypothesis posed by this paper.

The three countries selected are situated in East Africa (country A), South Asia (B), and the Caribbean (C).[12] The East African and South Asian countries are low income and the Caribbean country is middle-income. The choice of country was guided by those considered to be vulnerable to climate change and where there is clear exposure to extreme weather events today (with several major events in the past decade). We selected countries with mid-sized portfolios (e.g., around 50 DFID projects over 2007–13) to give a good sample size. We excluded countries seen as leaders on climate change (e.g. Ethiopia and Bangladesh) to avoid biasing our sample. The three countries selected have very different geographies but each country is exposed to flooding as well as other forms of natural hazards.

Before applying the future-proofing framework, we conducted a risk screening of all the projects in the country portfolios of the two agencies to identify those with a potential sensitivity to climate. The aim was to produce a set of "climate-sensitive" projects similar to the 40% identified by World Bank (2006). The risk screening was undertaken through a simple tool that combines elements from Burton and van Aalst (2004), EuropeAid (2009), and DFID (2012a).[13] This measures two elements of sensitivity: (1) the direct or indirect effect of the intervention on the resilience of people or systems, and (2) the sensitivity of the outcomes of the intervention to weather. This is shown by the top two blocks in Figure 2. We note that this screening can only tell us where there is a *potential* risk (Hammill and Tanner 2011) as the method does not take any account of the quality of project risk management. The future-proofing framework was then applied to projects scored as having a medium or high sensitivity to climate. Unless otherwise stated, all results are given in terms of numbers of projects rather than their value.

We emphasise that this analysis is preliminary and should be seen in light of the following qualifications. First, the findings cannot be extrapolated to all developing countries and the projects may not be representative for either organisation. Second, we do not consider additional activities within the country, including changes to development plans and the role of non-traditional donors or a broader spectrum of development activity. Third, this evaluation is based on publicly available documents that provide a limited picture of the projects and the organisations in question. For these reasons, this evaluation should be considered a snapshot that should be deepened with further analyses.

Evaluating current action

The final part of the analysis evaluates if and how climate is considered in the project design of medium to high potential risk projects through a review of publicly available documentation. Projects are rated as reaching one of five levels:

Level 1. No mention of climate or climate change at all
Level 2. Climate risks mentioned in the documentation (but not climate change)
Level 3. Climate change mentioned in the documentation
Level 4. Risks from climate change to the project and/or opportunities discussed
Level 5. Signs that future-proofing is integrated in the project design.[14]

Three constraints on this analysis are noted. First, public records are incomplete for some projects, particularly in the DFID portfolios in the earlier years; these projects are not included in the analysis. This means that the sample sizes for this part of the analysis are smaller. Second, even if climate risks are mentioned in the documentation, this analysis cannot evaluate whether this was implemented in practice and the quality of the implementation.[15] The reverse is also true; if climate risks are not mentioned in documentation, the organisations commissioned to implement the projects may still take action to future-proof projects. This analysis can only tell us, therefore, if risks are being identified and managed by development organisations in the early stages of project design. Third, we find that the description of future-proofing measures in the project documentation is often highly generalised (e.g., they often refer to mainstreaming but give no details on what this will entail specifically) and so it is difficult to judge the true level of integration – in this analysis, we tend to give the benefit of the doubt, so there may be a positive bias.

Screening results

Sensitivity of portfolios to climate risks

In agreement with previous studies, we estimate that around 30% of the projects (by value) have a medium or high potential risk, although this varies by country and portfolio from about 20% to 80% (Figure 3). This is driven by the risk profile of the country and the types of projects within the portfolio rather than being a reflection of the quality of risk management. About 40% of projects (by value) were rated as negligible risk.

For country C (Caribbean), about 80% of projects (by value) are rated as high potential risk. This could be because natural hazards and climate change are some of the greatest risks facing this country and therefore development projects tend to focus on climate-sensitive sectors. It is also a much smaller portfolio and the findings are skewed by a few big projects.

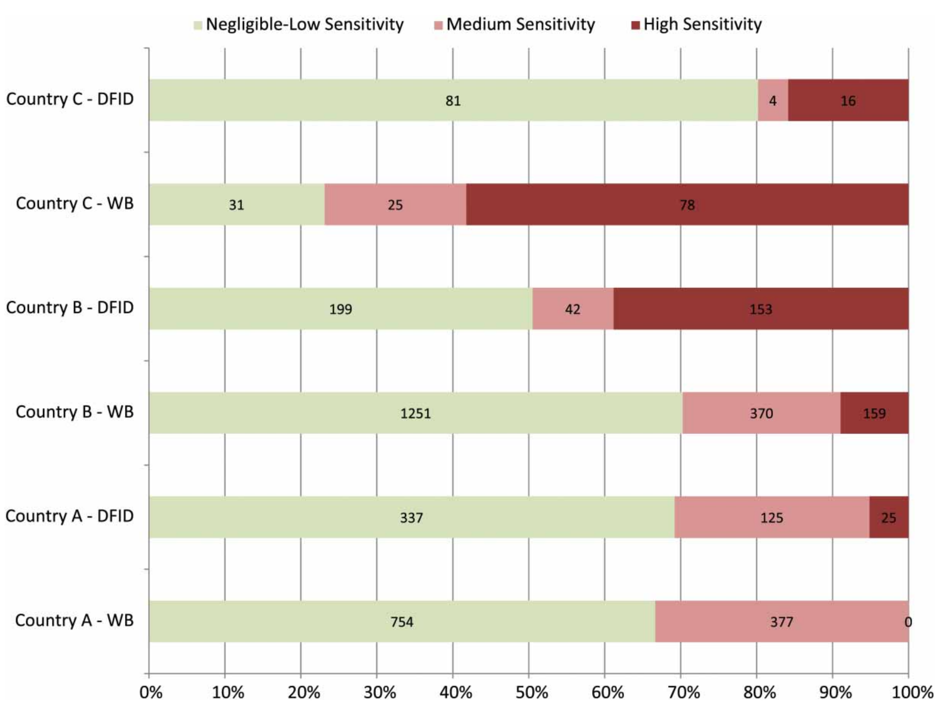

Figure 3. Screening of the potential sensitivity of the project outcomes to climate change.
Note: Values indicate numbers of projects.

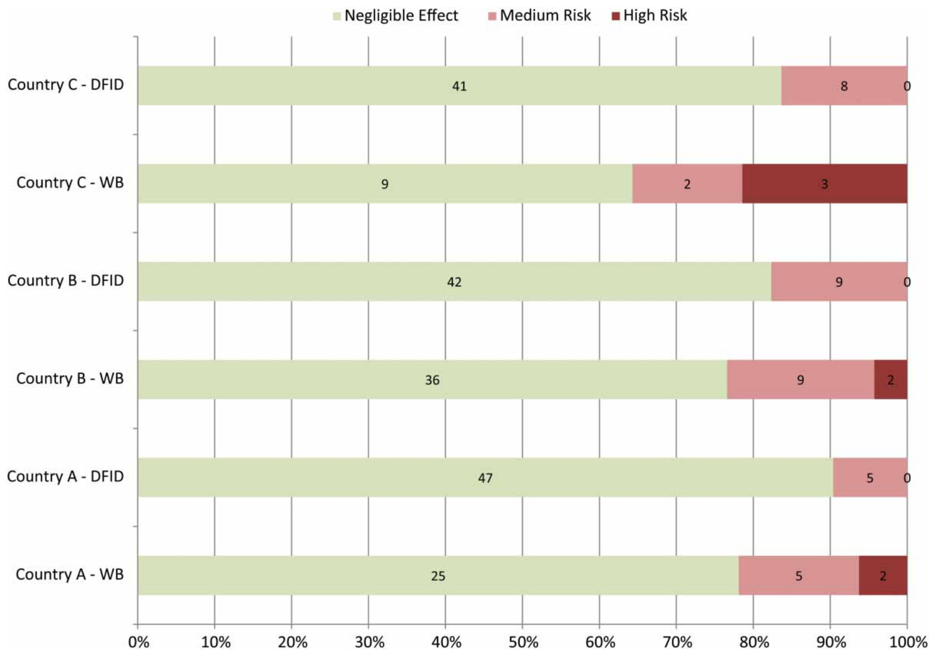

Figure 4. Screening of the potential for a negative impact from the project on local resilience.
Note: Values indicate numbers of projects.

The highest potential risk projects across all countries are mainly major infrastructure projects (hydropower, bridge maintenance, water supply infrastructure, and post-disaster reconstruction projects) and weather risk insurance. The DFID portfolio also includes a number of climate change adaptation projects that by their nature address sectors that are sensitive to climate. Medium-rated projects tended to be major agricultural programmes, social safety net programmes, regional electricity transmission line projects, water resource management, and rural roads development projects.

Figure 4 shows that between 10% and 35% of projects could potentially have a negative impact on local resilience if climate change is not accounted for properly; this represents 30% of the portfolio across the three countries and two organisations by value and over US$1 billion. This includes many of those medium-to-high risk projects in Figure 3 (e.g., the failure of a hydropower station due to climate change would threaten local resilience), but also additional projects, such as support to extractive industries (which can both enhance and reduce resilience at different scales)[16] and urban governance (which affects urban resilience). This result should be balanced against our finding that over 80% of projects have a *strong* potential to increase long-term resilience; through, for example, building institutional capacity, increasing wealth and improving health, education and financial services (addressing the "*adaptation deficit*" [Fankhauser and McDermott 2013).

Where might future-proofing be justified today?

Figure 5 suggests that a significant proportion of projects rated as having medium or high potential risk could require urgent action to future-proof activities against climate change. This varies significantly between countries, ranging from about 5% to 55% of projects (or 2% and 30% of all projects).

Figure 6 summarises the types of projects that tend to emerge as "*high urgency*" in the analysis. The most common are public buildings (schools, hospitals) and transport infrastructure, followed by urban planning, infrastructure, and post-disaster reconstruction.

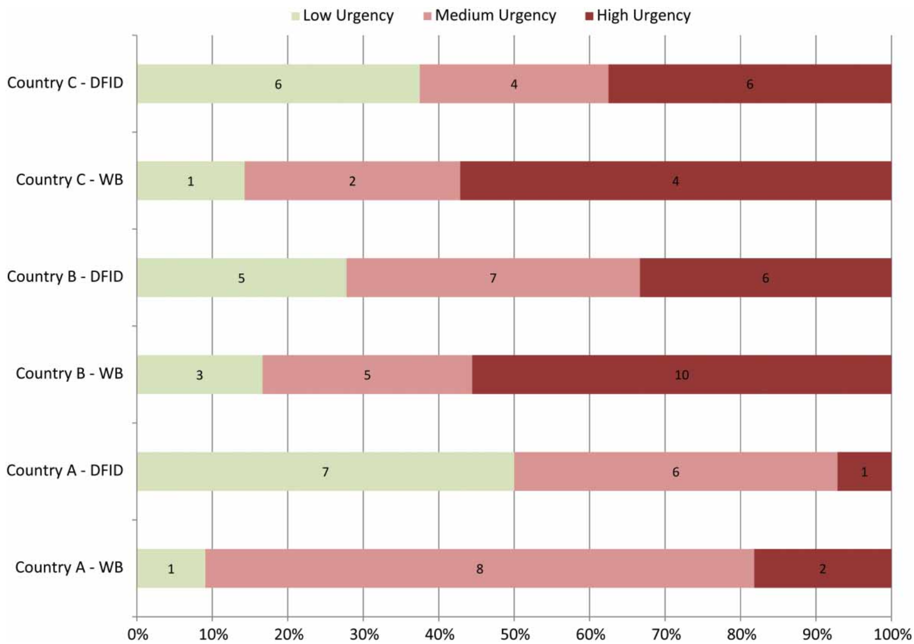

Figure 5. Urgency of considering long-term climate risks in development intervention for those projects at medium to high risk.
Note: Values indicate the numbers of projects.

In the main these findings support our central hypothesis that in only a small number of cases would *additional* action be justified *today* to manage expected *future* climate change. However, this hypothesis does not hold for all country portfolios. In particular, country portfolios with more major infrastructure projects (as in the World Bank portfolios) tend to require more urgent future-proofing.

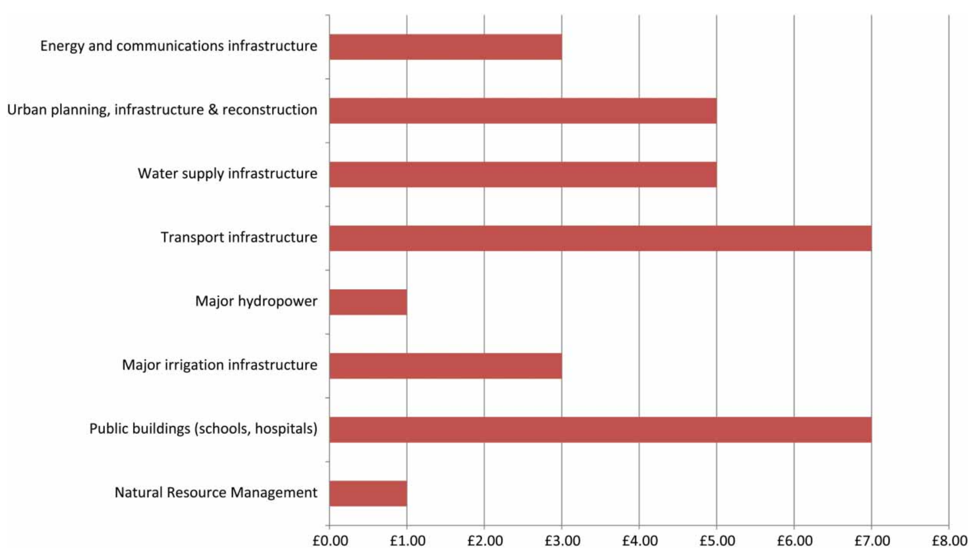

Figure 6. Types of projects rated as requiring urgent action.

Are climate risks recognised in project documentation?

Across the DFID portfolio we find that over 90% of medium to high potential risk projects at least mention climate change (i.e., rated Level 2 using the method outlined in Section II.c) and around 50% include some form of future-proofing to climate change (Level 5) (Figure 7). However, many of these projects are targeted climate change projects. This includes, for example, projects to establish national climate change funds, support the development of climate change strategies, and "climate-proof" infrastructure.

If all International Climate Fund (ICF) projects (i.e., those DFID projects specifically targeted at climate change adaptation and mitigation) are removed from the sample, then the proportion of projects that include some explicit future-proofing falls to just over 30%, although recognition of climate change in project documentation is still high at 88%. Examples of future-proofing here include: incorporating a monitoring strategy into a water supply project to detect signs of climate change; mainstreaming climate change into national planning; capability building and establishing a climate change committee as part of a social protection programme. The extent of future-proofing is variable between countries. For example, for Country C, no non-ICF projects at medium-to-high potential risk incorporate future-proofing, while for Country A half of the non-ICF projects incorporate future-proofing. This finding requires further investigation before one could draw conclusions. For example, it may be a strategy of Country C to put all climate-sensitive projects into the ICF.

Importantly, many projects that are likely to require future-proofing today, like water and sanitation projects, rural road projects, and disaster resilience, are not ICF projects. If we focus our sample on only these projects (i.e., non-ICF, medium-high sensitivity and likely to require future-proofing), then we find that around one third include future-proofing explicitly. However, the sample size with available documentation is small – only six projects.

Across the World Bank portfolio, we find that around 20% of medium-high potential risk projects mention climate change. Across the 93 projects reviewed we identified six where climate change was explicitly considered in the project design. This included, for example, climate-proofing social protection systems, post-disaster integration of climate change adaptation into reconstruction, and incorporating knowledge generation and capacity building into projects. But performance varies significantly by country; for country C, all projects at least mention climate risks (Level 2) and almost half integrate resilience to climate change into the project design (Level 5). This might be a reflection of the political economy of the county in question that would influence the scope of options proposed for IDA assistance.

Of those World Bank projects that we suggest are likely to require future-proofing today (16 projects in total), we find only one where future-proofing measures are explicitly incorporated into the design documentation. However, the sample size is too small to draw conclusions. The recent World Bank Independent Evaluation Group's evaluation of the World Bank portfolio (IEG 2012) conducted a more extensive review and concluded that there is a general lack of forward-looking, pro-active development projects, which anticipate future risks and act to reduce them ahead of time.

There are clear signs of improvement in integration of climate change in both portfolios. Figure 8 shows the proportion of all medium to high potential risk projects, where documentation is available,[17] that at least reference climate change in their documentation (i.e., reach at least Level 3 above) divided into two time periods (by project start date): 2007 to 2010 and 2011 to 2013. We find that all of the medium-high potential risk DFID projects at least reference climate change in the latter period and the proportion of World Bank projects mentioning climate change improves from 14% to 22%. This estimate is consistent with the IEG evaluation of the World Bank's experience on mainstreaming adaptation (IEG 2012), which found the proportion of all World Bank projects mentioning climate change adaptation increased from less than

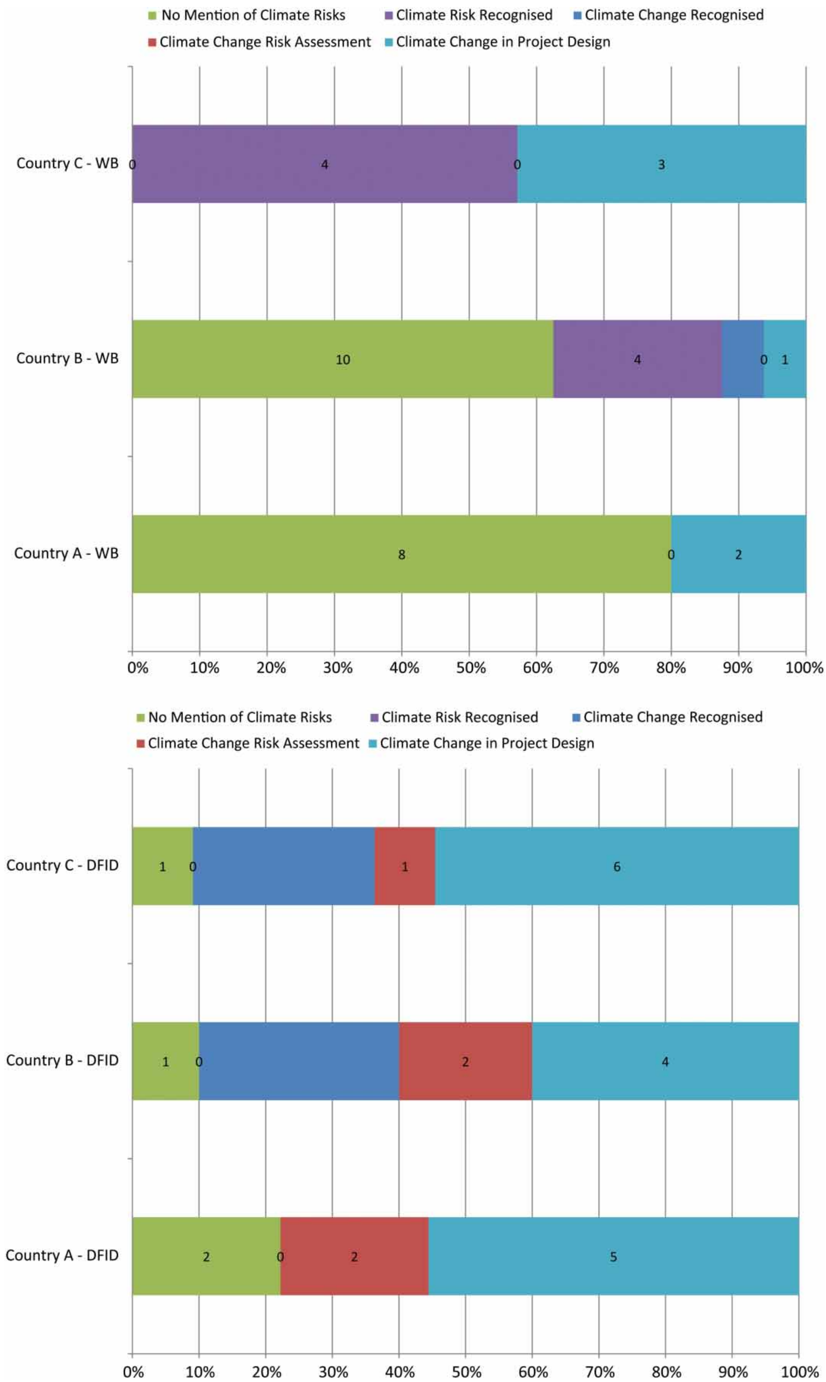

Figure 7. Level of integration of climate risks and climate change in the project documentation of medium and high risk projects: (top) World Bank portfolio and (bottom) DFID portfolio.

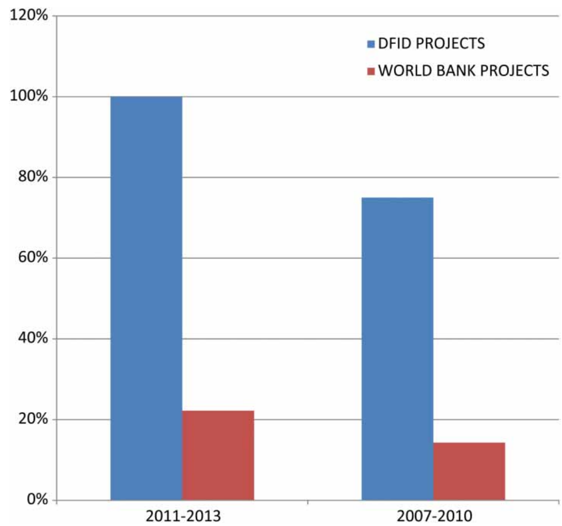

Figure 8. Proportion of projects rated as medium to high potential risk that at least reference climate change in the publicly-available documentation.

1% in 2000 to around 12% by 2011. This is a clear improvement from situation pre-2007 based on Klein et al. (2007), which reviewed the portfolios of six development agencies and concluded that climate risks were not well assessed and rarely mentioned in project documentation.

The higher level of integration within the DFID portfolio may partly reflect the introduction of the Climate and Environment Appraisal (CEA) process in late 2010. This made it mandatory for all DFID project business cases to include an assessment of the potential risks and opportunities from climate change to the project. DFID's Strategic Programme Review (2010/11), International Climate Fund and "Future Fit" initiative (2012/13), may also have driven greater awareness and incentives for integration. Over the period of this study, assessment of climate change risks was not mandatory within World Bank projects. In addition, the World Bank is a far larger organisation, so integration at the project level will inevitably take longer to achieve. Given that climate change is a special theme for IDA 17, we expect the level of integration to increase over the coming years.[18]

For all these findings, we reiterate our earlier qualification that just because climate change is integrated into the project documentation, this does not necessarily mean that the project is successful in building long-term resilience. This is an assessment of *process* rather than *outcomes*. In addition, we have found that the discussion of future-proofing in project documentation tends to be highly general and so it is difficult to draw robust conclusions on the level of integration (e.g., often discussing mainstreaming without giving details). More detailed study is required to assess the true extent of integration of future-proofing into the project design and, more importantly, the project outcome. Such a study would require on-the-ground evaluation of projects.

Identifying best practice in future-proofing

This final part of the analysis aims to identify examples of best practice in future-proofing across the portfolios of the two development organisations. To do this, we propose a framework for what future-proofing would look like in practice for development projects, based on those proposed by Klein et al. (2007), McGray et al. (2007), and OECD (2009).

Each of these three studies suggests that future-proofing does not necessarily mean that projects will look radically different or that they will be more expensive. Klein et al. (2007) stress that

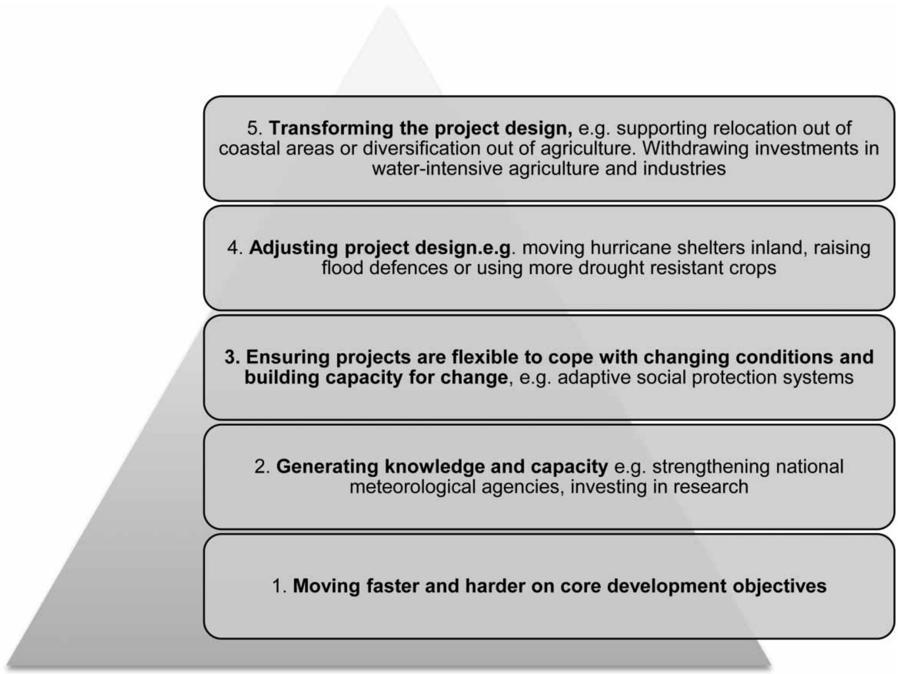

Figure 9. An illustrative scale of how the inclusion of climate change within interventions today may alter those interventions, relative to the counterfactual.

future-proofing is not necessarily about technological measures, like building bigger pipes in drainage programmes or drought-resistant crops, but can also include training and capacity building and institutional support. McGray et al. (2007) suggest that adaptation can entail a continuum of measures, from "*low-regret*" measures like reducing vulnerability and capacity building, through to making more significant adjustments to plan to explicitly address future risks, such as relocation and radical technological change (OECD 2009). This is consistent with our findings from the review of the portfolios from three countries.

We suggest that a similar continuum applies to future-proofing development projects. For some projects, low-regret measures may be sufficient, but a few may need to move further up to continuum toward major adjustments. Figure 9 illustrates this continuum; the pyramid structure reflects our hypothesis that there will be fewer projects requiring more radical adaptations. In this section, we describe our proposed continuum and give best-practice examples from the wider portfolios of the World Bank and DFID.

In line with McGray et al. (2007), we suggest that the first and second levels of the continuum of integrating *long-term* climate change are: increasing efforts to reduce vulnerability through good development and reducing other stresses; and building *general* capacity, including investing in knowledge and skills. Fankhauser et al. (1999) showed that long-term climate risks increases the rationale for moving *faster and harder* on core development and disaster resilience, and for investing in information. From our review of the portfolios of three countries, we find that most projects (more than 80%) are likely to have positive impacts on resilience to climate change.

An example is the "Adaptation for Smallholder Agriculture Programme" (ASAP) (DFID 2012b), launched in 2012 by the International Fund for Agricultural Development (IFAD). ASAP works in 40 countries to invest in practices and knowledge to build the capacity of smallholder farmers to manage current risks and adapt to climate change.[19] It aims to safeguard the food systems on which poor smallholder farmers depend and to demonstrate how to scale up practices and technologies that build resilience and increase prosperity.

Another example is the Ethiopian Productive Safety Net Programme (PSNP) Climate Smart Initiative (CSI) (World Bank 2013b). The PSNP provides food and cash to food insecure Ethiopians; in a typical year 14 million Ethiopians do not have enough food to eat and climate variability is an important underlying driver.[20] To address chronic food security over the long term, Ethiopia needs to build a consideration of climate change into its current food security programming. The PSNP CSI will enhance adaptive capacity through improving information flows, such as weather information and early warning systems, and supporting local decision-making in the PSNP. It will also help to build capacity to adapt for the long term by enabling communities to diversify livelihoods and promote technological innovation.

The third level is where projects begin to look very different. The focus here is not on making radical changes now, but on designing the project so that it can anticipate, learn, and evolve over time to cope with changing climate risks, while still achieving its objectives (Walker et al. 2013). A commonly cited example is the Thames Estuary 2100 Project, where instead of building a costly new flood barrier for London today, a plan was developed that allowed the flood management system to be adjusted incrementally over time as more is learnt about future risks. The same principles can be transferred to development interventions (Ranger 2013); an example is an *adaptive* social protection system, which is designed from the start to expand or contract in response to changing needs (IDS 2012). A number of the projects reviewed from the three sets of portfolios included features that aimed to build adaptive capacity. For example, one project recommended a monitoring system as part of a water supply programme to detect early signs of climate change.

These first three levels are low-regret; they are low cost and likely to have benefits today and in the future (OECD 2009). The next two levels entail measures that are designed explicitly to account for future risks now. Designing these types of projects will likely require more technical expertise and information, including detailed analyses of risks under different climate and socio-economic scenarios and quantitative assessments of options. This is likely to apply to fixed, long-lived capital investments that are difficult to adjust.

The fourth level is akin to Klein et al.'s (2007) building bigger pipes in drainage programmes or drought-resistant crops. It can mean changes in engineering (such as higher sea walls, better drainage systems, resilient school buildings), new practices (climate-smart agriculture), new policies (water permits, resilient urban zoning, and stronger building codes), and different technologies (rainwater harvesting, insurance) (OECD 2009). Two examples from across the whole portfolio of the two organisations are:

- The Haiti Strategic Programme for Climate Resilience (CIF 2013), which conducts a detailed assessment of climate change risks and proposes a strategy to engineer its infrastructure, agricultural systems, and coastal cities to cope with future risk, as well investing in measures to build adaptive capacity through climate monitoring, training, and institutional strengthening.
- The US$412 million Trung Son Hydropower project in Vietnam that adopted high safety standards, zoning and warning systems, and built a secondary "*fuse dam*" to reduce the risks associated with failure due to changing river flows (IEG 2012). Several projects within the three sets of portfolios reviewed referred to climate-proofing programmes and infrastructure, and mainstreaming climate change into policies and plans.

Finally, the fifth level is the potential transformation of a project where a major change is required. For example, Stafford-Smith et al. (2011) describe how in the highest risk areas, communities may need to radically change where and how they live to cope with climate change. One example is a small-island state, where populations may need to relocate to escape rising sea levels. We suggest that in some cases, development projects may need to similarly transform, or drive transformational change in societies.

We found few examples of where this has been done in practice in the literature and none from the three sets of portfolios reviewed. An example is a recent World Bank project in India (reported by IEG 2012). The Indian portion of the Sundarbans, a great mangrove-dominated delta facing the Bay of Bengal, is home to more than four million poor people. Many live at or below sea level and are at constant risk from floods and cyclone. An analysis found that many well-intentioned and apparently adaptive activities, like strengthening embankments, were maladaptive, boosting long-term vulnerability. While there are urgent poverty challenges it concluded business-as-usual development is not sustainable in the long-term. Instead, the project proposes that the Sundarbans embark on a multi-generational plan to re-engineer estuary management (e.g., moving back defences and allowing mangroves to recover) and enable welfare-improving voluntary out-migration from the most threatened areas, including through education. In the short term, this would be complemented by investments in early warning systems; cyclone shelters; and health, water, and sanitation services (IEG 2012). These types of programmes can be extensive and entail difficult and complex trade-offs.

Discussion

This study has suggested a relatively low integration of future-proofing strategies into the recent projects of two development organisations for three countries since 2007. While it is not possible to extrapolate these findings to other countries and organisations in this study, other studies have reached similar conclusions (e.g., IEG 2012).

Given this, it is important to consider what the barriers are to integrating climate change into development programmes. Practical experience within development agencies, such as the two described in this paper, suggests that there are many. This is also reflected in the existing academic literature. For example, Hammill and Tanner (2011) report that the difficulties in identifying and assessing climate and complex vulnerability information is often cited as one of the biggest challenges here. There is also a lack of information about the costs and benefits of different adaptation measures and until recently, little robust or systematic monitoring and evaluation of adaptation.

However, other literature suggest more fundamental political, structural, financial, and behavioural barriers. Historically, planning and policy-making is often slow to react to changes in the external environment and institutions have limited capacity to learn from and foresee change. Jones et al. (2013) concludes that the majority of climate/disaster resilience and humanitarian projects tend to be either reactive (managing events as they happen) or deliberative (learning from the recent past and adapting to it). The challenges to future-proofing may include[21]:

- There may be a general lack of awareness of the issues.
- Lack of experience in future-proofing amongst development organisations – this is a new agenda and learning is required so it will take time to implement fully.
- Future-proofing will require more time, resources, information, and technical capacities, in an environment where there are already constraints.
- The administrative separation of finance for specific and additional adaptation from normal development programme finance may also create a barrier in this respect.
- The short duration of many development projects (only around three to five years).
- The incentives on development professionals for projects that deliver rapid impacts and high returns on investment will tend to reduce investment in adaptation, which is often percieved as having more uncertain, long-term, difficult-to-quantify, and sometimes intangible benefits.
- A lack of long-term monitoring and evaluation systems for adaptation.

Another often cited challenge in integrating future climate into decisions today is the uncertainty over long-term climate projections (IPCC 2013). Most risk assessments are based on historic data; but planning for climate change requires a more forward-looking approach. The risk of getting it wrong increases as one moves up the continuum of adaptation. For the first three types of adjustments (Figure 9), uncertainty is unlikely to be important as the measures are "*low-regret*" (OECD 2009). Where major changes to plans are made to account for long-term climate change, the potential for maladaptation is greater. Uncertainty means that we cannot optimise the design of a project to a particular future climate. However, in theory this should not be a barrier to integrating resilience to climate change into development projects (Ranger 2013). A desirable approach is one that is "*robust, meaning that it performs well under a wide variety of futures, and adaptive, meaning that it can be adapted to changing (unforeseen) future conditions*" (Walker *et al*. 2013, p. 956). There are tools available to help do this in practice, for example so-called futures techniques like scenario planning and methods for decision making under uncertainty (Ranger 2013).[22]

A further issue is the potential trade-offs between long-term resilience and short-term poverty alleviation (Dercon 2012). For example, more drought-resistant crops tend to have lower productivity. Another example is the Sundarbans case given above. In that case a balance was struck by both planning for the long term by relocating some people and investing in building resilience and reducing poverty in the near term. These so-called wicked problems in adaptation require a high level of understanding of the complex societal processes that generate poverty and vulnerability (Klein *et al.* 2007; Jones *et al.* 2013).

What more can be done to enable and promote future-proofing of development projects? Appropriate evidence and tools are a foundation to this; for example, there is a need for further economic analysis to identify where and how long-term risks should be built into projects today and to provide learning examples. Training and skills will also be important in applying evidence and tools in practice. But the most important advance must be to build an institution that creates the right incentives to integrate climate change; this requires leadership to institute a cultural change that places a greater value on the long-term sustainability of development investments and progress.

Both organisations are working to deliver both specific climate change interventions and also mainstream climate change across other areas through portfolio screening or safeguard systems. For example, the DFID Future Fit programme initiative aims to integrate long-term resilience to climate change and resource scarcity across all DFID programmes. Coupling climate change resilience to the disaster resilience agenda (DFID 2011b), provides an opportunity to do this more efficiently.[23] For the World Bank, climate change is a special theme for IDA 17 and the Bank has committed to integrate climate risk into all new developments (World Bank 2013c). It is also worth noting the Management Response to the recent IEG evaluation of World Bank experience with adaptation.[24] We recognise that changing the operations, practices, and behaviours of large institutions takes considerable effort, time, and leadership. This evaluation should therefore be considered an initial snapshot and should be repeated after IDA 17 and broadened with further analyses.

Conclusions

This article gives a framework for identifying where and how development projects should integrate long-term climate risks into their design today. We conclude that portfolio-level screening can be a useful tool, but more project-specific evaluations are needed to assess the extent to which long-term climate is being integrated into projects in practice and the barriers faced by development professionals in this area.

Acknowledgements

We thank Sarah Arnold for her assistance in the portfolio analysis and John Carstensen, Jane Clark, Stéphane Hallegatte, Richard Teuten, and Tim Wheeler for their comments. Any remaining errors are our own. Nicola Ranger's research was supported by the Global Green Growth Institute (GGGI), the ESRC Centre for Climate Change Economics and Policy and the Grantham Foundation for the Protection of the Environment. The views expressed here are those of the authors and do not necessarily reflect those of their institutions.

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Notes

1. Data provided by Munich Re.
2. Adaptation can be defined as *"adjustments in human and natural systems, in response to actual or expected climate stimuli or their effects, that moderate harm or exploit beneficial opportunities*": IPCC (2012).
3. UNFCCC Document FCCC/CP/2009/11/Add.1 (paragraph 8)
4. Joint MDB Report on Adaptation Finance 2011: A report by a group of Multilateral Development Banks (MDBs) comprising the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the World Bank (WB) and the International Finance Corporation (IFC). Accessed September 20, 2013. http://www.eib.org/attachments/documents/joint_mdb_report_on_adaptation_finance_2011.pdf
5. Aid statistics from OECD DAC. Accessed September 20, 2013. http://www.oecd.org/dac/stats/data.htm.
6. "Future-proofing" is defined here an *additional* action to anticipate *future* risks and act now to reduce them ahead of time. We emphasise "additional" because in some cases the measures to cope with future risks are the same as those needed for current risks, e.g., building institutional capacity. Future-proofing is one part of "climate-proofing", which includes taking action to manage existing climate risks. The distinction is important as managing existing climate risks often bring immediate benefits, whereas for "future-proofing" the full benefits will not be realised until later.
7. Such estimates should be interpreted with caution as the costs will vary significantly between projects.
8. This includes real costs, such as building a hydropower station so it that operates under a wider range of river flows, opportunity costs, and benefits foregone (e.g., from building on flood plains).
9. Short-lived, flexible, and lower-cost projects can provide major opportunities to build resilience to climate (Klein et al. 2007), but this is not a focus of this paper.
10. The start date, 2007, is chosen as we suggest that this roughly the point in time when the linkages between climate change and poverty alleviation became much clearer and more mainstream in thinking, following the release of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change in 2007, the Stern Review on the Economics of Climate Change in late 2006, and the Gleneagles G8 dialogue (with climate change and poverty as its two priority issues) in 2005.
11. Accessed September 20, 2013. DFID Development Tracker. http://devtracker.dfid.gov.uk/ and World Bank Projects Database. http://www.worldbank.org/projects. Accessed September 20, 2013. For DFID projects, the business case is the main source of information used and if not available, the most recent Annual Review or project completion report. For the World Bank projects, the Project Information Document is the main source of information use, though Project Appraisals, Environmental Assessments, and Implementation and Results Reports are also used.
12. The countries remain anonymous in this paper.
13. These rules are also consistent with guidance by USAID, GIZ, NORAD, and others (Hammill and Tanner 2011).
14. For example, the project might include measures to reduce climate risks or build capacity to cope with climate change, or climate risks may feature in the options appraisal.

15. For example, there it is difficult to establish whether climate change is merely name-checked or tick-boxed instead of being truly integrated into the project. This would require deeper investigation at project level.
16. Extractive industries could, in local terms, reduce resilience of the environment and local communities. However, at the national scale they could improve the ability of a country to manage external economic shocks (UNECA 2013).
17. For some DFID projects, particularly in the earlier period, no project documentation is publicly available.
18. IDA 17 is the next funding phase of the International Development Association (IDA), the part of the World Bank that focuses on helping the world's poorest countries.
19. These will include small-scale water harvesting and storage, flood protection, irrigation systems, agroforestry, and conservation agriculture, strengthening farmers access to markets and information (e.g., weather forecasts), and working with governments on policies to enable growth and climate resilience agriculture.
20. This is in return for labour for those who can provide it (around 80% of beneficiaries), and as a grant to those who are elderly and sick (around 20%) (DFID 2012b).
21. Challenges identified by the authors based on the literature review summarised by IPCC 2012.
22. See also, for example, the work of the Mediation programme (http://www.mediation-project.eu/platform/pbs/home.html) funded under the EU's 7th FP.
23. DFID conducted a number of activities to integrate disaster resilience into programmes, including pilots and risk assessments (DFID 2011b). A similar framework would be needed to deliver climate change resilience. Coupling the two processes together would therefore be more efficient.
24. World Bank, Washington, DC. "Management Response to the IEG 2012." Accessed September 20, 2013. https://ieg.worldbankgroup.org/Data/reports/chapters/cc3_mgmt_response.pdf

References

van Aalst, M., and S. Agrawala. 2004. "Analysis of Donor Supported Activities and National Plans." In *Bridge Over Troubled Waters: Linking Climate Change and Development*, edited by S. Agrawala, 61–83. Paris: OECD.

Béné, C., R. Godfrey Wood, A. Newsham, and M. Davies. 2012. "Resilience: New Utopia or New Tyranny?." IDS Working Paper 405. Brighton: IDS.

Brooks, N., N. Grist, and K. Brown. 2009. "Development Futures in the Context of Climate Change: Challenging the Present and Learning from the Past." *Development Policy Review* 27 (6): 741–765.

Burton, I., and M. van Aalst. 2004. *Look Before you Leap: A Risk Management Approach for Incorporating Climate Change Adaptation into World Bank Operations*. Washington, DC: The World Bank.

Climate Investment Funds. 2013. *Haiti Strategic Program for Climate Resilience*. Washington, DC: Climate Investment Funds.

Dercon, S. 2012. "Is Green Growth Good for the Poor?." World Bank Policy Research Paper. Washington, DC: The World Bank.

Defra. 2012. *UK Climate Change Risk Assessment: Government Report*. London: Department for Environment, Food and Rural Affairs. Accessed June 4, 2013. https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-government-report

DFID. 2011a. *Business Plan 2011–2015 Department for International Development*. London: Department for International Development.

DFID. 2011b. *Defining Disaster Resilience: A DFID Approach Paper*. London: Department for International Development.

DFID. 2012a. "Climate Change & Environment Assessment for the Business Case." DFID Practice Paper. April 2012. London: Department for International Development.

DFID. 2012b. *Business Case for the Adaptation for Smallholder Agriculture Programme (ASAP)*. London: Department for International Development.

EuropeAid. 2009. *Guidelines on the Integration of Environment and Climate Change in Development Cooperation*. Brussels: EuropeAid.

Fankhauser, S. and T. McDermott. 2013. "Understanding the adaptation deficit: why are poor countries more vulnerable to climate events than rich countries?" Grantham Research Institute on Climate Change and the Environment , London UK, Working Paper No. 134.

Fankhauser, S., N. Ranger, J. Colmer, S. Surminski, and D. Stainforth. 2013. "An Independent National Adaptation Programme for Britain." Grantham Research Institute Policy Paper. London: Grantham Research Institute on Climate Change and the Environment.

Fankhauser, S., J. Smith, and R. Tol. 1999. "Weathering Climate Change: Some Simple Rules to Guide Adaptation Decisions." *Ecological Economics* 30 (1): 67–78.

Hallegatte, S. 2009. "Strategies to Adapt to an Uncertain Climate Change." *Global Environmental Change* 19: 240–247.
Hammill, A., and T. Tanner. 2011. "Harmonising Climate Risk Management: Adaptation Screening and Assessment Tools for Development Cooperation." OECD Environment Working Paper No. 36. Paris: OECD.
Independent Evaluation Group. 2012. *Climate Change Phase III - Adapting to Climate Change: Assessing World Bank Group Experience*. Washington, DC: The World Bank.
Institute of Development Studies. 2012. "Making Social Protection 'Climate-Smart'." IDS Policy Briefing No. 27. September 2012. Brighton: IDS.
IPCC. 2012. "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change." [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge: Cambridge University Press.
IPCC. 2013. "Climate Change 2013: The Physical Science Basis." Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Accessed October 14, 2013. www.ipcc.ch/report/ar5/wg1/
Jones, L., E. Ludi, P. Beautement, C. Broenner, and C. Bachofen. 2013. "New Approaches to Promoting Flexible and Forward-Looking Decision Making: Insights from Complexity Science, Climate Change Adaptation and Serious Gaming." A report for the Africa Climate Change Resilience Alliance (ACCRA). London: Overseas Development Institute.
Klein, R. J. T. 2001. *Adaptation to Climate Change in German Official Development Assistance – An Inventory of Activities and Opportunities, with a Special Focus on Africa*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit.
Klein, R. J. T., S. E. H. Eriksen, L. Otto Næss, A. Hammill, T. M. Tanner, C. Robledo, and K. L. O'Brien. 2007. "Portfolio Screening to Support the Mainstreaming of Adaptation to Climate Change into Development Assistance." Tyndall Centre for Climate Change Research Working Paper 102. Norwich: Tyndall Centre for Climate Change.
McGray, H., R. Bradley, A. Hammill, E. L. Schipper, and J. Parry. 2007. *Weathering the Storm, Options for Framing Adaptation and Development*. Washington: World Resources Institute.
OECD. 2006. "Declaration on Integrating Climate Change Adaptation into Development Co-operation." Adopted by Development and Environment Ministers of OECD Member Countries. 4 April 2006. Paris: OECD.
OECD. 2009. *Integrating Climate Change Adaptation into Development Co-operation*. Paris: OECD.
Ranger, N. 2013. "Topic Guide. Adaptation: Decision Making Under Uncertainty." Evidence on Demand. doi: http://dx.doi.org/10.12774/eod_tg02.june2013.ranger
Save the Children. 2008. *In the Face of Disaster: Children and Climate Change*. London: Save the Children.
Stafford-Smith, M., L. Horrocks, A. Harvey, and C. Hamilton. 2011. "Rethinking Adaptation for a 4°C world." *Phil. Trans. R. Soc. A.* 369 (1934): 196–216. doi: 10.1098/rsta.2010.0277.
Stern, N. 2007. *The Economics of Climate Change: The Stern Review*. Cambridge: Cambridge University Press.
UNECA 2013. "Economic Report on Africa 2013: Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation." http://www.uneca.org/publications/economic-report-africa-2013
United Nations. 2013. "A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda." Accessed Octber 18, 2013. www.post2015hlp.org/the-report/
Walker, W. E., M. Haasnoot, and J. H. Kwakkel. 2013. "Adapt or Perish: A Review of Planning Approaches for Adaptation Under Deep Uncertainty." *Sustainability* 5 (3): 955–979.
World Bank. 2006. *Clean Energy and Development: Towards an Investment Framework. ESSD-VP/I-VP*. April 5, 2006. Washington, DC: The World Bank.
World Bank. 2010. *World Development Report 2010: Development and Climate Change*. Washington, DC: The International Bank for Reconstruction and Development/ The World Bank.
World Bank. 2013a. Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience. A Report for the World Bank by the Potsdam Institute for Climate Impact Research and Climate Analytics. Washington, DC: The International Bank for Reconstruction and Development/ The World Bank.
World Bank. 2013b. *Ethiopia's Productive Safety Net Program (PSNP) Integrating Disaster and Climate Risk Management: Case Study*. Washington, DC: The World Bank.
World Bank. 2013c. *"Special Themes for IDA17". IDA Resource Mobilization Department Concessional Finance and Global Partnerships June 2013*. Washington, DC: The World Bank.

Appendix: Climate Change Risk Screening Tool

The project screening conducted in this study aims to identify where there are *potential risks* to a project, based on a set of attributes and criteria about the programme. The attributes and criteria are taken from EuropeAid (2009), DFID (2012a) and Burton and van Aalst (2007) (which are all similar). It is a simple rules-based rating tool, similar to those currently used by DFID, USAID, ADB and GIZ (Hammill and Tanner, 2011). The tool used in this paper also screens where action may be needed today to enhance the resilience of the project to long-term climate change. These attributes, explained in Section II and Figure 2, are drawn from Defra (2012). The tool inevitably requires some professional judgement to apply. To reduce biases, we calibrate our ratings against the examples given by Burton and van Aalst (2007). The tool benefits from a basic level of knowledge about how climate change may affect the country(s) in which the project operates.

A. POTENTIAL DIRECT OR INDIRECT EFFECTS OF CLIMATE ON PROJECT OUTCOMES

Is the achievement of the programme's objectives directly and significantly dependent on the climate over the coming ten years or more?

Could the programmes objectives be indirectly affected by climate change? E.g. The achievement of objectives in a rural development programme may be highly dependent on the availability of increasingly scarce water for irrigation

High	*Possible major threat to long-term success of project* E.g. The projects is a large fraction composed climate sensitive sector (e.g. >50% agriculture, infrastructure or water) and entails climate sensitive activities (e.g. irrigation, water supply management, malaria).
Medium	*Outcome of project could be affected by climate, but unlikely to be a major threat to long-term success. E.g. Some elements of the project are subject to climate risks (e.g. >20%* in climate sensitive sectors or with >10% climate sensitive activates) *or exposed to indirect effects from climate change* (e.g. schools in risky areas). Also, projects that are climate-sensitive, but are likely to have benefits under any climate (e.g. social protection, capacity building in agriculture).
Low	*Climate change unlikely to be a threat to long-term success of programme*. Minor inclusion of climate sensitive sectors and activities OR potential indirect effects from climate change.
Negligible	Climate sensitive activities make a negligible fraction of the project

B. EFFECT OF THE PROJECT ON LOCAL OR REGIONAL VULNERABILITY

Are there any indications at this stage that the project could have positive impacts on vulnerability? (Y/N) e.g. Does the project enhance governance capacity?

Are there indications that the project may increase the vulnerability of the population to climate variability and/or the expected effects of climate change?

High	*Project could have a strong effect on the climate risks facing the country or region*. E.g. infrastructure could trigger development in dangerous areas, even if the infrastructure itself is not at risk.
Medium	*Project may have indirect effects on the vulnerability of communities*. E.g.an agricultural market reform project that removes subsidies from certain crops can lead farmers to switch to crops that could make them more vulnerable to climate variability and change.

C. URGENCY OF INCORPORATING CLIMATE CHANGE

(i) LIFETIME: How long will the outcomes of the project last: Long (>30 years), Medium (10–30 years), Short (<10 years).

(ii) FLEXIBILITY: How easy it is to change the activities to adjust over time? (Low, Medium, High). *E.g. Infrastructure is an inflexible investment, whereas early warning systems can be adjusted every year*

(iii) SCALE: How large is the project: Large (>50 m), Medium (>5 m), Small (<5 m).