

Adapting to climate change in developing countries

– what role for private sector finance?

**Report on a workshop organised by DFID
and Forum for the Future**

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Summary of recommendations proposed at the workshop **

(1) Recommendations on insurance for adaptation

1.1 DATA
<ul style="list-style-type: none"> • Public sector to provide access to existing climate change data and vulnerability maps • Develop code of conduct for data-sharing • More research on variability of forecasts and associated risks • Gather more data on both hazard and vulnerability • Develop models further
1.2 PROJECTS
<ul style="list-style-type: none"> • Disseminate and learn lessons from pilot projects • Develop better links with grassroots organisations to improve uptake of schemes
1.3 PRO-POOR FOCUS
<ul style="list-style-type: none"> • Research to understand more about income that could be diverted to insurance • Research on cost-effectiveness of currently-used informal insurance mechanisms • Identify public sector outlets which can be used to raise awareness of benefits of insurance • Charge social levy on premiums • Social funds to protect the most vulnerable, to converge with and strengthen social safety nets • Extend voluntary offset schemes to provide funding to support the most vulnerable communities to adapt to climate change
1.4 RISK
<ul style="list-style-type: none"> • Brainstorm to establish how there could be more effective global risk pooling • Build climate risk assessment into Env't & Social Impact Assessments, specifications & contracts as precondition of insurance • Review and upgrade climate-sensitive design standards and codes of practice – including selection of crops, water management
1.5 REGULATION / TAX
<ul style="list-style-type: none"> • Establish where regulation is currently a constraint to index insurance • Change the tax treatment of catastrophe insurance to enable build-up of reserves • Support capacity-building in countries to develop regulation to promote adaptation
1.6 STRUCTURE OF INSURANCE MARKET
<ul style="list-style-type: none"> • Explore further ways of aggregating insurance so that insurance can reach a population that isn't financially aware and so that the market is more attractive for insurers • Larger MFIs to negotiate deals with private sector insurers (eg OI and AIG) • Build the capacity of the insurance market at the local level

** Note – These recommendations were proposed by individual participants at the workshop but they are not necessarily endorsed by DFID or Forum for the Future and nor should they be taken to reflect the views of all participants.

(2) Recommendations on risk assessment and management

<p>2.1 DATA</p> <ul style="list-style-type: none"> Assess what data is currently available in the public and private sector in order to identify key gaps and prioritise action
<p>2.2 RISK ASSESSMENT MODELS</p> <ul style="list-style-type: none"> Educate people in the financial sector on how risk can be incorporated into analysis Brokers to work with NGOs/environmental organisations to understand climate risk Investigate the dissemination of the UNEPFI or other tool-kits through appropriate channels Link climate change to business issues and develop success stories/build the business case for action Collaborative approaches should not be allowed to restrict the development of tools by individual financial institutions for competitive advantage, but there will be a need for some sharing of best practice
<p>2.3 REPORTING</p> <ul style="list-style-type: none"> Introduce a legal requirement for disclosure of climate risks in all investments Require climate change criteria to be incorporated in Stock Exchange listings in UK DFID / donor agencies can encourage sign-up to Principles for Responsible Investment
<p>2.4 PUBLIC SECTOR LEADERSHIP</p> <ul style="list-style-type: none"> The UK Government should lead by example in risk assessment – eg Thames Gateway Governments need to screen their own disaster risk reduction measures for climate risk Risk assessment techniques used by the public sector in its own investments need to be transparent Public sector, donors and agencies like IFC and CDC should take the lead in embedding systems for climate risk assessment Funding mechanisms must be designed to ease cooperation not competition between departments
<p>2.5 CLIMATE-PROOFING CONTRACTS</p> <ul style="list-style-type: none"> Financing and supply chain contracts can be used immediately to drive climate-proofing through the insertion of a simple clause to require climate change to be taken into account in contracts
<p>2.6 COMMUNICATION</p> <ul style="list-style-type: none"> Need to decouple language of sustainable development and climate change and link it to actual business issues such as storm damage, water availability, raw material supply etc Ensure that there are genuinely effective channels of communication between the experts servicing the three different goals of economic development, climate risk management and disaster risk reduction.
<p>2.7 REGULATION</p> <ul style="list-style-type: none"> Support for capacity-building on design / performance regulations and standards in developing countries Develop a process of peer review of standards between developing countries
<p>2.8 OTHER AREAS</p> <ul style="list-style-type: none"> Investigate current and potential future role of rating agencies Investigate role of country guarantee schemes and securitisation in long-term investment

Allocation of recommendations on insurance for adaptation

	What	Who	Priority	Complexity
D A T A	Provide free access to existing climate change data and vulnerability maps	Public sector data owners (UK and elsewhere)	High	Low
	Develop code of conduct for data-sharing	Public sector data owners and private sector	High	Low
	More research on variability of forecasts and associated risks	Public and private sector collaboration	High	High
	System of accreditation for data providers	Private sector initiative?	Low	Medium
	Gather more data on both hazard and vulnerability	Individual country governments	High	Medium
P R O J E C T S	Disseminate and learn lessons from pilot projects	DFID, other donors and IFIs	High	Medium
	Develop better links with grassroots organisations to improve uptake of schemes	Public and private sector collaboration	Medium	Medium
	Larger microfinance institutions need to negotiate deals with private sector insurers (eg OI and AIG)	MFIs and insurers	Medium	Medium
P R O - P O R	Research to understand more about income that could be diverted to insurance	DFID?	Medium	High
	Research on cost-effectiveness of currently-used informal insurance mechanisms	DFID?	Medium	High
	Identify what public sector outlets exist in different countries which can be used to raise awareness of benefits of insurance	DFID?	Low	Low
	Social levy charged on premiums paid by people in higher income brackets	Individual country governments	Medium	High
	Social funds are required to protect the most vulnerable, possibly delivered through an Adaptation fund	Individual country governments	High	High
	Voluntary offsets should be extended into adaptation	Voluntary offset schemes amended	Medium	Low
R I S K	Build climate risk assessment into Evt & Social Impact Assessments, economic risk assessments, specifications & contracts as precondition of insurance	Insurance companies, IFC, World Bank etc	High	Medium
	Brainstorm to establish how there could be more effective global risk pooling	Public and private sector collaboration	High	High
O T H E R	Establish where regulation is currently a constraint to index insurance	Private sector, supported by DFID	Medium	Low
	Change the tax treatment of catastrophe insurance to enable build-up of reserves.	Requires legislative change	Medium	Medium

KEY

Action by

Public sector

Public-private

Private sector

Priority

High

Medium

Low

Allocation of recommendations on risk assessment & management

	What	Who	Priority	Complexity
R I S K A S S E S S M E N T	Educate people in the financial sector on how risk can be incorporated into analysis	Financial institutions	High	Medium
	Brokers to work with NGOs and environmental organisations to understand climate risk	Brokers	High	Medium
	Disseminate the UNEPFI tool-kit through appropriate channels once it is completed	UNEPFI	Medium	Low
	Link climate change to business issues – storm damage, water availability, raw material supply etc – and not just to environment / development	NGOs; Public sector; private sector	High	Low
	Build success stories of improved financial performance through climate change risk assessment and management	Financial institutions, DFIs, other investors	Medium	Low
	DFID / donor agencies can encourage sign-up to Principles for Responsible Investment by financial institutions in developing countries	DFID, Developing country financial institutions	Low	Low
R E P O R T I N G	Require climate change criteria to be incorporated in Stock Exchange listing	Stock Exchange, FSA, rating agencies	Medium	High
	Introduce a legal requirement for disclosure of climate risks in all investments, to replace the voluntary schemes in place which are not working to change behaviour sufficiently quickly	Treasury, in consultation with Carbon Disclosure Project and financial sector	High	Medium
L E A D E R S H I P	The UK Government should lead by example – eg by taking a long-term view of developments such as the Thames Gateway	UK Government	High	High
	Governments needs to screen their own disaster risk reduction measures for climate risk	Governments	High	Low
	Risk assessment techniques used by the public sector need to be transparent	UK Government	High	Low
	Public sector, donors and agencies like IFC and CDC have the long term investment horizon and development mandate to take the lead and develop appropriate risk models to share with the wider financial community	Public sector, development finance institutions (IFC, CDC)	High	Medium
O T H E R	Financing and supply chain contracts can be used immediately to drive climate-proofing through the insertion of a simple clause in contracts	Public sector and private sector	High	Medium
	Ensure that there are genuinely effective channels of communication between the experts servicing the three different goals of economic development, climate risk management and disaster risk reduction.	DFID	High	Medium
	Support capacity-building in developing countries around development of appropriate design / performance standards and regulation (and investigate possibility of peer review)	DFID	Medium	Medium
	Explore how country risk guarantee schemes and securitisation techniques might be deployed to reduce country risk more generally	DFID	Medium	Medium

1 Introduction

On 2nd February 2007, DFID and Forum for the Future hosted a workshop on the role for private sector financing in supporting adaptation to and mitigation of the effects of climate change on developing countries.

The workshop was to give relevant public sector experts an opportunity to identify possible ways to stimulate private sector financing to combat climate change as it affects developing countries. It aimed to build on the findings of the Stern review, which highlighted the significant human and economic impact of climate change on developing countries. The workshop took place on the same day that the Inter-Governmental Panel on Climate Change (IPCC) reported evidence that climate change is man-made, and outlined the dramatic impacts that will be felt over the coming decades. The workshop focused on adaptation as there is at present less work being done in this area and the private sector can play a very important part.

The workshop explored relevant private sector financing and innovation, and the opportunities and barriers faced by the private sector in addressing adaptation requirements in developing countries. Participants outlined market developments and innovations, and identified measures that the public sector might take to help address barriers and market failures and to improve incentives to act.

This paper summarises the findings of the workshop and highlights the next steps required to take this work forward.

2 Background

2.1 The Challenge

Scientists now overwhelmingly agree that human activity is responsible for changing the climate through generating carbon dioxide emissions. The Stern review report has highlighted the scale of the impacts resulting from this climate change, in environmental, social and economic terms.

The negative impacts of climate change will be disproportionately felt in the developing world. This is because vulnerability to climate change is a factor of exposure, sensitivity and adaptive capacity.

Exposure - Developing countries are the most exposed to climate change because they are already warmer, on average, than developed regions, suffer from high rainfall variability, and, endure regular climate extremes given the location of many developing countries in tropical areas.

Vulnerability – Developing countries are heavily dependent on agriculture, the most climate-sensitive of all economic sectors, and suffer from inadequate health provision, low-quality public services, and build up of large slum areas. They have poor water-related infrastructure and management and often have inadequate early warning systems for extreme weather conditions.

Adaptive capacity – The low incomes and vulnerabilities of people in developing countries make adaptation to climate change particularly difficult.

2.2 Responses

Strong and early action is required to reduce greenhouse gas emissions, if the world is to avoid dangerous climate change and the risk of triggering abrupt and large-scale changes. But adaptation measures are now also essential since some degree of impact is now unavoidable. And the scale and cost of adaptation will rise dramatically if insufficient mitigation action is taken.

The Stern Review emphasises that much adaptation will simply be an extension of good development practice. Promoting overall development will help reduce vulnerabilities and raise the adaptive capacity of poor people. In addition to good development practice, incremental measures and actions will need to be taken to address specific risks (such as building higher sea-defences) and reduce vulnerability to the impacts of climate change. But a major role of governments in tackling climate change will be to ensure that the private sector has the tools and incentives necessary to adapt autonomously.

The private sector has started to respond – for example, developing some index-based insurance products and beginning in some cases to assess the climate risk of investments. Climate risks can be assessed by functions across a company – for example, the impact on natural resources and raw materials, supply chains and logistics, asset design, performance and values, operations and processes, products and services, workforce, local communities, markets and customer requirements and financial performance. And there are signs that private sector financial institutions are beginning to see the relevance to their investments in one or more of these areas.

3 Organisation of the Workshop

64 people from the public sector, private sector, specialist organisations and research institutions participated in the workshop. A list of participants is at the Appendix.

The workshop was divided into two parts. In the morning, participants discussed the role of insurance as an adaptation tool. In the afternoon, the focus was on tools for risk assessment and management in investment.

A series of questions were posed and addressed during the course of the day. This workshop report outlines the responses of delegates to each of these questions.

4 Themes running through the workshop

A number of key themes ran through the day's discussions.

4.1 “Critical mismatch” of long term and short term perspectives

Developing countries need to attract investments, particularly in key sectors like infrastructure, which take account of the long-term impacts of climate change. Commercial financial institutions, driven by prudence, tend to want to achieve high returns quickly from investment in high-risk developing countries, and tend to finance for relatively short periods. They may provide additional funding (whether through insurance or lending) in a second phase. This means that long-term risks can effectively be covered through revisiting the cost of finance at a future date. While in some cases the private sector takes a longer-term perspective, the short term investment criteria that are normally adopted need to be reconciled in some way with the longer term perspective on the public good. By the time the risks become clear and imminent enough for private sector consideration, the costs of adaptation are likely to be substantially higher, for example in terms of retro-fitting protective measures.

4.2 “I’ll do what I can, but it’s not my problem”

Another interesting theme running through the discussions was the question of where responsibility lies for addressing climate change (and, more particularly in the context of this workshop, in adapting to climate change). Several of the private sector participants talked about “doing what we can to help out” and “supporting as far as possible within our profit-making mandate”. Some public sector participants took the view that business should do more through a commitment to “corporate social responsibility”. Others felt that, in terms of pure self-interest, business will need to evolve new business models which will deliver the best outcomes for the health of the global economy, to protect its long-term profitability. These different approaches depend to some extent on people's perceptions of the knock-on impacts of climate change.

4.3 Past performance is no guide to future performance

The sheer size of the problem necessitates involvement by the private sector in some form. The private sector will need to act for its own self-interest to prepare for a new range of financing requirements and a new scale of disasters. This will necessitate different forms of insurance as well as different ways of assessing and managing risk in investments. The models that insurers and banks have used in the past will not be appropriate in the future. This represents an opportunity for financial institutions to deliver some of the solutions required. Since the impacts of developing countries not adapting are likely to be felt through the “knock-on” effects described by Stern – such as poverty traps, migration, conflict and financial market instability – it is in the self-interest of financial institutions to get engaged. Avoiding exposure to developing countries is simply not an option given the current global reach of most companies' supply chains.

4.4 Communication and coordination of efforts

The participants agreed that climate change needed now to be integral to public sector and private sector policy-making at all levels and in all areas. A climate change filter should therefore be applied to all decisions to test out their robustness in the face of climate change. The importance of integrating policies for economic development, adaptation to climate change and disaster risk reduction – to secure the “triple dividend” was also seen as key. The public sector also has an important role to play in generating data and developing models, and making those available to the private sector, and in leading by example by screening investments against climate change.

4.5 Protecting the most vulnerable

The public sector can create incentives for private sector intervention and market-based solutions to the delivery of insurance or credit to reduce vulnerability. But there will be many of the very poorest who will simply not be able to meet the requirements of the market. Central to a successful combination of public and private sector interventions may be a structure which supports the most vulnerable while not distorting the market incentives at higher income level and not preventing adaptation by the poorest where possible.

5 Insurance and other financial services

5.1 Critical forms of insurance

“What are the critical forms of insurance which will deliver protection against the impacts of climate change, both in terms of building resilience and of responses to severe climatic events? What is the role for index-based insurance, drought insurance etc?”

5.1.1 The **agricultural sector** remains the most critical in terms of providing a source of livelihood for the poorest communities: three quarters of the world’s poorest people (those living on less than 1 dollar a day) live in rural areas. The focus of attention in terms of insurance products has been on this sector. It also presents the greatest opportunity to develop pro-poor insurance because the inputs and outputs are more clearly identifiable than, for example, in the case of informal employment by poor people in urban areas. The global agricultural insurance totals \$7 billion, of which 2% is in Africa, 4% in Asia, and 3% in Latin America. North America has 58% of the market, while Western Europe has 28%.

5.1.2 Insurance provision in developing countries can be at the micro or macro level -

- At the level of the local financial institution - for example, the agricultural scheme run by The National Smallholder Farmers' Association of Malawi, in conjunction with the Insurance Association of Malawi and with technical assistance from the World Bank and Opportunity International Network
- At the macro level – for example, weather-indexed contingent credit lines for governments or international organisations, and insurance for public sector infrastructure, such as World Bank’s Caribbean Climate Risk insurance Facility.

These different levels of insurance have advantages and disadvantages.

5.1.3 At the individual level, insurance needs to also be intermediated through **institutions with rural outreach**. Of the poorest countries, private sector scale-up has only happened in India, not elsewhere. Constraints for traditional products delivered at the individual level include poor rural infrastructure and capacity; operational difficulties of small farmer agriculture; lack of availability of farm level data; moral hazard; adverse selection; and high monitoring and administration costs. In order to be able to deliver these insurance products, a local financial institution needs to be able to have a large enough and diverse enough portfolio to spread its risk.

5.1.4 At the macro level, a system can include the extension of a **safety net** for the most vulnerable. For example, the Axa deal with the World Food Programme. On the downside, these seem to be very costly at present – for example, the Mexican catastrophe bond had high transaction costs. Self-insurance is often the most appropriate mechanism for public sector infrastructure.

5.1.5 From the private sector perspective, intervention is usually easier and more attractive if **demand is aggregated**. So the options to provide wholesale services (for example, developing country governments or a group of microfinance institutions (MFIs)) are definitely more appealing than individual insurance policies. The advantage of this from the public policy point of view is also that aggregation through organisations or institutions enables products to reach a population that is not necessarily very aware of the risks and of the role of insurance in reducing them.

5.1.6 Whatever the level, the insurance product must be **linked with practical risk reduction activities** if it is to be effective in promoting adaptation. So, for example, insurance needs to be conditional on better buildings, better flood defences and so on, which will require additional resources but will promote the critical changes in behaviour required. .

5.1.7 Commercial financial institutions are best-placed to provide value in the areas of **risk modelling and alternative risk transfer** in the form of instruments such as weather derivatives and catastrophe bonds if they have the necessary data.

Some participants saw the need to transfer low probability, high impact indexed risks from developing countries to international markets. If climate change impacts are “reasonably foreseeable”, as now argued by some observers including some law firms¹, then private sector providers will be legally bound to assess the risks and liable if they do not. Others considered that the most devastating climate shocks were likely to be excluded by insurance policies as “Acts of God”² and could only be covered by Governments.

5.2 Factors determining insurers’ ability to offer these products

“What are the critical factors which will determine insurers’ ability to offer these products?”

5.2.1 Data

The importance of good data came up regularly throughout the workshop. Currently, the data are not available to enable insurers to assess the risks properly. The increasing frequency of climate-related events requires new models to interpret the data that is available and extrapolate forward. This lack of reliable data affects a number of different elements of the insurance system, including a critical part of indexed insurance products, the calculation of an appropriate level of basis risk. This prevents the development of innovative products and/or increases the cost.

¹ See, for example, presentation by Richenda Connell at the workshop, leading on from a presentation by John Firth of Acclimatise to London Climate Change Partnership - Financial Sector Group

² “Acts of God” refer to events which cannot be predicted and which are unrelated to human activity. Climate change shocks are being described less in these terms nowadays, given the known links between climate change and human activity. Some commentators have argued that the only remaining “Acts of God” are earthquakes and volcanoes.

5.2.2 Expertise

Another constraint to insurers' ability to offer products which assist in adaptation to climate change was deemed to be the limited pool of expertise within global reinsurers, insurers and consultants to identify and structure solutions. Index insurance in particular, it was argued, requires significant technical assistance in the identification, design and pilot phases. This can make products expensive with high front-end costs in particular. If products are not replicable or if there is a very narrow market then there may be the need for innovative financing models for the development of products.

5.2.3 Commercial opportunities

It is an obvious point that insurers will not be willing to offer products if they cannot find people or institutions capable of paying the premiums. It is important to recognise that there are some risks that simply cannot be insured commercially and that there needs to be public sector provision in the form of a social fund or international development assistance. Insurers also need to be able to spread the risks adequately: this is currently constrained. The current range of microfinance institutions has quite a narrow client base, which is not attractive for an insurer: a multiple distribution network which pools risks is much more commercially fundable, as outlined in section 5.1.5 above.

5.2.4 Public sector provision

Another important factor is the role that public sector provision of social welfare and/ or disaster relief plays in reducing the incentive for people to take early action to reduce their exposure to climate change risks. This can create distortions in the market: it is related to, and in some ways at odds with, the previous point on commercial opportunities. The cut-off between public and private provision, or where there is a public-private partnership the terms on which it is based, need to be clearly defined. In addition, there are clearly some very difficult calculations around the cost-effectiveness of aid that supports farmers in livelihoods which cannot be sustainable in the long term in the face of climate change in specific locations, for example as a result of desertification.

5.2.5 Public sector support

Public sector provision of goods or services can increase the viability of insurance, for example by improving the infrastructure or enhancing farmer capacity to source better inputs and through the provision of public goods such as defensive mechanisms.

5.2.6 Successful pilots

In order to encourage private sector participants to explore the options to provide cover, pilot projects with public sector are required. But more work needs to be done to establish the costs and benefits of subsidising these pilot schemes. For example, the Axa World Food Programme deal was very expensive.

5.2.7 Institutional and regulatory frameworks

The lack of institutional and regulatory frameworks is a constraint in some jurisdictions. In some countries, the barriers to entry for foreign players are an important factor.

5.2.8 Availability of reinsurance/secondary markets

The availability of reinsurance will be affected by whether they are able to undertake due diligence on the insurer and the programme in place. Reinsurance markets tend to be more willing to support index based insurance than traditional products. The contractual period of one year (often built into deals) allows reinsurers flexibility but does not enable much forward planning.

5.2.9 Current taxation system

The problem of “catastrophe variability” is that the “average” cost of a disaster may be less than 1% of insured value but a major loss may occur in a single year. The reinsurers therefore tend to have to load premiums to allow for the chance that a disaster might happen. If there are no early disasters, then the reserves built up to protect against the catastrophe are taxed in some countries, including the UK, which will result in an unwillingness to take on risks or higher premiums.

5.3 Factors affecting take-up of insurance products

“What are the critical factors which will determine the ability of developing country clients to make use of these insurance products?”

5.3.1 Awareness of changing risk

Poor people are good risk managers and would readily take up a product that makes sense in their circumstances. However, the risks that they are currently facing cannot be assessed by reference to past experience, so the insurance that they are being offered to manage those risks may appear very costly. It is possible that in these circumstances, people’s perception of risk is flawed because the probability of events happening is unclear. The key here is to provide greater information to increase awareness of risks and offer risk management tools.

5.3.2 Appropriateness / affordability of products

There are certain insurance products which can be described more as savings than insurance – for example, burial insurance. The poor can clearly see that this type of product simply helps to spread risk across time and they can understand how the costs relate to the final pay-out. Products that absorb disposable income with no obvious time or occasion for pay-back will not be attractive.

5.3.3 Societal / cultural factors

Societal / cultural factors will affect the take-up of insurance products – for example, some societies will rely more on self-insurance within family or village groups. The poor tend to have little choice about where they locate and if they are in a high risk area they may be excluded from the insurance market, if insurers refuse to accept the risks and offer protection in that area, compounding their vulnerability. Many people are outside the formal sector, have a cash existence and do not want to become a part of the formal

economy through taking up insurance products. Access to savings, credit and remittances will vary substantially between different countries and socio-economic groups, and this will also have a major bearing on a community's capacity to adjust to climate shocks.

5.3.4 Distribution

How insurance products are distributed has obvious implications for their take-up. Microfinance institutions are a key partner here and their role – perhaps in cross-selling insurance products with credit – could be enhanced. Credit unions might be the most appropriate distribution channel in East Africa although there are questions around transparency and protection for the consumer.

5.4 Extending the benefits of insurance to the most vulnerable

“How might the benefits of insurance be extended to the most vulnerable?”

Participants discussed how commercial insurance might be extended to the most vulnerable. Points discussed included –

- the complications inherent in supporting people in livelihoods which are unsustainable in the long run,
- the importance of avoiding distortions to the commercial market through subsidies or post-event intervention in the “sub-commercial” sector
- the moral responsibility of developed countries to fund adaptation for the poorest

It was recognised that there would inevitably be uninsurable locations and groups of people who would need support from a social fund of some kind.

5.5 Information requirements

“What additional information needs to be collated for the risks to be better understood and therefore insured appropriately?”

5.5.1 Data that is currently generated (for example, by public sector programmes) needs to be made more widely available to parties (including those in the private sector) who could use it to develop their own risk models or products.

5.5.2 There needs to be better data on hazards, vulnerability and ability to pay as all of these factors are important in making the right decisions on how to structure appropriate insurance interventions.

5.5.3 Specific data on climate risks for certain geographical region is important, as is more detailed local data on rainfall, temperatures, storm damage and so on. Several participants questioned the extent to which reliable data can be generated in a cost-effective way, quoting for example the lack of reliable data for elevations above sea level, even in the UK context.

5.5.4 Data on vulnerability, which is a combination of exposure to risk and ability to adapt, will add an important dimension for both public sector and private sector

interventions. The data on climate risks needs to be overlaid with data on the most vulnerable populations and their options for adaptation. Work carried out by the Vulnerability and Adaptation Resource Group (VARG) has emphasised this point.

5.5.5 Data on the ability of the poorest individuals to pay for insurance is also an important part of the information required, although extremely difficult to obtain.

5.6 Insurance compared with direct support by government and donors

“What is the comparative advantage of the insurance sector versus direct support by government/donors and at what point does insurance become less cost-effective given the premiums charged?”

5.6.1 The principal advantage that the private sector can deliver was deemed to be scale. Meeting the challenge of climate change will not be possible with public sector resources, especially those at the disposal of developing country governments.

5.6.2 The private sector can also provide delivery mechanisms through local institutions, and can provide risk modelling and techniques for assessing the cost-effectiveness of certain courses of action, using price signals to ensure value for money.

5.6.3 However, financial institutions in the private sector have generally not yet got techniques in place to factor climate risks effectively into decision-making on insurance in developing countries. In part, this results from a lack of data. In part it may be because the size of the markets in developing countries are not seen as large enough (and are seen as too risky) to merit the resources required to develop these techniques. Donors may be able to provide support here, either through the development of new techniques or through risk-sharing with the private sector.

5.6.4 Participants discussed the relative cost-effectiveness of insurance versus post-event disaster relief but felt there was insufficient information to make a proper assessment. They also questioned whether, given the unpredictability of climate change impacts, it was feasible to expect that this calculation could be made. Two other points are relevant in this context. Firstly, it was generally agreed that insurance could play a role in promoting behavioural change and this could have a significant positive impact. Secondly, the speed of disbursement following a climate shock (which might be quicker through private sector channels) can have a significant impact on a community's ability to cope.

5.7 Other financial services to reduce vulnerability

5.7.1 Clearly there is a very important role for other financial services – access to savings, credit, remittances – to reduce vulnerability through enabling poor people to recover more quickly after shocks. The workshop touched on this issue but did not explore the area in great detail. One of the key points made was to emphasise the importance of ensuring that the triumvirate of disaster relief, climate change adaptation and economic growth are addressed as a whole rather than as distinct areas of work.

5.7.2 The structure of the financial systems in-country – the financial architecture – is critical, and it will be particularly important to ensure that they themselves are resilient to climate change shocks and can recover quickly after major disasters.

5.8 Key Recommendations

The discussion identified the following key action points for consideration -

5.8.1 On climate data

- Public sector bodies should provide free access to climate change data and vulnerability maps. Some participants identified a restriction on this publicly-owned data being used for profit-making purposes. If necessary, codes of conduct for data sharing should be developed.
- There should be more research on the variability of forecasts and associated risks
- There should be a system of accreditation for data providers, which gives people confidence in their capacity and procedures
- More data needs to be gathered (particularly in the most vulnerable places) in order to enable better assessment and reduce the risk of insurance being offered on inappropriate terms. However, it is recognised that it will be difficult to gather this detailed information at local level.
- Any information gathered should focus on both hazard and vulnerability.

5.8.2 On pilot projects

- A synthesis study should be carried out on the numerous pilot projects currently being implemented from which lessons can be learned and information disseminated.
- Better links need to be developed with grass roots organisations/civil society to improve uptake of schemes.

5.8.3 On pro-poor schemes

- It would be useful to undertake research to investigate and understand more about the disposable income levels that could be used to pay for insurance premiums.
- It would also be useful to undertake an evaluation of the cost-effectiveness of both formal and informal insurance mechanisms and other schemes such as employment guarantee funds in India.
- It would be useful to identify what public sector outlets exist in different countries to see which can be used to build awareness of benefits of insurance, and how this might be implemented.
- A “social levy” could be charged on premiums paid by people in the higher income brackets, to support the social fund made available to those unable to afford insurance premiums, in a form of cross-subsidisation.
- Voluntary offsets could be extended into adaptation projects which support pro-poor initiatives

5.8.4 On reducing climate risk

- Climate-sensitive design standards and codes of practice should be reviewed and upgraded in all areas including selection of crops, water management and disaster risk reduction planning.
- Climate risk assessment needs to be incorporated into Environmental and Social Impact Assessments, specifications and contracts, and this might be a precondition for insurance for project finance.
- Need to mainstream insurance into climate risk management measures – so, for example, insurance will only be available for agricultural schemes if they use drought-resistant crop varieties, have appropriate systems for water management, gather climate information and incorporate disaster risk reduction into their planning.
- There needs to be a much more effective system for global risk pooling. More detailed discussions are required on how this might be effected in practice and which institutions might be tasked with moving this forward. This may involve a mix of insurance and reinsurance companies and direct capital possibly through a public-private partnership.

5.8.5 On regulation

- In some countries, changes in regulation are required to enable index insurance to be sold. There should be a piece of work carried out to establish where the regulation is currently a constraint. Raising awareness on the role of insurance would also help to motivate change.
- The tax treatment of catastrophe insurance should be changed so that it is treated more like life insurance than an annual fire or motor policy, enabling the build-up of appropriate reserves

5.8.6 On the structure of the insurance market

- Further ways of aggregating insurance through organisations or institutions need to be explored, so that insurance can reach a population that isn't financially aware, and so that the market is more attractive for insurers.
- The larger microfinance institutions need to negotiate deals with private sector insurers (as Opportunity International and AIG are currently doing).
- Social funds need to be established to protect the most vulnerable who cannot afford insurance premiums. These funds might come from aid monies or from an adaptation fund. Some participants felt strongly that it was the moral responsibility of the north to help fund this.
- Long-term insurance contracts are critical in the face of the variability and unpredictability of climate risk, further reinforcing the need for multi-country sharing or pooling of risks.
- The capacity of the insurance industry including brokers needs to be built at the local level.

6 Risk assessment and management

6.1 Emerging good practice in the public and private sectors

“What is emerging good practice by private sector and public sector institutions? And is this being applied to investments and operations in developing countries?”

6.1.1 The timeframe of private investment is an issue

Some investors may consider, rightly or wrongly, that the impacts of climate change will not be felt within the timeframe over which they view their investment. Many investors are not long-term and will not build long-term risk scenarios into their processes. For some investors their timeframe is only one year. Private equity firms, with their 3-5 year time horizons are not much more likely to factor climate change into their investment decisions. The most likely candidates for effective climate risk assessment techniques are project finance and infrastructure investments which usually have an investment period of seven years or more. Adaptation can have a positive impact in these longer-term investments by expanding the lifetime of an investment, improving the overall returns.

Because of the timeframes involved, many banks currently see little advantage in being the first mover in developing comprehensive climate risk assessment and management systems.

Some banks feel that there is merit in positioning themselves as leaders in this area because they want to reflect the growing concern among consumers, even if they perceive (rightly or wrongly) little immediate advantage in terms of protection of their own investments. However, some private sector financial institutions are beginning to incorporate climate risk assessment into their decision-making processes on lending and investment in order to protect their own investments and to improve their returns.

6.1.2 There are real business risks and opportunities for banks

One of the barriers to better and wider analysis of climate change issues is that climate change has been presented as an environmental issue and not a business issue. The extent to which it will be possible to influence risk managers who provide oversight on all lending decisions will depend on the availability of information highlighting potential material risks.

Banks need to understand the climate change risks and opportunities for core lending and savings books from two broad perspectives: firstly, climate risks could impair the cash-generating ability of existing bank loans and investments; and secondly, climate risks should be considered in credit assessment and lending portfolio planning

So far, the approaches under development by banks have been

- to develop a fundamental understanding through case studies in sectors where bank has greatest exposures
- to incorporate climate risk screening into credit risk assessments
- to incorporate climate risk screening into due diligence processes; and

- to compare climate vulnerabilities / exposures of companies in the same sector but the analyses to date have been high level and qualitative. Most investors, fund managers and banks lack capacity to assess climate risks in this way.

This is already the case in some locations where climate impacts are being felt. In Australia, for example, farmers used to be assessed on acreage to obtain credit scores but now access to water rights is also being built into an assessment of creditworthiness.

With lawyers now beginning to argue that climate change should be seen as a “reasonably foreseeable” risk, banks and other businesses will need to look much more carefully at the liabilities which arise from failing to address these issues. This is being referred to as the “new fiduciary”³.

6.1.3 Lack of models and tools is a barrier

Financial institutions and other risk modellers require credible, consistent information flows to build into their analytical models. This is clearly a challenge in relation to the uncertain size and timings of climate change impacts. But there are plenty of other intangible and uncertain factors which a bank assesses in order to make decisions (the quality of management, for example, or the threat of competition) so there is no reason why financial institutions should not build climate risk assessment into their analysis.

The key is in finding a way to monetise risks: direct ones are relatively easy (for example, CO₂ pricing for power plants) but systemic risks are much more difficult to account for. Hence, banks are currently much better at screening for mitigation (reduction in energy use, for example) than for adaptation (the cost of climate-proofing versus the cost of climate damage, for example).

6.1.4 Incurring costs now may save costs later

It is important to recognise that there may be up-front costs (the World Bank estimates that it may add 5-20% to project cost to climate-proof the most vulnerable investments). Research – for example by Stern - has made it clear that costs will be incurred now or will be greater in the future but they cannot be avoided altogether. Taking account of risks at the outset is cheaper than the costs of a “retrofit” for affected assets. It is estimated that the cost of extreme weather events will reach 0.5% - 1% GDP by 2050. Hurricane Katrina was estimated to cost 1.5% - 2% of US GDP. However, there will clearly be some costs which it is not effective to cover and alternative locations, structures and adaptation measures will have to be considered on a case-by-case basis, but this is not the same as ignoring risks.

³ Most litigation to date has revolved around the liability of fossil fuel-based energy companies for damage caused by greenhouse gas emissions (see http://www.perkinscoie.com/news/pubs_detail.aspx?op=updates&publication=1310). However, this is evolving fast into the area of adaptation. See, for example, the arguments outlined in http://www.griffith.edu.au/centre/urp/urp_publications/Issues_Papers/URP_IP6_ENGLAND_Climate_LocGovt_final.pdf (the context is Australian but the issues universal) which indicates the liabilities of local governments, and will have implications for private sector contractors.

6.1.5 The private sector can learn from public sector activities

In many ways, public sector adaptation has progressed further than the private sector and developed best practice tools – for example, the UK Climate Impacts Programme has an “Adaptation Wizard” on their website. Other examples of good practice in the public sector include

- UK Highways Agency – design specifications include climate-related checks
- Water companies – becoming involved in long term catchment management programmes (The UK water industry has a regulatory mandate to consider climate change related impacts with a 25-year timescale.)

The generic risk management measures being carried out on infrastructure projects adopt the following techniques -

- Use latest information on climate change to identify areas of greatest change and to perturb existing models
- Review measures in place to manage existing climate risks
- Review and upgrade climate-sensitive design standards and codes of practice
- Climate-proof new projects at design stage (including building in headroom for climate change; flexibility)
- Address climate risks and risk management measures as part of Environmental and Social Impact Assessments.

It was noted that DFID has started to work towards the “triple dividend” approach through joint work on insurance in the context of disaster risk reduction and climate change with the Conflict and Humanitarian Affairs group, CHASE.

6.1.6 Financial institutions are beginning to assess the risks from different angles

Financial institutions face potential operational risks to their investments. The risks can also be assessed at the board level – for example in terms of brand and reputation; market share; increasing regulation; investor confidence; credit rating; value, return and growth; and litigation. The key current impact may be felt through international supply chains.

Some banks are beginning to review climate risk across principal sectors and then to overlay those sectors with geographies. Some sectors are more vulnerable than others – for example agriculture, infrastructure and coastal tourism – so the initial focus will be on those sectors, determining the key characteristics of the likely winners and losers. When geographical factors are then combined with this assessment of sector risk, a useful matrix of priorities emerges.

UNEP Financial Institutions Initiative is in the process of developing a toolkit that will promote capacity-building in financial institutions and will help to embed the issues. This toolkit is due to be completed in the spring / early summer.

The ESAT toolkit produced by IFC was specifically designed for financial institutions as an easy to use CD Rom based software tool to provide investment officers with a tool to review projects and evaluate both the opportunities and risks of environmental and

social issues involved with lending and investments. It uses non-technical information and covers a wide selection of sectors and sub-sectors.

The London Climate Change Partnership Financial Sector Group is also doing interesting work in drawing the attention of the financial services industry to the key questions which need to be addressed if the industry is to respond in a sufficiently timely and effective way⁴.

6.1.7 Other observations

It is in large-scale projects where risk assessment and management techniques are most likely to be applied, and the myriad of smaller projects, which may in total be more significant, may be ignored unless risk assessment and management toolkits and training are delivered to the smaller financial institutions on the ground. It is possible that toolkits developed for large institutions could in time be replicated at a smaller scale and lower cost for the smaller ones.

Responsible property investment offers scope for appropriate adaptation and mitigation measures to be incorporated in investment.

Risk screening is already done in some underwriting – for example the incorporation of flood zoning risk into building insurance – and the sophisticated tools used for underwriting could be adapted for, and applied to, investment.

6.2 Pension fund management of risk

“How are pension fund managers with long exposure managing risk (particularly risk in developing countries)?”

Currently, the majority of pension funds, despite the long term nature of their liabilities, do not take an active stance on management of climate risk in their portfolios. Most also do not consider themselves to have material exposure to developing countries, although this clearly is not the case if the underlying assets and supply chains of companies in their portfolios are assessed in more detail.

However, pension funds’ focus on social and environmental issues is increasing (with ventures such as the Enhanced Analytics Initiative and the Principles for Responsible Investment generating some momentum). Pension funds may therefore create some useful leverage for climate change risk assessment to be used more widely and more effectively to protect value.

6.3 The role of the Equator Principles

“Is there a role here for the Equator Principles?”

Participants were divided about the possible role for the Equator Principles as a framework for embedding climate risks assessment and management. Some felt that it would be a useful vehicle for implementation as it is already in place with defined

⁴ <http://www.london.gov.uk/climatechangepartnership/docs/business-as-usual.pdf>

procedures and reporting requirements. Others felt that, although it has an existing mandate, it is too broad-brush and compliance-focused.

The Equator Principles focus mainly on the impact of an investment on the environment, while the focus in terms of adaptation is on reducing the impact of climate change shocks on the viability of an investment. There is therefore not an obvious case that the two should be combined.

Some participants observed that the focus of the Equator Principles on project finance in developing countries reduces its relevance to climate risk adaptation as measures need to be implemented across all geographies and all deal types.

The concept of requiring climate risk assessment as a part of all Environmental and Social Impact Assessments, all project specifications and all contracts takes account of this more holistic approach required. However, it is not clear what would be the process by which this would actually happen in practice.

6.4 Long-term investments

“To what extent can financial institutions finance infrastructure projects in developing countries which mitigate the impacts of climate change? How might bonds be used to finance infrastructure projects? How can public sector and private sector investment be best combined?”

This topic was not discussed widely at the workshop. The role of bonds in enabling long-term investment in relatively low-risk assets was explored briefly. Country risk remains an obstacle and country risk guarantee schemes may have an important role here. The possibilities of using securitisation techniques more widely in this context should also be explored.

6.5 The role of Regulation and Standards

“What barriers need to be overcome for the private sector to respond effectively to regulation and building standards? How can those standards be best implemented / imposed?”

6.5.1 It is not the role of banks to regulate, but by enforcing existing local legislation and by applying their own standards to developing country clients and partners they can improve standards. One key problem lies in a lack of regulatory enforcement by local and regional authorities in developing countries. Participants felt that individual countries themselves needed to lead on this, but they could be encouraged to focus on this area, and capacity-building was important.

6.5.2 A key concern is that other countries such as China will undermine the standards if developed country banks try to apply them voluntarily. A system of peer review of standards between countries could be useful here (along the lines of the OECD model).

6.5.3 There is currently a lack of technical capacity within both the private and public sectors for interpreting standards and understanding how they should apply in different

places with different levels of vulnerability. In particular, there is a lack of understanding of how to interpret the probability of certain events, and how to translate that into appropriate specifications.

6.6 Key Recommendations

6.6.1 On data

- More and better data is required, and the barriers to accessing the data that is currently available need to be removed.
- It would be useful to undertake a comprehensive exercise of what data does currently exist in both the public and private sectors, in order to identify the key gaps and prioritise.

6.6.2 On risk assessment models

- Further work needs to be done on improving projections and models and on educating people in the financial services sector on how risk can be incorporated into analysis.
- Brokers could usefully work more with NGOs / environmental organisations to understand the environmental sensitivities around investment.
- The UNEP FI toolkit and capacity-building support could be helpful, once it is produced later in the year, and thought will need to be given to how it is disseminated.
- The ESAT toolkit developed by IFC is also of interest and thought should be given as to how it might be used.
- If financial institutions are developing tools for risk assessment to put them at a competitive advantage, then this may be a greater driver towards change than a collaborative approach. However, there should be a greater sharing of tools that are being developed, at least at some level that can be made public.
- The focus cannot be only on new assets. A system to deal with old assets, with cost-effective risk management and even relocation, also needs to be developed.

6.6.3 On reporting

- Legal requirements for discussions and disclosure of climate risks would allow this information into the public domain and would generally raise awareness about the need for immediate action.
 - The Carbon Disclosure Project is a good start but there is no requirement for a company to provide answers which truly reflect their overall impact on greenhouse gases, or their exposure to physical risk, as they can manipulate the figures in various ways, including exclusion of indirect impacts and outsourced activities.
 - The Global Framework for Climate Risk Disclosure, produced by the Institutional Investors Group on Climate Change, should encourage more reporting of the physical risks associated with investments⁵.

⁵ The Global Framework for Climate Risk Disclosure encourages reporting in 4 areas, of which three relate to emissions and regulation and one relates to the physical risks faced from climate shocks and therefore the question of adaptation.

- More and better reporting of climate change impacts and risk assessment activities will enable more effective benchmarking.
- Climate change criteria could be incorporated into Stock Exchange listing rules in some way.

6.6.4 On the role of the public sector

- The UK Government should lead by example – for example, by taking a long-term view of developments such as the Thames Gateway.
- DFID / donor agencies should partner with financial services organisations in developing countries (banks or other financial institutions) to make the case together for more climate change impact assessment.
- DFID / donor agencies can encourage greater sign-up to the Principles for Responsible Investment through their existing presence in developing countries.
- DFID should share its disaster relief reduction measures for climate risks.
- The risk assessment techniques used by donors should be transparent.
- Public sector, donors and agencies like IFC have both the long term investment horizon and development mandate to take a lead in this area to develop appropriate risk models. These can then be shared with the wider financial community.
- Funding mechanisms must be designed to ease cooperation not competition between departments.

Practical solutions, and not legal ones, were considered by many participants to be the most likely to be effective.

6.6.5 On climate-proofing contracts

- Financing and supply chain contracts can be used immediately to drive climate-proofing through the insertion of a simple clause in contracts that states that all reasonable steps have been taken to incorporate climate risk into the design and operation of the asset / activity. MoD in the UK already does this on huge contracts.

6.6.6 On communication

- We need to decouple the language of sustainable development and climate change and link it to actual business issues – storm damage, water availability, raw material supply and so on – if we are going to get the attention of decision-makers in business.
- We need to build success stories so that financial institutions are aware that they make more money if they take climate change adaptation into account.⁶
- Banks need to have a clear understanding of the separate elements impacting their climate change risk assessment – for example, changes in markets and prices resulting from carbon trading, and changes in physical assets resulting from the impacts of climate change.

⁶ Work by the UN International Strategy for Disaster Reduction has estimated that, for every \$100 spent on disasters, \$96 goes to emergency relief and reconstruction and only \$4 on prevention, so there is scope for more cost-effective intervention, potentially led by the private sector.

- Within the public sector, there need to be genuinely effective channels of communication between the experts servicing the three different goals of economic development, climate risk management and disaster risk reduction.

6.6.7 On regulation

- Providing support for capacity-building in developing countries could improve their ability to enact appropriate regulation and standards.
- A system of peer review of standards between countries (along the lines of the OECD model) could be useful.

6.6.8 On incentives

- It would be good to see climate risk assessment being incorporated into performance criteria for individual investment managers, senior managers and board members, but this is still a distant prospect given that incentives are structured around short-term financial performance targets.

6.6.9 On the role of rating agencies

- We need to encourage rating agencies to look at issues relating to climate change in developing countries (In India, CRISIL is working with Standard & Poors on this.) Rating agencies have a crucial role to play – but there has to be demand from their clients for them to build climate change criteria into their ratings in developing countries

6.6.10 On long-term investments

- The possibilities of using country risk guarantee schemes or securitisation techniques to reduce country risk should be explored.

7 Next Steps

7.1 The workshop discussions raised a wide range of interesting points and several areas for possible action. The next step will be to assess these action points in more detail in consultation with key players who might help to prioritise, and deliver the ones which will be most effective in the short, medium and long term.

7.2 We sense that there is an appetite for an ongoing expert forum or panel to review actions being taken and required on promoting the role of the private sector in driving adaptation to climate change in developing countries. We will be considering the terms of reference for a possible panel of this kind to determine how it might work and exactly what it would seek to achieve.

7.3 We would welcome feedback from any of the participants in the workshop, and from others who are engaged on this agenda. Please send feedback, comments and any relevant additional information or observations to Alice Chapple at Forum for the Future on a.chapple@forumforthefuture.org.uk

APPENDIX - WORKSHOP PARTICIPANTS

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