



Coding and tracking
adaptation finance:
lessons and opportunities for
monitoring adaptation finance across
international and national scales

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Paula Silva Villaneuva, and Sarah Standley

Promoting Effective Climate Finance: ODI is building an evidence base on climate finance delivery and management through a number of country case-studies. How climate finance is accessed, managed and then spent in ways that effectively reduce vulnerability, promote development and gender equity, and reduce greenhouse gases represents a major challenge for national governments as well as the international community. The tracking of this finance, at both the international and national level, faces the problem that climate-related actions are difficult to identify with precision, and this lack of clarity leads to uncertainty over estimates of spending. This series of papers explores the concept of 'climate finance' and proposes pragmatic ways forward that will strengthen the policy debate.

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Acronyms

ACCRA	Africa Climate Change Resilience Alliance
CCAPS	Climate Change and African Political Stability
CFU	Climate Funds Update
CIF	Climate Investment Fund
CPEIR	Climate Public Expenditure and Institutional Review
CRS	Creditor Reporting System
DAC	Development Assistance Committee
DFID	Department for International Development
GDP	Gross Domestic Product
GEF	Global Environment Facility
IPCC	Intergovernmental Panel on Climate Change
NAC	National Adaptive Capacity framework
NAPA	National Adaptation Programme of Action
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
PEA	Political Economy Analysis
PPCR	Pilot Program for Climate Resilience
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WRI	World Resources Institute

Executive summary

Adaptation finance is a key ingredient of international efforts to support vulnerable countries in responding to climate change. Building a comprehensive picture of the scale and scope of such investments is needed in understanding where financial flows are being targeted. Doing so requires robust systems for monitoring the flow of adaptation finance across scales – from international and national levels to project and household contexts. Despite this need, existing methodologies for coding and tracking adaptation finance are, by and large, inadequate. They are seen to promote the conceptual separation of adaptation and development, and often fail to capture the wide range of activities that promote adaptation on the ground.

Lack of agreement on comprehensive systems for coding and tracking adaptation investments is likely to be an impediment to the transfer and delivery of resources for adaptation. There is clearly a need to trial new, innovative and more practical systems. Recent efforts to integrate percentile and multivariate coding procedures are a step in the right direction and should be encouraged and further refined. Yet these new procedures are themselves far from perfect – held back by a lack of clarity around the concept of adaptation, and difficulties in distinguishing between different types of adaptation activities.

The fact that most systems solely track activities that make explicit reference to climate change adaptation within project objectives presents a stumbling block. This fails to recognise the significant potential of ‘traditional’ development activities in contributing to adaptive capacity – seldom do such activities give specific mention to adaptation within project documentation. If the purpose of coding and tracking adaptation is to monitor financial flows that support the process of climate change adaptation and build adaptive capacity (World Bank 2012), then omitting a large spectrum of activities that play a central role in supporting adaptation (though not always the primary aim, nor specific intention) is misguided.

Most importantly, the design of tracking procedures is influenced and directed by political and economic processes, not just technical processes. An appreciation of key political economy drivers is crucial to understanding and overcoming obstacles to coding and tracking adaptation, and requires further attention.

Recognising that processes of coding and tracking of adaptation are executed for a number of different purposes (depending on the users and their respective needs) this paper argues for more innovative systems to be trialled and implemented at all levels. It calls for the diversification of categories used to track adaptation activities, to include factors such as sectoral distribution, geographic location, and type of adaptation. The paper proposes that efforts to track and code adaptation spending, and efforts to monitor effectiveness of adaptation activities, should be more closely aligned and integrated.

It is hoped that these measures will, in part, help prevent the skewed nature of adaptation investments – encouraging a balance between investments in highly visible infrastructural and technical outcomes with support for less tangible capacity-strengthening and governance-related initiatives.

This paper is primarily aimed at a technical audience – one broadly familiar with the intricacies of coding and tracking systems. However, key messages and potential next steps are relevant to all stakeholders in the climate finance debate. Many of the issues described – such as the political economy of coding and tracking – are typically neglected within technical discussions and merit greater attention from all associated stakeholders.

1. Introduction

The need to provide financial and technical resources in support of vulnerable countries' efforts to adapt to climate change is clear. Delivering on international commitments to do so will require a variety of institutional arrangements and financial channels, both public and private. Both donors and recipient countries are increasingly interested in tracking flows of spending on adaptation, as well as monitoring the effectiveness of its use.

Existing systems for coding and tracking adaptation finance are largely unfit for the task, failing to capture the breadth and complexity of adaptation-related activities. Reasons for this are numerous, and stem from (among others) a narrow reliance on binary forms of classification and requirements for 'climate change' to be specifically acknowledged within project documentation. A push for the trialling of more innovative and logical systems is needed. However, fresh efforts aimed at monitoring the flow of adaptation finance face a number of barriers.

Obstacles include a lack of common terminology for adaptation and disagreements over what constitutes adaptation spend. This lack of consensus is partly due to a diverse range of adaptation activities and complicated methodologies for assessing the extent of adaptation components for individual projects. Most important is recognition that decisions over what can and cannot be considered under the label of 'adaptation' are not only technical in nature, but influenced by various political drivers, vested interests and incentives.

A number of critical questions remain: What is the purpose of tracking adaptation finance, and what do different actors gain from it? What are the main obstacles to tracking adaptation activities effectively? What options exist for improving coding and tracking systems at international and national levels?

This paper seeks to explore and address some of these questions, working toward better conceptual and practical grounding of adaptation coding and tracking procedures. Divided into four sections, it first provides a brief synthesis of the current state of adaptation finance and the key instruments involved in its disbursement. Second, it outlines some of the main contentions with regard to the classification and delivery of adaptation at the national and sub-national level. Third, it offers a number of potential options available to resolve these barriers, drawing on a number of innovative efforts to track climate change finance at different levels. Finally, practical steps are considered for moving the policy debate forward.

This paper is primarily aimed at a technical audience – one broadly familiar with the intricacies of coding and tracking systems. However, key messages and routes forward (particularly those described in Sections 3, 6 and 7) are relevant to all stakeholders in the climate finance debate.

2. The international architecture of Adaptation finance

Finance is a key component of the international community's response to climate change. The UNFCCC projects the need for additional investment and financial flows of between \$60 and \$182 billion per year to facilitate adaptation globally by 2030 (Nakhouda et al., 2011). Given the volume of 'approved'¹ investments (\$4.4 billion as of 2011), the architecture of adaptation finance is, somewhat inevitably, convoluted and complex. It is delivered through a variety of instruments such as grants, concessional loans, equity investments and guarantees (Buchner et al., 2011).

With a growing number of dedicated climate funds, a new international institutional architecture on finance for climate change adaptation is emerging that includes, among others, the UNFCCC Adaptation Fund, the Pilot Program for Climate Resilience and the Global Environment Facility². However, multilateral funds such as these represent a relatively small part of the overall picture of international public climate finance. Bilateral mechanisms are, by and large, the principle channel for adaptation disbursement (see Table 1). To date, bilateral funding has been popular³ among donor agencies as it allows greater opportunity to align priorities and interests with national priorities. It also gives greater flexibility to projects and ideas not as easily negotiated through the multilateral channels.

Table 1: Estimated volume of approved adaptation finance (as of 2011)

Sources/ Intermediaries	Total (USD m)	% Contribution to total adaptation finance
Bilateral	3,641	83%
Multilateral	475	10.8%
Dedicated Climate Funds	65	1.5%
Philanthropy	210	4.8%
Total	4,390	100%

Source: Buchner et al. (2011).

1. 'Approved' represents funds that have been officially approved and earmarked to a specific project or programme.
2. Significant questions also remain on the nature of an adaptation window within the evolving Green Climate Fund, although it has the potential to streamline some of the existing architecture (Harmeling et al., 2011).
3. There are however signs that funding to multilaterals will soon increase sharply as a proportion of adaptation spend due to international pressure.

The diversity of adaptation funding sources, and their relatively new and evolving nature, presents a number of significant challenges to coding and tracking financial flows (discussed in the following sections).

3. What are the challenges in coding and tracking adaptation finance?

Despite growing pressure on the international community to agree on common standards for tracking financial flows, there continues to be little clarity on what can be (and has been) committed under the label of “adaptation finance”. Mapping flows of adaptation finance is rife with terminological and methodological challenges. Lack of progress in the debate is compounded by the limited transparency and consistency in reporting of bilateral finance for climate change adaptation. Developing countries currently self-classify and self-report climate-relevant financial flows in the absence of a common reporting format or independent verification. While there have been recent moves to standardise processes through the Rio Markers (discussed in detail below), we synthesise three key barriers to tracking the flow of adaptation finance within budgets, both at international and national scales.

i) Seeking clarity across the adaptation-development nexus: what are we adapting to?

One of the largest impasses relates to ambiguity in the concept of adaptation itself. Although no one definition is universally applied, adaptation can be broadly described as the ‘process of adjustments to actual or expected climate and its effects, in order to moderate harm or exploit potential benefits’ (IPCC 2012). Importantly, adaptation takes place in response to multiple stimuli - as much to changes in wider development pressures as to climate. This means that defining what constitutes an adaptation action or activity (and separating whether it is done in response to climate change or interactions with other stimuli) is problematic, both in conceptual terms and in practice (see Berrang-Ford et al., 2011; Levine et al., 2011).

The ability of a system, whether a household, an organisation, or a country, to adapt (known as its ‘adaptive capacity’), is made up of a wide range of different characteristics (see Jones et al., 2010). Actions that impact on adaptive capacity can come from a diverse set of different interventions, often without having a ‘climate change’ label attached (Ludi et al., 2012; McGray et al., 2007). Many conventional development interventions (such as sustainable livelihoods, social protection, or disaster risk reduction programmes) can

have a significant influence on the ability of communities to adapt to climate change, often without giving explicit reference to it (Levine et al., 2011).

For example, programmes aimed at supporting women’s empowerment and the representation of marginalised groups in local decision-making processes can have indirect impacts on beneficiaries’ (and non-beneficiaries’) ability to adapt to more frequent episodes of prolonged rainfall (see Demetriades and Esplen 2008). Similarly, the provision of alternative livelihood opportunities to unemployed young people can have considerable effects on the ability to deal with shocks and stresses, and diminishing returns from agricultural practices (see Jones et al., 2011). Despite their positive impact on adaptive capacity, these projects would not typically be coded as ‘adaptation projects’ or necessarily even be identified as having an adaptation component - the Rio Markers require that an ‘adaptation objective is explicitly indicated in the activity documentation’ (OECD 2011).

No common metrics for measuring adaptation (nor adaptive capacity) exist, largely due to the intangible nature of many of its components. Where efforts have been carried out, most have focused on visible and easily quantifiable outcomes (or where the need to adapt to a specific impact of climate change is identified). This often means that ‘hard’ adaptation projects, such as infrastructural and technical options (like sea-defence schemes, flood early-warning systems and large-scale irrigative infrastructure) are more readily acknowledged ahead of less tangible programmes, such as promoting enabling environments for innovation or ensuring that local governance systems are flexible in dealing with increasing uncertainty (Fankhauser and Burton 2011).

Ambiguity in classification criteria means that bodies responsible for reporting on adaptation spending find the tracking process cumbersome and confusing (Bhattarai et al., 2011). It allows for discrepancies, double counting and political influence on tracking processes (Michaelowa and Michaelowa 2010). Even internationally agreed standards such as the Rio Markers (on which many national bodies base their coding systems for tracking adaptation) leave much room for interpretation. The markers define an adaptation project as one that ‘intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience’ (OECD 2011, p.4 see Table 2). This all-encompassing definition means that tracking the myriad of factors that contribute to adaptation at the country, community or household level is a significant challenge.

Table 2: OECD DAC CRS Criteria for climate change adaptation

Definition	An activity should be classified as adaptation related (score Principal or Significant) if: It intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience. This encompasses a range of activities from information and knowledge generation, to capacity development, planning and the implementation of climate change adaptation actions.
Criteria for eligibility	An activity is eligible for the climate change adaptation marker if: a) the climate change adaptation objective is explicitly indicated in the activity documentation; and b) the activity contains specific measures targeting the definition above.
Adaptation activities included	The list is not exhaustive. The activities may be scored against the objective only if the above criteria for eligibility are fulfilled. <ul style="list-style-type: none">• Supporting the integration of climate change adaptation into national and international policy, plans and programmes.• Improving regulations and legislation to provide incentives to adapt.• Education, training and public awareness-raising related to the causes and impacts of climate change and the role of adaptation.• Adaptation-related climate research including meteorological and hydrological observation and forecasting, impact and vulnerability assessments, early warning systems, etc.
Examples	<ul style="list-style-type: none">• Promoting water conservation in areas where enhanced water stress due to climate change is anticipated.• Promoting heat- and drought-resistant crops and water saving irrigation methods to withstand climate change.• Developing emergency prevention and preparedness measures including insurance schemes to cope with potential climatic disasters.• Implementing measures to respond to glacial lake outburst flood risk, such as the creation or improvement of early-warning systems and widening or deepening of glacial lake outlet channels.

Source: Adapted and expanded from Handbook on OECD-DAC climate markers(OECD 2011), with emphasis added by author

ii) What kind of adaptation are we tracking?

One obstacle to efforts to track and code adaptation is lack of clarity in distinguishing between different types of adaptation. Planned adaptation can be broadly broken down into three categories (Brooks et al., 2011):

- a) Actions targeted at improving the ability to respond to existing climate variability and risks (also known as the adaptation deficit);
- b) Actions targeted at adapting to incremental changes in existing climate related risks;
- c) Actions targeted at adaptation to qualitative changes in climatic and environmental transitions, ie. transforming or replacing existing systems (e.g. livelihood systems, economic, systems, etc) in order to ensure that development is viable and sustainable under future climatic and environmental conditions that might be quite different to those pertaining today, and in the face of new risks that might be associated with the emergence of new climate hazards.

All three are commonly used under the label of adaptation, although current adaptation policy, and the interventions supported under it, are seen to largely address the adaptation

deficit (category a) and incremental adaptation (category b). Formal assessment indicators for evaluating adaptation (such as the Adaptation Fund and Pilot Project for Climate Resilience) have similarly tended to highlight and emphasise activities in addressing the adaptation deficit and 'climate proofing' development (Brooks et al., 2011). Most of these activities are concerned with short-term actions for coping with variability through small incremental adjustments⁴ (Berman et al., 2012).

Support for the third type is typically associated with more transformative, anticipatory and longer-term actions (category c); financial commitments and interventions aimed at addressing it are far less common. A shortfall in such activities is particularly pronounced in low and middle income countries, often considered to have less financial and technical capacity to instigate proactive and coordinated adaptation activities at large scale (Berrang-Ford et al., 2011). Despite this, efforts to enable forward looking decision-making within governance processes is possible without significant investment in informational and infrastructural resources (Levine et al., 2011). Importantly, the characteristics and indicators needed to assess factors that facilitate transformative outcomes are subject to far less attention within the adaptation discourse.

4. Although a push for transformative adaptation is explicitly mentioned in PPCR documentation, its delivery (and in the form described by Brooks et al., 2011) has yet to be seen.

Coding and tracking of adaptation projects can do much to distinguish between the various types of planned adaptation, making sure that efforts aimed at facilitating it do not remain skewed in favour of highly visible, quickly measurable and more easily achievable objectives.

iii) The political economy of adaptation coding

As well as technical challenges, the process of classification and tracking of adaptation finance is inherently political (Michaelowa and Michaelowa 2010). Actors naturally seek to use coding and tracking procedures for different reasons, each for different purposes and each with their own positions and vested interests to preserve. Ambiguities in classifying adaptation projects can allow political, economic and social factors to influence what (and how) activities are labelled with an adaptation tag. This discrepancy has, in some opinions, led to many of the early nationally identified adaptation projects - such as a number of priorities formulated under the National Adaptation Programme of Action (NAPA) process - being viewed as 'repackaged development interventions' (Kaur et al., 2010).

At the international level, the reverse can be seen, with many donors keen to limit the range and typology of adaptation activities. This is in large part spurred on by mounting pressure to demonstrate the 'additional' nature of adaptation funds, and not simply be seen as redirected Official Development Assistance (ODA). On other occasions there are perceived benefits if contributor countries are seen to be maximising their adaptation commitments by counting more elements of their ODA spend as adaptation finance. The results of this are demonstrated in the outcomes of the OECD and World Bank guidelines, requiring adaptation projects to have climate change specifically identified in project documentation (OECD 2011, WB 2012a). These actions can have significant consequences in limiting the range of funded adaptation activities (often in favour of easily verifiable adaptation outcomes).

Similar pressures from the public (and by direct association, the media) can affect the process of coding too. An assessment of climate components of 639,962 aid-related activities for 21 bilateral DAC donors under the Rio Markers (between 1995 and 2008) by Michaelowa and Michaelowa⁵ (2010), found that general ecological preferences of the donor country population, and the ideological preferences of the donor government, have a strong influence on coding decisions; the former leading to stronger over-coding (inclusion of coded activities which meet neither mitigation nor adaptation related criteria), the latter leading to reductions in over-coding.

Decisions over the nature of tracking procedures require careful deliberation and resolution against competing positions and interests. A number of developing country and NGO actors argue that, as adaptation finance is

(primarily) a compensatory payment, strict and rigid procedures for coding and tracking of payments, particularly at national level, will lead to inappropriate demands on recipient countries to account and justify expenditure. Implications can be reflected in unreasonable conditionalities, restrictions in the range of funded activities allowed, and delays in accessing finance in support of adaptation projects.

Recognition of different ideologies, power relations and politics is therefore critical to understanding the tracking debate (similar in many ways to the politicised nature of development aid allocation). One thing is clear: depending on the structure of tracking procedures, it is possible to demonstrate a wide range of findings and often draw opposing conclusions based on the same input data. In order to track adaptation finance effectively, it is important to understand the purpose and motive behind efforts to do so.

Acknowledging that individual actors draw on the process of tracking adaptation for different purposes is paramount. Certain actors may look to it to demonstrate whether financial commitments have been reached (as some national governments are required to do). Some use it to assess the spread of investments across their portfolios (how much is invested across various sectors like agriculture and health, or distribution across geographic contexts), while others draw on tracking of adaptation to gauge success of adaptation interventions (although tracking of financial flows is rarely a good indicator of effectiveness). This diversity must also be recognised in the design and standardisation of adaptation tracking and measuring procedures. Despite this, the political economy of adaptation has only recently received attention (Tanner & Allouche 2011).

4. How adaptation is currently classified and what options are available

The need to resolve these technical and political barriers is evident across the range of different stakeholders. Contributor countries need to justify that adaptation finance is additional to current and future pledges of ODA; national recipients of adaptation finance must identify and prioritise expenditure, as well as justify to funders (largely donors and multilateral banks) that disbursement is targeting demand-driven adaptation activities over and above current development requirements. Climate change is not a traditional sector for donor reporting of international development aid, thus systems for coding and tracking adaptation activities are, relatively, in their infancy.

5. Note that, although during the time of study (2010) the Rio Markers only included a marker for mitigation, Michaelowa and Michaelowa included projects that addressed adaptation activities to discount for erroneous interpretation of the markers.

As portrayed in Table 3, existing databases and methodologies each have their strengths and weaknesses, and many fail to adequately capture how finance is allocated, to whom, and for which specific activities. The scale and range of weaknesses attributed to current tracking systems has encouraged the international community – donors in particular – to investigate how best to classify and calculate adaptation finance across spatial and temporal scales.

Below is a description of the structure of current classification and tracking activities at international and national level, as well as opportunities for refining activities and methodologies.

4.1 Calculating and classifying adaptation finance at the international level

Knowing how adaptation projects are categorised and defined at the international level is crucial to understanding coding procedures within donor or multilateral agencies, and other development actors. Bodies responsible for the accounting of adaptation spending typically draw on internationally standardised metrics (the same is true of coding ODA-related expenditures). As suggested above, a lack of international consensus regarding definitions and categorisation of what qualifies as adaptation finance (or even more narrowly, what qualifies as an adaptation

Table 3: Systems for monitoring and tracking adaptation activities

	Approach	Purpose	Strengths (S) /Weaknesses (W) in application
UNDP M&E adaptation framework ⁶	<p>Stage 1: Adaptation interventions are categorised by 6 thematic areas.</p> <p>Stage 2: Adaptation processes are categorised.</p> <p>Stage 3: Standard set of process indicators are applied.</p>	Classifications were developed to contribute to the M&E Framework for UNDP's Adaptation Programme.	<p>S: Sector themes help determine actors, roles, responsibilities, methods, technologies and results.</p> <p>W: Difficult to represent cross-sector activities; relies heavily on expert judgment.</p>
World Bank PPCR results framework ⁷	<p>Stage 1: Activity categorised as either A) financing an adaptation-relevant sector or B) supporting institutional capacity development.</p> <p>Stage 2: For A: Sector based projects categorised by 9 themes; For B: projects categorised by 6 results-based categories with indicators.</p> <p>Stage 3: For A: Sector groupings categorised by 3 results-based categories with indicators.</p>	<p>Designed to provide a flexible framework to allow for (i) country-driven, country-context specific projects/programmes with a rather broad set of interventions; and (ii) working within the MDBs own managing for results approach.</p>	<p>S: Focus on knowledge management and learning.</p> <p>W: Quality of reporting limited to detail of project documents which form the only means of verification. Relies heavily on expert judgment.</p>
DFID IFC ⁸	<p>Stage 1: Adaptation intervention categorised as enabling, sectoral or financial.</p> <p>Stage 2: Intervention categorised by 7 sector themes.</p>	Indicators and categorisation process designed to measure impact and value for money, and measure results of the ICF.	<p>S: In addition to levels and sector categorisations, 7 cross-cutting themes are available to support tracking of cross-sector interventions.</p> <p>W: Reliant on self-reporting.</p>
OECD DAC Adaptation Marker ⁹	<p>Stage 1: Adaptation focus is categorised:</p> <ol style="list-style-type: none"> 1. UNFCCC provisions as 'principle objectives', 2. 'significant objectives', or 3. 'not targeting the objectives.' <p>Stage 2: Adaptation intervention is categorised into enabling activities and sectoral activities.</p>	Introduced by the DAC to help identify funding flows related to climate change adaptation in the Creditor Reporting System (OECD, 2010).	<p>S: Integrates adaptation tracking into DAC community aid tracking processes.</p> <p>W: Only tracks activities that identify climate change in project documentation; Data gaps; Reliant on self-reporting; Simplistic in capturing the range and scope of adaptation finance.</p>

6. Frankel-Reed, J. et al., 2009, 'A Framework for Evaluating Adaptation to Climate Change', ch. 18 in Evaluating Climate Change and Development, R. D. van den Berg and O. Feinstein (eds), Transaction Publishers, New Brunswick, pp. 285–298 <http://www.gsdr.org/go/display&type=Document&id=3917>

7. PPCR refers to the World Bank's Pilot Program on Climate Resilience. The approach presented in Table 1 corresponds to the indicators set out in the World Bank's PPCR Monitoring and Evaluation Guidance Note for PPCR Country Teams. http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/PPCR_MONITORING_AND_EVALUATION_Guidelines_for_MDB_country_teams%20_FINAL.pdf

8. See DFID (2011) International Climate Fund (ICF) Implementation Plan 2011/12 – 2014/15 Technical Paper. <http://www.dfid.gov.uk/Documents/publications1/uk-International-Climate-Fund-technical-working-paper.pdf>

9. Adapted and expanded from 'Handbook on the OECD-DEC climate markers (OECD 2011)

project) presents a major challenge to understanding not only the scale of financial flows but also how money is allocated and spent. Nevertheless, a range of existing and proposed options for categorisation do exist. Although not all of them are used for coding or tracking purposes, they are heavily drawn upon to establish typologies of adaptation activities (and to determine whether activities can be classified as adaptation or not). Table 3 presents four common systems at the multilateral and bilateral level, and assesses relative strengths and weaknesses in their application (note that each has its own specific role and application).

4.2 National coding systems for tracking adaptation finance

National governments need to track adaptation finance to ensure that transparency and accountability in development aid processes are maximised. It is also important in certifying (to contributors and recipients) that financial and technical support is reaching those who need it on the ground – that said, financial tracking should not be confused with assessing ‘effectiveness’ (see section 6). Without effective tracking of national adaptation finance, the opportunities for supporting populations to prepare for and adapt to climate change impacts cannot be realised.

Few developing country governments have engaged in an internal process of coding and tracking in-country adaptation activities. However, with commitments of climate finance, and pressure from donor agencies, interest is growing. One example is Nepal, where in 2011 the Nepal Climate Public Expenditure and Institutional Review (CPEIR) attempted to show how climate change-related expenditure is being integrated into the budgetary process in response to national policy setting. A review of activities in 10 relevant ministries presented 83 cost centres, programmes and projects as being associated with climate change (both mitigation and adaptation). These were then further classified according to the relevancy of coding (detailed in Table 4) and assessed according to expenditure.

The CPEIR methodology (detailed in Bhattarai et al., 2011) enables key insights into national-level spending on climate finance. These include:

- How climate change-related expenditure patterns are distributed across Central Government Agencies and Local Agencies of Ministries;
- Patterns of climate change-related expenditure as a proportion of Gross Domestic Product (GDP) and total government expenditure;
- How much climate change-related expenditure is allocated for adaptation activities.

While there is scope to factor adaptation budget codes into the system, Nepal’s budget coding system is not currently designed to easily distinguish between adaptation and development.

The CPEIR methodology is one that requires further refinement for effective monitoring of climate adaptation expenditure, however this type of analysis can present patterns and practical outcomes for national financial decision-making. Importantly, there is scope to use this as the premise for strengthening and expanding in-country budget coding systems so that funded activities at national and sub-national level can be tracked and analysed to influence adaptation finance decisions. Processes in

Table 4: Criteria for the Categorisation of Programmes within Ministries within Nepal’s CPEIR

Relevancy of Code	An activity
High	Programmes/Projects and cost centres with major activities on climate change adaptation/mitigation (in terms of biodiversity, energy, land, water, resource management). It specified climate change activities in their programmes. It has intensive field-level implementation of the activities related to climate change.
Moderate	Programmes/Projects and cost centres with significant activities related to environmental management. It does not have specific climate change headings in their project/programme but those activities ultimately help in environmental protection and management.
Low	Programmes/Projects and cost centres with some activities related to environmental conservation and management. Those environment related activities are not so significant in the magnitude and coverage area. These are mainly administrative activities.
Unrelated	The Programmes/Projects and cost centres which have no climate change activities (neither field-level activities on land, water and forest, nor education activities), are considered as unrelated to climate change expenditure. Similarly, programmes/projects without any environment conservation measures are categorised as unrelated programmes/projects.

Bangladesh and Thailand have been instigated and trialled following similar procedures (further methodological details are described in Section 5)¹⁰.

5. Examples and opportunities for improving coding and tracking systems

Assigning an adaptation intervention to a single label or code - distinct from other development activities - is an inadequate method for tracking adaptation. Doing so fails to capture the complexity of the adaptation-development continuum (see McGray et al., 2007). More importantly, it is unlikely to recognise the significant potential for development activities to contribute to adaptive capacity, even when this is not the intended objective of the project (Levine et al., 2011). The characterisation of adaptation activities as 'principal' or 'significant' (as in the Rio Markers - see Table 2) makes it hard to accurately record and quantify the degree of support for adaptation provided through an individual project. If agencies are serious in wishing to better track adaptation across scales, the trialling of new and more innovative systems is needed.

One such option is a move away from binary classifications (i.e. a single code for adaptation or not) towards the integration of percentile and multivariate coding systems. Percentile coding, also known as proportional coding, is done through a percentage allocation of the extent to which adaptation objectives are perceived to be achieved for any given project. This process has yet to be trialled extensively, although a number of agencies and governments are in the process of moving toward similar systems. At the international level, one such approach has been trialled by a number of EC member states, and more recently through a number of developing country Climate Public Expenditure and Institutional Reviews (CPEIR)¹¹. In trying to work through the medium of the Rio Markers, a number of country governments have assigned fixed percentages to generate figures for accounting purposes; for projects tagged "principal" objective, 100% of finance is commonly accounted as climate finance; for projects tagged "significant" objective this figure varies from 40% up to 100% (see Varma et al., 2011). This has however, largely been applied in the context of mitigation activities, although a similar process can readily be initiated for adaptation.

More recently, the World Bank has issued its own internal mechanism based on percentile allocation of mitigation and adaptation co-benefits within sector project activities. Co-benefits are tracked independently and reported as the share of funding that could provide climate change co-benefits for each sector code relevant to the project (not as a share of total project commitment). This is done through a four-step process (outlined in Table 5). The system will be used in the context of lending (IBRD and IDA, Guarantees, Special Financing, Recipient-Executed Activities and Global Environment Project) and climate finance sources (CIF, Carbon Finance, Montreal Protocol, GEF Medium-Sized Program and Adaptation Fund).

The World Bank's roll out will begin on 1 July 2013 and will apply to newly approved projects (retroactive coding for the financial years 2011 and 2012 is underway). Similar to the OECD DAC, the system is conservative in its approach in only allocating adaptation co-benefits if they explicitly include climate adaptation reasoning and directly address vulnerability or impact from climate variability and change (see World Bank 2012b). The disadvantage of doing so is clear: a wide range of activities that do not have a climate change label attached to project objectives will not be accounted for. Nonetheless, this approach offers a practical and easily replicable process.

At the national level, far less has been trialled. Similar to the Nepal example (in Section 4), the case of Bangladesh's CPEIR provides a useful example. Through the CPEIR exercise, the Government of Bangladesh assigned climate change related activities along four categories, each with percentile bands (see Nabiul Islam 2012):

- High, with a climate dimension weighting of more than 75%;
- Mid, with weighting between 74% and 50%;
- Low, with weighting between 49% and 25%;
- Marginal, with weighting of up to 24%.

These brackets provide a useful two-step guide in attributing the adaptation related components of a particular project. They also allow for development projects with a relatively low impact on adaptive capacity, but large scope and budget, to be included in a formal coding system (without being overly weighted as 'pure' adaptation projects). Although the guidelines were assigned for climate change related activities in general - both adaptation and mitigation - the weightings can easily be applied to suit the context of adaptation specifically. See Table 6 for an example of an adapted methodology used by the Government of Bangladesh CPEIR with percentile brackets and suitable examples.

10. See ODI website for more details: <http://www.odi.org.uk/work/projects/details.asp?id=2507&title=climate-finance-cpeir-bird-nakhooda-hedger>

11. CPEIR is a methodology, developed by ODI, for analysing climate finance and institutional capacity on climate change. It is meant to contribute to an overall Climate Fiscal Framework that provides a basis for a cross sectoral approach that is essential for the management of climate change finance.

Table 5: Example of activities under World Bank’s tracking of financial climate change co-benefits in Bank lending

Step one: Quantify commitment amounts per sector across (sub)components

Component	Bank commitment	Sector allocation (%)		Sector allocation (\$)
1	\$20 million	WA:100%		WA:\$20 million
2.a	\$15 million	WA:50%	➔	WA:\$15 million
2.b	\$15 million	WA:50%		WA:\$15 million
3	\$50 million	WB:100%		WB:\$50 million

(Sector allocation is done through allocated codes - WA represents investments in sanitation; WB represents investments in solid waste management)

Step two: Screen each (sub-) component for Adaptation and Mitigation co-benefits, based on the project’s appraisal and/or supporting document. To facilitate climate coding, World Bank climate experts have developed an illustrative typology of activities with adaptation or mitigation co-benefits. Climate coding is conservative: if the impact of (sub-) component action is unclear, then no climate benefit should be accounted for. The same development (sub-) component action can provide both adaptation and mitigation co-benefits. The same development (sub-) component action does not systematically qualify as adaptation under different circumstances.

Component	Sector allocation (\$)		Adaptation co-benefits	Mitigation co-benefits
1	WA:\$20 million		✓	✗
2.a	WA:\$15 million	➔	✗	✓
2.b	WA:\$15 million		✗	✗
3	WB:\$50 million		✓	✓

Step three: Assign Funding for Adaptation and Mitigation co-benefits to sector codes. If a (sub-) component is considered to provide climate adaptation or mitigation co-benefits, then the *entire* funding supporting this (sub-) component counts towards adaptation or mitigation co-benefits. Unless there is clear rationale for allocating otherwise (i.e., a detailed financing breakdown), percentages will be shared equally across sectors in the case where more than one bank sector is relevant for a particular activity.

Component	Sector allocation (\$)	Adaptation co-benefits	Mitigation co-benefits		Adaptation co-benefits (\$)	Mitigation co-benefits (\$)
1	WA:\$20 million	✓	✗		WA:\$20 million	
2.a	WA:\$15 million	✗	✓	➔		WA:\$15 million
2.b	WA:\$15 million	✗	✗			
3	WB:\$50 million	✓	✓		WB:\$50 million	WB:\$50 million

Step four: Regroup Funding for Adaptation and Mitigation co-benefit amounts by sector code, and compute the share of funding by sector code.

Sector	Step 1	Step 3		➔	To be entered in SAP	
	Sector allocation	Adaptation co-benefits (\$)	Mitigation co-benefits (\$)		Adaptation co-benefits (%)	Mitigation co-benefits (%)
WA	\$35 million	\$20 million	\$15 million		57%	43%
WB	\$65 million	\$50 million	\$50 million		77%	77%

Source: World Bank 2012b

Table 6: Modified criteria for the coding of adaptation programming used within the Bangladesh CPEIR

High	Clear primary objective of delivering specific outcomes that contribute to adaptation and improve adaptive capacity
(Climate dimension weighting more than 75%)	<p>Activities may include:</p> <ul style="list-style-type: none"> • The additional costs of changing the design of a programme to improve climate resilience (e.g. extra costs of climate proofing infrastructure, beyond routine maintenance or rehabilitation) • Relocating villages to give protection against cyclones/sea-level • Building institutional capacity to plan and manage climate change, including early warning and monitoring
Mid	Either secondary objectives related to building adaptation, or mixed programmes with a range of activities that are not easily separated, but include at least some that promote climate adaptation
(Climate dimension weighting 50% to 74%)	<p>Activities may include:</p> <ul style="list-style-type: none"> • Forestry and agroforestry that is motivated primarily by economic or conservation objectives, because this will have some effects on adaptive capacity • Water storage, water efficiency and irrigation that is motivated primarily by improved livelihoods, because this will provide protection against drought • Livelihood and social protection programmes, motivated by poverty reduction, but building household reserves and assets and reducing vulnerability. This will include programmes to promote economic growth, including vocational training, financial services and the maintenance and improvement of economic infrastructure, such as roads and railways¹²
Low	Activities that display attributes where indirect adaptation benefits may arise
(Climate dimension weighting 25% to 49%)	<p>Activities may include:</p> <ul style="list-style-type: none"> • Water quality, unless the improvements in water quality aim to reduce problems from extreme rainfall events, in which case the relevance would be high • General livelihoods, motivated by poverty reduction, but building household reserves and assets and reducing vulnerability in areas of low climate change vulnerability • General planning capacity, either at national or local level, unless it is explicitly linked to climate change, in which case it would be high
Marginal	Activities that have only very indirect and theoretical links to adaptation
(Climate dimension weighting less than 25%)	<p>Activities may include:</p> <ul style="list-style-type: none"> • Short-term programmes (including humanitarian relief) • The replacement element of any reconstruction investment (splitting off the additional climate element as high relevance) • Education and health that do not have an explicit climate change element but with indirect links to supporting adaptive capacity

Source: Adapted and expanded from excerpts by Nabiul Islam et al., (2012)

12. See guideline note no.2

Another recent example of proportional coding is the Climate Change and African Political Stability programme (CCAPS). The CCAPS methodology starts by breaking individual projects down into component activities using project documentation (for example, an agriculture project might have soil conservation as its main objective, but could include local capacity building, farmer education, and water conservation as activities within the project). Activity codes are then assigned manually, using the AidData platform, and then assigned to four separate categories along a 'climate spectrum'. These four categories are: Ambiguous Development (AD); General Development (GD); Capacity Development (CD); and Climate-Orientated development (CO) (for details of the definitions and characterisation of each see Peratsaki et al., 2012). A 'climate score' is then assigned through a weighted average (0 for AD; 0.5 for GD; 1 for CD; and 2 for CO) and simple equation¹³ (the CCAPS approach is explored in more detail in the following section).

Although proportional systems for coding and tracking adaptation present numerous advantages over current systems, a number of significant obstacles remain. The process of assigning brackets and percentage weightings is inevitably imprecise and heavily dependent on local knowledge and the local context; most importantly, it relies on 'expert' judgement. There also remains scope for adaptation co-benefits to be assigned to a whole range of activities, with the potential for bias and misrepresentation; the same project may receive different scorings depending on the user's interpretation. For this reason, procedures of allocation must be clear, concise and practical. Structures should be put in place to allow cross-comparison, and for guidance and examples to be clearly identified.

There will always be a certain level of subjectivity in allocating percentages, about which tracking systems must be open and transparent. Reflected in the World Bank's new tracking procedures, coding should ultimately be conservative: if the impacts of particular co-benefits are unclear or marginal, then little or no adaptation weighting should be accounted for (World Bank 2012). Attribution should also be closely supervised and verified by relevant stakeholders (both expert and non-expert) at various levels to ensure standardisation across different portfolios.

5.1 Diversifying what we track and code

Importantly, tracking of adaptation finance should not stop at identifying how much funding is being allocated to adaptation. Much use also lies in being able to track and code different types of adaptation activities. Doing so is imperative to prevent skewed disbursement of adaptation finance, helping to recognise the broad ranging nature of interventions that can contribute to adaptation. A number of options exist, such as coding against three types of adaptation, identified by Brooks et al. (2011) as: addressing the adaptation deficit; incremental adaptation; and transformative adaptation.

Other useful tracking tools include the National Adaptive Capacity framework (see Dixit et al., 2011) which separates five distinct components that contribute to adaptive capacity at the national level, focusing on support for strengthening national institutions and mainstreaming of adaptation (see Table 7). Similarly, the Local Adaptive Capacity framework (see Levine et al., 2012) developed under the Africa Climate Change Resilience Alliance

Table 7: The National Adaptive Capacity framework (NAC)

NAC Adaptation functions Summary	
Assessment	Assessment is the process of examining available information to guide decision-making. Adaptation is likely to require iterative assessments over time, including assessments of vulnerability, climate change impacts, adaptation practices and the climate sensitivity of development activities.
Prioritisation	Prioritisation means assigning special importance to particular issues, areas, sectors, or populations. For adaptation, prioritisation at the national level usually takes into account projected geographic distribution of climate change impacts, as well as differential vulnerability to the impacts of climate change among a country's population.
Coordination	Adaptation requires action by disparate actors at multiple levels, both within and outside of government. Coordination may be horizontal (e.g., among ministries), vertical (e.g., among national, global, and sub-national actors), or inter-sectoral (e.g., between government and business).
Information Management	Information management consists of collecting, analyzing and disseminating knowledge in support of adaptive activities. Relevant information will vary, but at a minimum, typically covers climate variables, the status of natural and human systems and existing coping strategies.
Climate Risk Reduction	Different development priorities will face different risks from climate change. Addressing these risks depends on the above adaptation functions, but also requires a distinct process of identifying specific risks to a given priority, evaluating the full range of options for addressing the risks, and then selecting and implementing risk reduction measures.

Source: Dixit et al. (2012)

13. The final score for each project (FS) is determined by a weighted average of the overall project score (OS) and the activity score average ($\sum AS / n_{Activities}$) as in the equation below: $FS = 0.7 * OS + 0.3 * [\sum AS / n_{Activities}]$. See Peratsaki et al., 2012 for details.

(ACCRA) identifies particular characteristics of adaptive capacity that can lend themselves to documenting adaptation activities and spending at project and community levels. Importantly, neither of these frameworks was designed with tracking purposes in mind (and in their current iterations would be unfit for doing so). However, they demonstrate the types of tools that may lend themselves to a diversification of tracking systems and offer a useful starting point for further research and trialling. Perhaps the greatest use of an adaptive capacity framework may be bridging the gap between tracking the flows of adaptation finance and assessing effectiveness of delivery on the ground.

Which one of the myriad of adaptation frameworks should be used will depend largely on the scale and purpose of tracking procedures.

Box 1: Examples of processes employed to estimate adaptation finance as a proportion of development assistance at the national level

Geocodes: CCAPS uses georeferences to represent datasets of climate vulnerability and aid on visual maps which show the location of adaptation (or other development finance) and its sub-components. Important questions that can be addressed from this include: Where is adaptation finance going? To whom? For what activities? The end product of this work is a comprehensive dataset and dynamic maps, in which users can view specific project details, combine aid data with other datasets, and overlay different maps to generate innumerable data visualisations to inform policy making. By displaying climate aid projects on top of climate vulnerability maps, users will be able to discern whether international aid resources are being effectively mobilised to reduce climate change risks and threats. The detailed and interactive information on climate-aid flows promises to contribute to a stronger feedback loop between policymakers and citizens on the ground (Weaver and Peratsakis 2011).

Geocoding has been trialled in Malawi aiming to enable the Malawi Ministry of Finance to generate aid reports and catalyse new conversations with its donor partners. Most importantly, the initiative hopes to lead to improved targeting and effectiveness of aid at the local level, in helping populations prepare for and adapt to the impacts of climate change. At present this methodology has only been tested against projects for the World Bank, but efforts are underway to improve transparency of adaptation aid through geocoding the aid activity of all 27 donors in Malawi (Weaver and Peratsakis, 2011).

For further details on the CCAPS methodology and approach see: <http://strausscenter.org/ccaps/>

Other opportunities exist in tracking where funding for adaptation has been allocated and in understanding the disbursement of financial flow across geographic scales. Geotagging is one such innovation, with the CCAPS (see Box 1) again providing a clear example of the possibilities of combining different technologies to give a comprehensive assessment of the spread of adaptation activities at different levels; from regional and national, right down to sub-national and project levels. CCAPS maps tag 'climate aid' activities at the sub-national level and overlay them on vulnerability maps. This is to identify where aid is going (geographically) and assess whether such activities are being appropriately directed at vulnerable areas. This approach has clear methodological weaknesses (not least of which are difficulties in quantifying vulnerability indexes suitable for sub-national mapping). Nevertheless, applications such as this paint a powerful and compelling picture of the how and where sources of funding are targeted on the ground.

Although none of the approaches and tools detailed above offers complete solutions to the problems posed by tracking adaptation, they are a constructive starting point in the trialling of new and innovative methods. Each offers viable and practical alternatives to traditional forms of tracking adaptation and requires further testing and refinement.

6. Taking the debate forward

Given the inadequacies of past tracking procedures, the need for trialling new and innovative systems is clear. In attempting to overcome key barriers, a number of practical and methodological tools (that build upon and improve existing procedures for coding and tracking adaptation at international and national level) have been proposed. In addition to these, we identify four principles that need to be considered and addressed in order to move the debate forward, with a view to offering achievable actions in overcoming key obstacles in tracking adaptation finance across scales.

i) Coding and tracking across the full spectrum of adaptation activities

Many existing systems for monitoring adaptation finance require that 'climate change adaptation' is explicitly mentioned in a project's formal documentation for it to be eligible for tracking (see Table 9). This means that a project can only be classified as contributing to adaptation if adaptation is a specific and targeted outcome (whether direct or indirect). While this may appear practical, it in no way reflects reality of adaptation on the ground.

Table 9: Criteria for coding adaptation activities

World Bank 2013:

For coding purposes, an activity provides adaptation co-benefits if it reduces the vulnerability of human or natural systems to the impacts of climate change and climate variability related risks by maintaining or increasing adaptive capacity and resilience. To avoid the mis-labeling of development as adaptation, an activity will only be recorded as adaptation if there is an explicit intent in the project's appraisal and/or supporting documents to address vulnerability to or impact from climate variability and change.

OECD DAC CRS Adaptation Marker:

An activity is eligible for the climate change Adaptation Marker if: a) the climate change adaptation objective is explicitly indicated in the activity documentation; and b) the activity contains specific measures targeting the reduction of vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience.

Source: World Bank (2012b), OECD (2011)

As described in Section 2, adaptive capacity can be supported through a wide spectrum of activities (McGray et al., 2010). Activities aimed at addressing issues of social protection, livelihood support or disaster risk reduction can each have significant impacts on local adaptive capacity, even though adaptation may not feature at all within project documentation (Levine et al., 2010). Despite clear contributions to adaptation, none of the above would be captured under existing coding procedures. Thus, any system wishing to realistically track and code the spectrum of investments that contribute to adaptation (whether explicitly recognised or not) must have measures to incorporate this within their methodology, to some extent at least.

Reasons for this discrepancy are numerous, including the practical difficulties in assigning adaptation co-benefits to the myriad of existing development activities. Much can be attributed to factors of political economy. There is pressure, largely from international donors, to demonstrate additionality and promote the use of tracking systems that separate and distinguish between development and adaptation. They also discourage the documentation of already existing development activities in light of their contributions to adaptive capacity, seen by many as 'repackaging' of ODA (PISF 2011).

If by the World Bank's own definition, the purpose of tracking adaptation finance is to 'track aid flows that support climate action' (World Bank 2012b), then doing so only through projects that explicitly identify adaptation as an operational focus is misguided. Efforts to build on

the Rio Markers, to include co-benefits and add further granularity, are a positive step forward. However, they themselves need to go further and include the significant contributions of wider development interventions on adaptation in 'support of climate action'.

ii) Transparency, Replicability and Accountability

The move toward robust and transparent reporting of adaptation finance will face significant methodological hurdles (such as those outlined in Section 3). Overcoming many of these difficulties is likely to be achieved only if contributor and recipient actors report in a routine, comprehensive and comparable manner, according to common definitions and standards. Doing so is critical to the collection of complete, reliable and timely data.

This is not to say that all tracking procedures must be conducted through a singular approach or system. Rather, innovation and diversity will be key to the collective improvement of tracking systems, and different types of tools and methodologies will be needed to satisfy user needs. These needs are diverse, and can include: ensuring transparency of financial flows; tracking public financial commitments; verifying progress towards commitments and actions; and assessing effectiveness of respective financial mechanisms, or the effectiveness of adaptation spending. Greater transparency of methodological applications of tracking is needed in order to ensure replicability and accountability across scales and systems (and more importantly, understand the reasons behind their use and selection).

Learning and reflection are key to this dialogue. Although efforts to track and code adaptation are in their relative infancy, important lessons can already be drawn. For example, a review of the Rio Markers for adaptation would present a useful opportunity for deliberation and revision of the markers' utility across levels. Lessons can also be learned from the small number of approaches that have adapted and expanded with the methodologies used by the OECD (such as EC and CPEIR processes). Seeking to build on the important experience of ODA coding procedures will be of great relevance, given the similarities in many of the key obstacles. Shared reflection, alongside greater emphasis and use of political economy analyses (PEA), is imperative if innovative tracking tools are to be successfully trialled, evaluated and eventually scaled up in practice.

iii) Moving towards an agenda on effectiveness of adaptation finance

A key area of development is a move towards better understanding of the effectiveness of adaptation finance, and its alignment with coding and tracking procedures. Closer links between the two will not only contribute to more effective disbursement of

adaptation finance across its varied intermediaries, but also to understanding the links between funding and its delivery on the ground.

Donors and national governments may reach their financial targets on spending for adaptation, but this tells us very little about whether adaptation has actually occurred; it tells us even less about how it has contributed to the process of adaptation on the ground, or where efforts (both financial and technical) need to be targeted to support future efforts. Having better links and close alignment between the methods of tracking adaptation and evaluating the effectiveness of outcomes will be a key step forward in helping answer these questions. This is not to say that the two agendas and methodologies become entirely merged. There are advantages and clear purposes (if not mostly political in nature) in each, not least of which is a need to ensure that international commitments for delivering climate finance are met.

As with the problems that plague coding and tracking, adaptation finance effectiveness suffers from a lack of agreed definition and common principles. However, promoting greater understanding and recognition of the principles of effectiveness, and building on existing coding practices to explore opportunities for tracking it, will play a large role in 'connecting the pipes' - ensuring better delivery of adaptation interventions, from mobilisation at the international (or national) level right down to implementation on the ground. Doing so may also be an effective tool in moving past the use of financial targets and commitments as a sole proxy for the successful delivery of adaptation across scales (a fate familiar to the aid community). Adaptive capacity frameworks (such as the NAC and LAC) may provide useful starting points in efforts to bridge financial tracking and effectiveness of delivery.

iv) Enhancing the capacity to monitor adaptation

Few developing country governments are actively engaged in the process of tracking flows of adaptation finance at the national level. Reasons for this are numerous: methodological guidelines of how to do so at the national level are scant; technical support for the inclusion of adaptation objectives within budgetary systems is lacking; and in-house government capacity and resources to implement an effective tracking process is low.

Perhaps most importantly, national governments have so far had little incentive to invest resources in expanding existing tracking and budgetary systems to include adaptation. Yet, given the size of international commitments, and potential sources of both internal and external funding being allocated to the delivery of adaptation, pressure will inevitably mount on national governments to put in place robust monitoring systems.

This pressure is likely to accelerate in light of the push for "direct access" within the international community – a process whereby the recipient country can access financial resources directly from a particular climate fund, or can assign an implementing entity of their choosing (Brown et al., 2010; ODI/UNDP 2011). The logic behind this approach is to increase the level of country ownership, oversight, and involvement in adaptation activities, and to create stronger accountability of the recipient country to the fund. Importantly, capacity building of tracking processes and sector budget support (SBS) to assist national governments to better track and deliver adaptation will be crucial if countries are to access international funds.

At the national level, countries wishing to implement and track adaptation activities need to make a number of careful considerations based on their aims and needs. If simply wishing to comply with existing internationally agreed coding procedures for the purpose of accounting and accreditation (such as the OECD DAC criteria), then efforts to track projects specifically aimed at delivering adaptation are relatively straight forward. These actions require little in the way of technical capacity and resources, and so should (in theory) fit easily within existing national budgetary procedures.

Yet, in practice they provide little additional value; they are not a measure of adaptation related activities that operate within a given country, and they do not capture the scope of activities and interventions that contribute to adaptive capacity on the ground. Instigating effective nationally owned mechanisms for these to be coded and tracked will, in most cases, require a transformational shift in procedures, inputs and resources needed to support it. This will include support for (among others): strengthening public finance management and budget classification systems; increasing technical capacity to undertake, and promote the use of, statistical assessment within coding procedures; clarifying institutional roles and remits within and across government ministries and agencies; and supporting greater links and coordination between central and local government budgetary coordination.

Equally, policy and technical support is required at the sub-national level to create an effective enabling environment for the design and implementation of adaptation policies, plans and strategies (WRI, 2012). Enhancement of tracking systems and budget support can play a key role in ensuring more effective delivery of adaptation on the ground. For example, a diversification of the categories included within coding and tracking practices (such as sectoral distribution, geographic location and type of adaptation) may help identify strategic priorities for climate adaptation at an early stage to influence national and international decision-making processes. This process is crucial to ensuring international adaptation finance reaches the most vulnerable populations and sectors.

Activities reported by NGOs and lower divisions of government that address climate adaptation issues are currently inadequately accounted for in national strategies, despite the collective impact and cost of sub-national activities. Capacity building could support understanding of climate change at the local level, to reduce the tendency for adaptation projects to be grouped with disaster risk reduction, natural resource management and environmental activities in general. These ambiguities and capacity restrictions all contribute to limitations, at the sub-national level, for translating national policies into local-level action, and for effective bottom-up reporting of adaptation-related expenditure (Bhattarai et al., 2011).

7. Conclusions: Getting the process right at this early stage

The issues raised in this paper point to the inadequacy of existing coding and tracking systems, and the consequences of a lack of diversity. While a singular approach may have obvious benefits in terms of standardisation, it fails to recognise the wide range of needs and uses that different actors have in coding and tracking adaptation finance. Fresh approaches to these needs are required and a call for innovation and the trialling of new methods is needed. Refreshingly, emerging interest in coding and tracking adaptation finance allows for fresh ideas and outside perspectives to be shared and discussed (although their take-up is far from guaranteed). It also brings with it the opportunity to change the status quo, as new systems are devised and formalised.

Somewhat surprisingly, the political nature of coding practices is rarely discussed openly within academic and policy arenas, yet to understand how coding systems are applied internationally requires an appreciation of institutional and socio-political drivers. Many of the key barriers to effective coding and tracking (such as agreement on definitions, and others described in Section 3) arise just as much from vested interests and incentives as from technical or academic disagreements. An emphasis on sharing of knowledge and transparency is crucial at this early stage, not only to allow the discipline to evolve but to ensure accountability and openness in observing the reasons for applying selected methods and approaches. Promoting greater openness and inclusivity will provide an important vehicle for deliberation. While this may not result in immediate consensus, until key political economy drivers are talked through and addressed openly, these same barriers are likely to remain.

While the emphasis on tracking adaptation finance is welcomed and much needed, it should not detract from the equally (if not more) relevant topic of effectiveness. Knowing how much money is spent on adaptation and where it is being allocated does not necessarily reflect whether that money has been translated into effective adaptation on the ground (arguably the more important question, for all actors involved). Seeking to combine the agendas on tracking and effectiveness is therefore imperative, along with refining appropriate and practical frameworks for assessing effectiveness.

While the points raised in this paper offer few immediate solutions, and will likely require significant further attention, it is hoped that the paper serves as a useful starting point in an emerging discipline, a discipline that helps ensure existing systems for coding and tracking are more inclusive and prevent the skewed nature of current adaptation investments.

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