



ACTION ON CLIMATE TODAY



# **Mainstreaming, Accessing and Institutionalising Finance for Climate Change Adaptation**

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## Abbreviations and Acronyms

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ACT	Action Climate Today
ADB	Asian Development Bank
CBA	Cost–benefit analysis
CC	Climate Change
CC%	Climate Change relevance
CCAPSP	Climate Change and African Political Stability Programme
CCET	Climate Change Expenditure Tagging
CCFF	Climate Change Financing Framework
CF	Climate Finance
CFU	Climate Finance Unit
CGE	Computed General Equilibrium
CPEIR	Climate Public Expenditure and Institutional Reviews
DFID	Department for International Development
GCF	Green Climate Fund
GCM	General Circulation Models
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GIZ	<i>Gesellschaft fuer Internationale Zusammenarbeit</i>
FFRG	Financing Frameworks for Resilient Growth

IAMs	Integrated Assessment Models
L&D	Losses & Damages
LESS	Low Emission Budget Tagging and Scoring System
MCA	Multi-Criteria Analysis
MTEFs	Medium Term Expenditure Frameworks
NABARD	National Bank for Agriculture and Rural Development
NAF	National Adaptation Fund
GCF	Green Climate Fund
MoEFCC	Ministry of Environment, Forestry and Climate Change
NDCs	Nationally Determined Contributions
ODA	Official Development Assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
PERs	Public Expenditure Reviews
PEIRs	Public Expenditure and Institutional Reviews
SAP	State Action Plan
SAPCC	State Action Plan on Climate Change
SAPFIN	State Action Plan Financing Framework
UNDP	United Nations Development Program
UNFCCC	United Nations Framework for the Convention on Climate Change
WHO	World Health Organisations

## Executive Summary

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The cost of adapting to climate change in developing countries could rise to between USD280 and USD500 billion per year by 2050 (UNEP, 2016). Moreover, adaptation costs are likely to increase, even if the world succeeds in limiting the global temperature rise to well below 2°C above pre-industrial levels by 2100 (UNEP, 2016). Past assessments seem to have substantially underestimated the adaptation costs in developing countries due to the omission of some sectors, only partial coverage of others, and unforeseen costs from maladaptation (Parry et al, 2009). What further leads to lower cost estimates is that much of the literature on adaptation costs focuses on planned public adaptation and overlooks autonomous and private adaptation, which - if included – would potentially raise cost estimates significantly (UNEP, 2016).

While the Paris Declaration’s Nationally Determined Contributions (NDCs) represent laudable progress on adaptation, the cost of adaptation actions of the NDCs substantially exceed current finance levels (UNEP, 2016). The shortage in adaptation finance has been aggravated by the fact that climate funds have been created, but not sufficiently capitalised. Many climate funds are slow to disburse in general and even more delayed to disburse for adaptation (as opposed to mitigation), hampering much-needed adaptation actions. While climate funds are popular with governments and fulfil an important role, the sheer volumes required for adaptation far exceed the current climate fund amounts, making it evident that the bulk of adaptation action will have to be funded through expenditure from core development budgets and fiscal means in most countries.

To this end, governments can benefit from a framework that allows them to mainstream climate change into their core development budgets. Financing Frameworks for Resilient Growth (FFRG) offer a way to estimate the economic cost of climate change damages, quantify adaptation benefits of current expenditure, assess the adequacy of that expenditure relative to the projected economic cost of climate change, and identify areas where additional financing is needed to reduce the economic impact of climate change.

Action on Climate Today (ACT) responds to these challenges with its focus on mainstreaming climate change across budgets, and helping government access new finance while strengthening institutions to take action on both. ACT, a UK Aid funded programme focused on climate-proofing growth in four South Asian countries, has utilised the financing frameworks as a mechanism for (i) raising government awareness of adaptation needs; (ii) helping governments identify key priority sectors or actions where investment is needed, (iii) mobilising finance from development budgets and assessing the adequacy of effort, and (iv) reporting on adaptation relevant expenditure thereby adding to accountability and transparency.

This paper reviews the current state of practise and debates related to mainstreaming of adaptation finance and synthesises experience and key lessons from the ACT programme

that might be of relevance to practitioners and governments working to mobilise financing for climate resilient growth and development.

In particular, this paper reviews:

Methods for estimating climate relevance of budgets or expenditure

Approaches to budget tracking and expenditure review

Estimation of economic loss and damage estimates

Calculation of the adaptation financing gap

Development of financing scenarios

Approaches to closing the adaptation gap

Key entry points for mainstreaming of climate adaptation finance

The paper also discusses necessary institutional mechanisms and capacity development required for effective climate finance mainstreaming and provides key lessons for practitioners and government agencies looking to undertake similar work.

## Background & Introduction

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The cost of adapting to climate change in developing countries could rise to between USD280 and USD500 billion per year by 2050 (*UNEP, 2016*). These figures represent a substantial increase from previous estimates based on a 2010 World Bank study, which placed the cost of adaptation at USD70-100 billion annually for the period 2010-2050 (*International Institute of Sustainable Development, 2016*). Past assessments substantially underestimated costs (*Parry et al, 2009*). While the Paris Declaration's Nationally Determined Contributions (NDCs) represent laudable progress on adaptation, the cost of adaptation actions of the NDCs substantially exceed current finance levels (*UNEP, 2016*). Many countries in South Asia are particularly vulnerable to climate change and are currently under duress to mobilise the required funding for adaptation. Without adaptation, their economies face a daunting prospect. A 2013 Asian Development Bank (ADB) study finds that due to the impact of climate change in South Asia, the region's Gross Domestic Product (GDP) growth rate will fall steadily from an estimated growth rate of 5% in 2015 to 1.5% in 2050 (*ADB, 2013*). Other studies suggest an even higher economic impact of climate change due to its potential to affect the engines of economic growth and create compounded or year-on-year impacts.

The adaptation finance gap has been aggravated by the fact that developed country parties are falling short of providing USD100 billion annually by 2020 for climate action in developing countries. In 2009, parties to the United Nations Framework Convention on Climate Change (UNFCCC) from developed countries had committed to jointly mobilise USD100 billion a year from various sources by 2020. In 2015, OECD reported that climate finance volumes flowing from developed to developing countries that might qualify to meet the USD100 billion goal, amounted to an annual average of USD57 billion in the period between 2013 and 2014 (*OECD 2015*). Of this, only about USD9.3 billion was directed to adaptation, and a further USD3.7 billion was directed to dual adaptation-mitigation projects (*OECD, 2015*). UNFCCC left the form of this finance – public or private, bilateral or multilateral – open. But the OECD study makes clear that sources from the developed countries' private sector are not expected to fill the adaptation gap either. Of the small fraction of private sector finance that can be tracked today, less than ten per cent is directed to climate change adaptation.

While climate funds have an important role to play to demonstrate how climate financing can be mobilised, it is evident that their contribution to avoid losses & damages (L&D) from climate change will be marginal. Climate funds have been created but not sufficiently capitalised or mobilised. Many climate funds are slow to disburse in general and even slower to disburse for adaptation (as opposed to mitigation), hampering much-needed adaptation actions. While climate funds are popular with governments and fulfil an important role, the sheer volumes required for adaptation far exceed the current amounts pledged to climate funds, making it evident that the bulk of adaptation action will have to

be funded through expenditure from core development budgets and fiscal resources in most countries.

There is wide discrepancy in the terms of government funding pledged for adaptation action by developing countries and funding required offsetting and preventing the above-mentioned damages in developing countries. As the table below shows, even if funds that are currently pledged are actually deposited and then approved in the form of programmes, the funding for adaptation is currently estimated to amount to just above USD17 billion in an optimistic scenario. The scenario consists in counting both adaptation and multiple foci funds towards adaptation. These pledges and commitments are in stark contrast to the above-stated need for hundreds of billions of US dollars. As a comparison, it is projected that Afghanistan alone will require USD10.8 billion between 2020 and 2030 (*Islamic Republic of Afghanistan, 2015*).

Table 1: Climate Funds (as of July 2017) in USD million

Fund		Pledge
Adaptation for Smallholder Agriculture Programme (ASAP)	Adaptation	308
Adaptation Fund		633
Least Developed Countries Fund (LDCF)		1,250
Pilot Programme for Climate Resilience (PPCR)		1,153
Special Climate Change Fund (SCCF)		368
		3,712
GEF Trust Fund (GEF 4)	Multiple Foci	1,083
GEF Trust Fund (GEF 6)		1,117
Global Climate Change Alliance (GCCA)		906
Green Climate Fund		10,273
Indonesia Climate Change Trust Fund (ICCTF)		26
		13,405
Source: <a href="http://www.climatefundupdate.org/">http://www.climatefundupdate.org/</a>		17,117

It is evident that countries will have to rely on their own financial resources to fill the adaptation finance gap. To fund climate change adaptation to prevent as much future losses & damages as possible, governments will have to go beyond donor funding and mobilise their own fiscal resources. They also need to shift spending to obtain the most adaptation benefits. Moreover, it will require building capacity at several levels of government to understand the implications of climate change for planning across sectors. To finance as much adaptation as possible, decision-makers must be able to mainstream climate change across budgets and planning.

In response to these challenges, a UK-AID initiative, the Action on Climate Today programme, aims to mainstream climate change adaptation and resilience in government plans, policies and budgets at the national and subnational level in South Asia. Following detailed consultation and planning during the programme's first year, Climate Finance (CF) emerged as one of the core themes of the programme. This was in response to the acknowledgement that scarcity of funding and weak capacity for climate finance is obstructing adaptation action.

ACT supports governments with a framework that allows them to mainstream climate change across their core development budgets. Financing Frameworks for Resilient Growth (FFRG) offer a way to estimate the economic cost of climate change damages, quantify adaptation benefits of current expenditure, assess the adequacy of that expenditure relative to projected economic cost of climate change, and identify areas where additional financing is needed to reduce the economic impact from climate change.

Figure 1: Elements of a Financing Framework for Resilient Growth



In the following pages, elements of the financing framework will be described in detail starting with the tracking of public expenditure on climate change.

## 1. Tracking Public Expenditure on Climate Change

### 1. a. The Role of Expenditure Tracking in Managing Climate Finance

Resource tracking is the process of routinely collecting, analysing, and monitoring resources flowing into and within a system. The focus of this chapter is on tracking public expenditure on climate change because ACT's primary partners tend to be government institutions, and because evidence shows that the bulk of adaptation spending is expected to come from government (national and subnational) budgets. From a climate change perspective, tracking government spending (ACT, 2016) on adaptation and mitigation is essential for a number of reasons:

It enables policy makers to prioritise, plan, and allocate resources to better tackle climate change associated economic loss and damage (L&D).

It is an important means of promoting transparency and accountability, for example by tracking finance committed to UNFCCC NDCs.

It provides a baseline analysis of the existing level of effort to combat economic L&D, against which progress can be tracked over time. In this manner, expenditure tracking is often an early step in introducing a financing framework.

The practice of climate change expenditure tracking has borrowed several methodologies from the field of public finance management. Adjustments were made to reflect the idiosyncrasies of climate spending, in particular, the need for weighing expenditures to reflect varying degrees of climate change relevance. This chapter explores various approaches to estimating climate change relevance and tracking expenditures.

### 1. b. Estimating Climate Change Relevance (CC %)

Discussions on countries' commitments towards climate change adaptation have been on-going. The responsibility of industrialised countries to commit funds *in addition* to Official Development Assistance (ODA) has been a particularly contentious issue. One argument for increased financial commitments by developed countries towards adaptation in developing countries is that they are obligated to make these commitments to address their responsibility as the main emitters of greenhouse gases, and not that they should do so out of solidarity. As climate change is the result of environmentally unsustainable growth trajectories economically benefitting mostly industrialised countries, those countries that are least developed (and typically the most vulnerable to CC), are also the least responsible. The responsibility of assisting the most vulnerable countries in coping with the impacts of climate change is *additional* to existing ODA commitments.

Moreover, it is paramount to distinguish the role of development institutions from that of formal climate change institutions (such as UNFCCC) and consider how ODA might complement adaptation funding rather than replacing it (*Ayer and Huq, 2008*). In order to not divert development aid to supplement adaptation funding, which industrialised countries should commit to, it is important to distinguish between the two and assess development programmes for their climate change benefits and track them.

Similarly, spending by governments based on their own fiscal resources should be assessed and tracked for climate change relevant expenditure.

The first step of any attempt to track resources is to define and delineate the functional area of relevance. For tracking exercises in traditional sectors, such as education, this involves a straightforward decision by governments on which services should be included (primary education services, for example). For climate change, tracking is complicated by the fact that measures that produce climate change adaptation and mitigation benefits are usually part and parcel of broader programmes that promote sustainable development. Few programmes specifically address climate change as their central objective. There is a need then to untangle spending that has potential adaptation and mitigation benefits, by understanding the climate change relevance of different development programmes. To be clear, this does not mean that climate change will not be mainstreamed. By delineating the adaptation benefits of programmes, one seeks to ultimately establish a figure that can be placed alongside the losses and damages to gauge the adequacy of effort.

Two approaches to assess climate change relevance (CC %) have emerged; an objectives-based approach, and a benefits-based approach, both of which are being used in South Asia. Table 2 sets out the main characteristics of each approach. The objectives-based approach has been used in Climate Public Expenditure and Institutional Reviews (CPEIRs) by the Overseas Development Institute and by UNDP in Bangladesh, Nepal, Pakistan, Philippines, and Thailand. A variation of the objectives-based approach is also used in the OECD ODA database, in the form of climate change markers. The benefits-based approach has been pioneered by the ACT programme and UNDP. Theoretically, benefits and objectives-based approaches for estimating climate change relevance are complementary —objectives are after all an indication of intended benefits. However, in practice, the weightings prescribed under the objectives-based approach are significantly higher than those prescribed under the benefits-based approach. For example, a high climate change relevance activity such as early warning systems may receive a 33% weighting under the benefits based approach, compared to up to 100% weighting under the objectives based approach. The benefits based approach is more scrutinising and assesses any programme or

project for all its benefits and then ranking these. Where a programme would still be relevant in a fictional scenario without climate change (for example, an early warning system for an area where floods have been historically common and less affected by climate change associated weather variability and temperature increases), it can still be highly relevant but not CC relevant. Likewise, a development programme focused on livelihoods that also build adaptive capacity can be highly relevant for its beneficiaries and the country but only its adaptation benefits should be counted as a contribution to adaptation. Under the objective-based approach, these programmes in their entirety would be counted towards CC adaptation thereby over-estimating the CC relevance. For more details, please refer to Table 2.

On balance, the benefits-based approach is more robust which is why ACT has been championing its use with governments in South Asia.

While a country and state specific evidence base is being developed in countries where ACT is supporting this activity, it has proven useful to have benchmark values for different types of programmes. A synthesis of the emerging body of evidence, categorising different types of programmes into high/medium/low relevance groupings, and suggesting benchmark values or ranges can be found in Annex 1. These values provide a basis for developing initial estimates for governments where data or time constraints prevent a fuller analysis. A recent analysis conducted by ACT (*ACT, 2016a*) has taken this further, comparing estimated CC% scores for different sectors in countries and states, to identify cross-country patterns.

Table 2: Estimating CC Relevance of Public Expenditures: Comparison of Objectives-based and Benefits-based Approaches

	Objectives-based	Benefits-based
Basis	Assessment of the extent to which CC is part of the explicit or implicit objectives of the programme.	Assessment of the proportion of total benefits from the programme that are associated with adaptation and mitigation, as compared to other types of benefits (economic, social and environmental). This is based on comparing the benefits that a programme delivers if there is no CC (i.e. the development benefits do not change, and adaptation/mitigation has no value) with the benefits if CC does happen (i.e. the benefits increase (or decrease for maladaptation) and reductions in Greenhouse Gas (GHG) emissions have a value).
Weights Values	0-100%. Typically, bands or ranges are applied. For instance, CPEIRs apply three categories of weighting: 75-100% where CC is a primary objective of the spending programme; 25-75% where it is one of a mix of objectives; 25% or less where CC is a secondary or significant implicit objective.	0-33%. 0% indicates adaptation and/or mitigation make no contribution to benefits; 33% indicates adaptation and/or mitigation make a substantial contribution to benefits and thus CC is highly relevant to the programme's results. In a few cases, where the programme is specifically addressing CC (such as adaptation research), there may be a CC% score of 100%.
How it is derived	Values for objectives-based CC relevance can be derived through a review project objectives, where they are clearly specified and readily. Where project objectives are not clearly indicated, a budget manager, or someone closely acquainted with the project can make a judgement.	For larger programmes, and where data is available, investment in a cost-benefit analysis (CBA) approach may be justified (where benefits are converted into monetary value). Some countries will already conduct CBA as part of their routine impact assessment process (that is, the system for estimating and comparing the likely impact of competing spending proposals). Where cost-benefit analysis is commonly applied to budget lines, programmes or expenditures, introducing CC considerations to that process will likely only add a day or two for capturing CC relevance as the calculation is easily added on to CBAs. In cases where evidence is limited, qualitative methods such as participatory appraisal and expert opinion may be more appropriate. This should take the form of Multi-Criteria Analysis (MCA) where the relative importance of different categories is assessed in a subjective, but structured manner.
Usage	Used in Climate Public Expenditure and Institutional Reviews (CPEIRs): It has been applied in a large number of countries in the	Championed by ACT and UNDP (see table above). It has been applied by the Governments of Afghanistan, and in Indian states with ACT

	Objectives-based	Benefits-based
	South Asia region including Bangladesh, Nepal, Pakistan, Philippines, and Thailand. A variation of the objectives-based approach is also used in the OECD ODA database, in the form of CC markers. The latter is a vital first step to distinguish and track CC finance committed under UNFCCC from ODA.	support, as described below. Additionally this approach is also increasingly being applied by UNDP in Cambodia, Indonesia and in Thailand (in its 2014/15 CC benefit Analysis) (UNDP, 2016).
Advantages	Intuitive and simple: it can be applied by anyone with access to project documents and does not demand high levels of CC knowledge, only adequate guidance on the scoring methodology. Amenable to relatively low cost, rapid roll-out across Government.	Rigorous methodology, and less vulnerable to manipulation.
Limitations	Highly subjective, objectives can be interpreted in different ways. Vulnerable to “green washing” (i.e. inflating claims of CC relevance in order to gain access to climate funds) (UNDP 2016).	More demanding in terms of time and capacity (particularly in its more rigorous CBA form). May need to rely on external expertise for its application as government capacity is developed. Despite the aforementioned rigour, there remains a degree of subjectivity in the estimation of the future stream of benefits from spending.

ACT has adopted various methodologies to support governments define benefits-based CC% scores. These are based on different entry points and data availability, as summarised below:

Table 3: Methodology for Calculating Benefits-Based CC relevance

State	
Assam	CC% were applied to an analysis of the State Action Plan on Climate Change (SAPCC) and the state budget, using various approaches including Cost-Benefit Analysis (CBA) for major investments, and Multi-Criteria Analysis (MCA) through a mix of participatory appraisal (for local projects) and expert opinion (for larger or more technical programmes) (ACT 2015b).
Bihar	Actual expenditures were reviewed and a CC% score assigned, initially according to the benchmark classification table. This provisional classification was then refined by an expert in CC vulnerability who was familiar with some of the activities (ACT 2016d). This was done in order to assess the level of existing expenditure on climate change and then in a second step describe the consistency of the Bihar State Action Plan with the existing development planning and budgeting practices in the state.
Chhattisgarh	Estimates of CC% were made for CC-related budget items, supported by a rapid assessment where necessary (ACT 2016e) in order to provide an idea of the spending dedicated to CC in the state.
Kerala	The expenditures were weighted using values in the standard values with the expectation that these would later be refined in discussion with programme managers (ACT, 2015c).
Maharashtra	The costs and benefits related to 14 priority actions in the SAPCC were assessed. CC% scores for 13 actions were calculated through a first rapid assessment. For 5 actions a more detailed CBA has been produced to help the government identify priority actions for implementation (ACT 2016c).
Afghanistan	The operating budget, the development budget and off-budget projects financed by development partners were analysed. Each line item and project were scored for CC% individually, based on the ranges provided in the South and South East Asia benchmark values (ACT 2016f). The main purpose of conducting this analysis is to help establish a framework within which project appraisal can accommodate the implications of CC, so that results can be compared with a default yardstick and can be aggregated to help government manage the total response to CC.

### 1. c. Budget Tracking Methodologies

As part of the financing frameworks, spending – whether in the form of expenditure or budgets – has to be tracked and assessed for its climate relevance.

Having selected a weighting system to capture variation in climate change relevance of expenditures (see 1.b *Estimating Climate Change Relevance (CC%)*), there are a number of options around methodologies for budget tracking, each of which can potentially be teamed with either weighting system (benefits- or objectives-based) described above. This section

addresses the three most commonly employed in the climate change field: budget analyses (of the sort employed by ACT for financing frameworks), public expenditure reviews (in the form of CPEIRs), and budget tagging systems.

### Budgetary Analyses

Budgetary analyses may be the most common approach for tracking expenditures on climate change. Typically limited to government on-budget expenditure only, budgetary analyses involve defining relevant sectors, and reviewing detailed budget reports from those sectors to identify climate change relevant budget lines. Allocation or expenditure information for those budget lines is recorded, at the aggregate level and possibly across different dimensions of the budget (for example, broken down by economic classification, which distinguishes between salaries, operating and capital expenditures). The expenditure is then weighted, using one of the methodologies identified above (see table 2). It usually covers budget allocations as well as actual expenditure to estimate execution rates (actual expenditure as a percentage of allocated expenditure) and captures both recurrent and capital expenditure. Budgetary analyses enable trend assessments over a single year or multi-year term.

ACT has supported climate change budgetary analyses in the context of a broader package of financing framework reforms in four states in India. Indeed as noted above, it is typically seen as an initial step in the introduction of FFRG in order to gauge the scale of the government's existing response to climate change. Broadly speaking, ACT's approach to budgetary analysis in the Indian states has typically begun with a review of the entire budget and the selection of those departments deemed likely to make contribution towards climate change adaptation/mitigation. Then, for each of these departments, major head codes in the budget are reviewed and those that might be relevant are tabulated. Where major heads contained a range of different activities, the analysis considered the details of these activities by examining detail down to minor head level (i.e. for programmes or schemes). The analysis encompasses state resources and national government schemes. After these budget lines were identified, climate change relevance weightings were applied using the benefits-based approach described in the prior section.

The number and value of qualifying budget lines identified through this process has varied, as detailed below.

Table 4: Budget and Expenditure Data Analysed by ACT

State	Budget data covered	Number of budget lines identified	Weighted value of budget lines identified
Assam	Actual expenditure in 2013/14; revised budget in 2014/15; budget in 2015/16	578	USD 324 mm (2015/16)
Kerala	Actual expenditure in 2013/14; revised budget in 2014/15; budget in 2015/16	284	USD 99 (2015/16)
Bihar	Actual expenditure for 2011/12, 2012/13 and 2013/14	787	USD 147mm (2013/14)
Chhattisgarh	Actual expenditure for 2011/12, 2012/13 and 2013/14	432	USD 165 (2013/14)
Afghanistan	Actual expenditure for 2013,	26 (operating) +	USD 175m (2015)

	2014, 2015	1027 (development)	
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Sources: ACT 2015b, ACT, 2015c, ACT 2016d, ACT 2016e, ACT 2016f.

There are some notable advantages to using budgetary analyses for resource tracking:

It is a comparatively light touch exercise, requiring rudimentary understanding of public finances. This means government employees are well positioned and often best placed to undertake the analysis, thereby supporting ownership and sustainability.

It is relatively quick (an initial budget review could be completed in 1-2 days, although the decisions around relevance weightings may take longer) and can be done at low cost, and as such could be repeated on a frequent basis (such as annually, as part of budget review processes).

Regularity and timeliness is an important facet of resource tracking exercises, as the results should be made available to guide decision-makers and legislators provided information to hold the decision makers accountable.

However, the budgetary analysis presents a number of limitations:

It is fully reliant on the robustness of the underlying public financial management system, and in particular requires the timely publication of budget data, which is sufficiently disaggregated. Sufficiently disaggregated would ideally mean that the data is disaggregated to an adaptation programme level that resembles actions in a national adaptation plan and/or to the level of detail required to identify climate change relevant expenditures. In practice, expenditure data are rarely disaggregated to the same level of detail as might appear in a national climate change plan. For example, spending may only be presented by a ministry, when the analysis will require information by programme and project.

Furthermore, on its own, a budgetary analysis will only detail *how much* money is allocated and spent on climate change, but not *how* it is allocated and spent (that is, the difference between a budget and expenditures), i.e. it doesn't comment on the efficacy of planning and budgeting procedures for climate change.

At the same time, a budgetary analysis will generally not assess the composition of expenditure against a set of desired outputs or policy objectives. It will reveal how much is being spent, and in which sectors, but on its own, a budget analysis will not compare this to a climate change policy of plan. This can be done as an additional exercise; under ACT-supported FFRG budget analyses are often compared to the commitments of climate change action plan, as was done in Chhattisgarh (ACT,2016e), to identify areas of over commitment or under spending. Moreover, the application of a benefits-based weighting system (as described previously) can, for instance, indicate the spending on adaptation.

### Climate Public Expenditure and Institutional Reviews (CPEIRs)

CPEIRs have been spearheaded by UNDP since 2011, and are also conducted with the support of Overseas Development Institute (ODI), World Bank, the Pacific Forum Secretariat and the *Gesellschaft fuer Internationale Zusammenarbeit* (GIZ) (UNDP, 2015a). The methodology borrows heavily from public expenditure reviews (PERs) and public expenditure and institutional reviews (PEIRs), elaborated by the World Bank.

It is important to recognise that budget tracking under a CPEIR is part of a broader exercise. It is one of three pillars of analysis, alongside, climate change related policies and programmes analysis and an analysis of institutional coordination arrangements for climate change. CPEIRs analyse budgetary allocations and expenditures related to climate change

for a number of years (typically three). They cover the capital and recurrent budgets, of government and external (donor) funders, and can capture both on-budget and off-budget expenditures, such as extra-budgetary climate funds. They make use of existing reporting systems, including data generated from a government's financial management information system. The tracking process under a CPEIR involves identifying relevant expenditure codes across the entire government from the chart of accounts, complemented with interviews of key government officials and donor organisations. Weightings are then applied to expenditures, typically (but not always) using the objectives-based methodology set out above (ODI and UNDP, 2012, UNDP (2015a), UNDP (2015 b)).

As with public expenditure reviews in general, CPEIRs are conducted in relation to an existing policy. That is, they compare expenditure levels and patterns against an existing adaptation/ mitigation policy and thus provide an indication of the resource levels required, as well as gaps, to finance their national response to climate change.

CPEIRs have spread quite rapidly since they were introduced in 2011, and have been conducted in over 20 countries to date. In addition, CPEIRs have been conducted at sub-regional and even local level (UNDP 2015a). Their rollout does appear to be on the decline however, with a recent stock take report identifying only one CPEIR in 2016 (Kiribati) (UNDP, 2016). In a number of countries, CPEIRs have been used as a preparatory step before a country embarks on a full financing framework. UNDP guidelines state that

*“in reviewing national policy landscapes, institutional arrangements, and financial resources (both domestic and international) to achieve climate policy objectives at national and sub-national levels, it is also clear that conducting a CPEIR represents the ideal first step for countries in the process of developing a more comprehensive Climate Change Financing Framework (CCFF)” (UNDP, 2015 b, p.3).*

Financial tracking within a CPEIR framework offers a number of advantages:

- Complementary pillars of analysis enable the CPEIR to pose recommendations not only concerning levels and composition of expenditures, but also for improving governance of climate change for example how the budget process and regulatory instruments can be adapted to address climate change more effectively.
- This being a standardised methodology, data is comparable cross-country, and an online database of aggregated CPEIR data, facilitates cross-country analysis. Questions should be raised however around the robustness of international comparisons, given the subjectivity of the application of climate change relevance weights.
- Indicates the adequacy of the level of effort against the framework of an existing climate change policy or action plan.

However, it also brings some drawbacks:

The fact that a CPEIR tracking is part of a broader exercise also has implications for the cost and duration of the exercise. Typically, a CPEIR takes 3 months to complete, requires specialist technical expertise, and costs circa USD150000 (UNDP (2015 a, 2015 b)). This means they are not amenable to integration into government planning and budgeting processes, and in practice are not carried out very often (indeed the authors are unaware of any countries where CPEIR has been conducted more than once, with the exception of Pakistan's federal and provincial reviews).

Similar, to budgetary analyses, CPEIRs are reliant on quality, detail and timeliness of budget data. Indeed, a lack of disaggregated expenditure data means most CPEIRs have focused on budget allocations, which is likely to lead to an overestimation of climate change spending (UNDP, 2015).

CPEIRs differ from FFRGs in two important aspects: (i) most of the CPEIRs done so far have applied an objective-based approach to climate change relevance rather than a benefits-based approach which ACT has pursued; and (ii) CPEIRs are backward-looking and do not include future financing scenarios (see 4. *Climate Adaptation Future Financing Scenarios*).

### Budget Tagging

Institutionalised budget tags have recently emerged as an alternative tool for climate change expenditure identification and trend monitoring. They work by flagging budget codes which are relevant to climate change adaptation/mitigation on the government's electronic financial management system. Once the relevant budget codes have been tagged, reports can be generated to show how much the government is spending on climate change. It is therefore an automated means of tracking expenditure on climate change, which can potentially be fully integrated into the public finance management system. Because the budget tag is part of the government's budget system, it usually only covers on-budget, government expenditure. The scope of the tag can vary (covering the recurrent or capital expenditure, or ideally both) (UNDP, 2015 c). A weighting process can be integrated within the tagging system to differentiate between different levels of climate change relevance in the tagged expenditures. When budget tagging is weighted in this way, it is usually called "budget scoring." In theory, either approach for weighting – objectives-based or benefits-based – could be used, but most budget tags to date have used the objectives-based approach.

Budget tagging and budget scoring is sometimes referred to as the catch-all term "budget coding." This term has purposefully not been used in this paper because it is easy to confuse with the term "budget code." Introducing a climate change budget code is a very different thing to climate change budget scoring or tagging. Budget scoring seeks to identify the extent to which climate change is mainstreamed throughout the government budget, whereas establishing a budget code means introducing a new line in the budget which is earmarked specifically for climate change purposes.

Country experience of climate budget tagging is relatively slim. In Nepal, the National Planning Commission introduced the climate tagging 2013/14 following a recommendation of the CPEIR. It adopts an objectives-based weighting system, which differentiates between three categories (high, medium and low relevance). It was initially manually done, but is now a fully incorporated climate tag to the budget information system (UNDP, 2015 c). In the Philippines, also following a CPEIR, a framework for the Climate Change Expenditure Tagging (CCET) was introduced in 2015 wherein every programme/activity/project aimed at climate adaptation and mitigation is tagged. Relevant expenditures are tagged based on their objectives; the proportion of climate relevant expenditure is subjectively estimated by policy managers. It was initially introduced at the national level but has since been expanded to the local level. The tag is fully on-line and computerised, integrated to the existing information system, which already incorporates other tags (UNDP 2016, UNDP 2015c). In Indonesia, the Ministry of Finance developed a budget tagging system in 2014 in key ministries (Low Emission Budget Tagging and Scoring System – LESS). LESS has also been implemented in three central provinces to pilot mitigation expenditure tagging at the local

level. It is partly electronically and partly manually tagged by the ministry of finance (*UNDP, 2015 c*).

To date, ACT has not supported climate change tagging/scoring. However, there are plans to do so in Assam and Afghanistan, using benefits-based weightings.

There are some clear advantages of climate tagging:

- Being applied as part of normal budget preparation processes and being integrated into the government financial management system, supports government ownership and sustainability. Ensuring full buy-in from the ministry of finance is critical to the utility of a budget tag/score; however, line agencies also need training and guidance, as they are likely to be the ones to apply it to budget lines. The complexity of this training will depend primarily on the weighting system used; the actual application of the score should be straightforward to integrate into standard budget submission processes.
- Once set up, a budget tag can produce real time reports at the press of a button.
- A budget tag can encompass the full budget cycle; it only needs be applied once (at the proposed budget stage), and it will be possible to track tagged budget lines all the way through the budget cycle, covering disbursement, expenditures and audited expenditures. This enables more precise identification of weaknesses in the climate budgeting cycle.
- Whatever the expenditure tracking methodology, it should be recognised that unless the information resulting from the tag, analysis, or review is used to inform climate change policy, planning or budgeting, or to strengthen accountability around climate change commitments, it will be consigned to an academic exercise of limited operational value. An example of a pathway to inform climate change policy would be identifying (sub-) sectors that have low levels of adaptation expenditure despite high forecasted economic L&D to those sectors and subsequently re-focusing expenditure. An example of strengthening accountability around climate change commitments would be use of the tag, analysis, or review to monitor and evaluate progress on a country's NDCs. Of course, this risk also exists for other tracking exercises. But with CPEIRs and financing frameworks the risk may be less apparent since they include detailed specific actionable recommendations for improving the government's planning and budgeting for climate change. In contrast, budget tags provide the raw data to enable similar recommendations, but this often requires additional analysis.
- Whatever budget tracking methodology is used, it is vital that it is linked formally to the planning processes to feed the decision-making process. A summary of the characteristics of the three tracking methodologies is provided in the table below. The next chapter relates to methodologies for estimating patterns of climate change loss and damage, which is a critical factor for analysing whether climate change expenditures have been strategically allocated.

Table 5: Comparison of different expenditure tracking methodologies

	Budgetary Analysis	Public Expenditure Review	Budget Tagging
Funding sources	Government, on-budget	Government and external (donor), on- and off-budget	Government, on-budget
Classification of expenditure covered	Allocations plus actual expenditures where available	Allocations plus actual expenditures where available	Potentially captures transactions across the cycle, from planned allocations, to approved allocations, releases, expenditures, and audited expenditures
Summary of the process	Relevant sectors defined Review of detailed budget reports from those sectors to identify climate change relevant budget lines Tabulating expenditures/allocations against relevant budget lines at the aggregate level and across different dimensions of the budget. The expenditure is then weighted, using either methodology	Identification of relevant expenditure codes in the Chart of accounts Interviews of key government officials and donor organisations Weightings are applied, typically using the objectives-based methodology set out above. Expenditure levels and patterns compared against an existing CC policy Accompanied by complementary analyses of CC related programmes & of CC institutional coordination arrangements	Budget codes which are relevant to climate change adaptation/mitigation are flagged on the Government's electronic financial management system Reports are generated which show how much the government spends on CC CC relevance weightings can be captured in the tags ("scores"), usually using the objectives-based approach
Advantages	Light touch exercise, easily applied by government employees Quick (1-2 days,) and low cost, so as to be repeated on a frequent basis (such as annually, as part of budget review processes)	Findings relate to governance of CC, as well as levels and composition of expenditures Standardised methodology, comparable cross-country. Indicates adequacy of effort against an existing CC policy or action plan	Fully integrated in government systems and processes; supports government ownership and sustainability Once set up, a budget tag can produce real time reports at the press of a button A budget tag can encompass the full budget cycle
Limitations	Reliant on timely publication of budget data which is sufficiently disaggregated Does not reveal the	CPEIRS are time consuming (take 3 months to complete), require specialist technical expertise, and are costly. This means they are not amenable	Does not assess the composition of expenditure against a set of desired outputs or policy objectives

	<p>efficacy of planning and budgeting procedures for CC</p> <p>Unless additional work is done (e.g. benefits-based weighting), does not assess the composition of expenditure against a set of desired outputs or policy objectives</p>	<p>to integration into government planning and budgeting processes</p> <p>Reliant on quality, detail and timeliness of budget data</p>	
Uses	ACT Financing Frameworks	CPEIRs	Governments' & donors' electronic financial management system

## 2. Economic Losses & Damages

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### Losses & Damages

At the core of FFRGs is the computation of economic L&D estimates, which measure the economic impact of climate change on the GDP in the mid and long term.<sup>1</sup> This takes into account the exposure of the domestic product and its sensitivity to climate change.<sup>2</sup> There is broad consensus that climate risks and the impact of climate change are expected to grow significantly and incrementally in the coming decades: most financing frameworks estimate that GDP growth will be 3% to 5% lower by 2050 (*Asian Development Bank, 2013*). Therefore, measuring economic L&D is important when planning and budgeting for services to better understand the adaptation needs and the adaptation gap and plan a response to climate change. Other studies suggest an even higher economic impact of climate change due to its potential to affect the engines of economic growth and generate compounded or year-on-year effects (*ACT, 2017*).

- The impact of economic L&D varies across countries/regions/states based on:
- Climate Change Exposure: This is based on the geographical location, the topography and the social composition of a state, country or region: Flood plain and coastal areas are generally more exposed to climate change for example. Similarly, lower income households are more vulnerable to climate change than higher income households.<sup>3</sup>
- Sectorial composition of an economy: Climate change has a higher effect on sectors such as agriculture, fisheries, urban infrastructure and health. The extent of economic L&D by sector is calculated using various methodologies which are summarised below. The estimation of economic L&D on the economy as a whole is conducted by multiplying the average sectorial impact with the sectorial share and an adjustment factor. This is based on the exposure of the location to different risks.

Estimates for economic L&D in the literature thus depend on a mixture of the exposure of an economy, the sectorial composition, the quality of data and different methodologies that might be used.

### Review of Existing Economic L&D Computation Methodologies

There are broad and constantly evolving methodologies to calculate economic L&D. Note that modelling approaches towards estimating the impact of climate change on the GDP typically include three levels of modelling: 1) modelling climate change impacts on

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<sup>1</sup> Any analysis that measures this impact must measure in a first step the increases in temperature and weather variability that CC will have in a region or country; then the impact of said increases on outputs of the economy (for example, increases in yields of some crops, decreases/outfalls of others; destruction of infrastructure through floods; decreased worker productivity due to heat waves), and then the subsequent impact of the effect on outputs on overall GDP.

<sup>2</sup> Exposure measures the actual CC in the location; sensitivity measures the impact of the CC on bio-physical and socio-economic systems, without adaptation. Care needs to be taken to avoid double counting with the above L&D.

<sup>3</sup> Adjustments due to exposure to CC are included in L&D estimates through a "sectorial adjustment factor", which varies from 0 to 2. A factor of 1 signifies that there is no evidence that the net impact of CC will be different to the average for a country or region

temperature and precipitation under different emissions scenarios and in some cases analysis of different climate models (i.e. ensemble models), 2) analysis of climate impacts on sectors, such as the effect of changes in temperature and precipitation on yields of specific crops or the effects of changes in temperature and precipitation on hydrology and hydropower generation potential, and 3) modelling the impact of aforementioned changes on the economy or GDP growth – such as the impact of decreased wheat yields on agricultural revenue / GDP. Each of these modelling steps will have their own assumptions and ranges of uncertainty.

Currently no single framework encompasses all methodologies. These range from simple observation and accounting techniques, to more complex simulation models. Ultimately, the method used depends on data availability; as it is often the case that the required detail, the level of comparability and the number of data observations are not available.

Methodologies used to calculate economic L&D can be classified into:

1. Rapid assessments at sectorial level which make use of broad assumptions, proxies and pre-existing measures of sensitivity to climate change. For example, these techniques are used when calculating average crop yields over the last 10 years (which assumes constant technological change); climate change economic L&D in forestry (which can use a measure of CC damage on crops as a proxy) or loss of health due to climate change (which takes pre-existing sensitivity of health to CC as published by the WHO). In practice, these techniques are often used due to limited research and data availability of sector sensitivity to climate change, particularly at subnational level.
2. More elaborate vulnerability assessment techniques, particularly for sector studies. These make use of more advanced analysis, such as spatially explicit geographic information systems (GIS), as well as other calculation techniques (such as risk and hazard probability models or statistical downscaling models). Coarse-resolution climate model (GCM) simulations are an example. Although these methods provide more accurate and context specific data, they can be costly and require the input of experts to produce estimates (UNFCCC, 2005).
3. Modelling techniques which include both economic and biophysical components. When possible, general circulation models (GCMs) should be made use of. GCMs are representative of physical processes in the atmosphere, ocean, and cry sphere and land surface. GCMs, possibly in conjunction with nested regional models, have the potential to provide geographically and physically consistent estimates of regional climate change, which are required in impact analysis. Other popular methodologies used to date include Catastrophe Risk Models, which use Monte Carlo techniques to generate L&D simulations, and Integrated Assessment Models (IAMs), which make use of Computable General Equilibrium Models (CGEs) (Surmising, S. et al (2012)).<sup>4</sup> However, these models still fall short when trying to measure the vulnerability to less quantifiable effects of climate change and they require data, which is not always available. Therefore, most assessments of vulnerability to climate change do not make use of this third set of techniques.

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<sup>4</sup> These model the relationship between emissions, effects on the climate and the physical, environmental, economic and social impacts caused by climate change to identify the optimal policy response, the option that maximises the difference between benefits and costs (i.e. net benefits).

ACT has produced a range of reports that involved a wide variety of approaches to estimating economic loss and damage given data availability and cost. Overall, the approach taken has been a practical one: making use of methodologies for economic L&D based on data availability and pre-existing assessments. For example, SAPFINs for Chhattisgarh, Odisha and Bihar and the financing framework for Afghanistan include estimates of economic L&D based on a combination of simulation models, historical data (rainfall or flooding trends for example) and international evidence (for required values that do not have national estimations). However simulation models do not generally go beyond GCMs. Contrastingly, SAPFINs for Assam and Kerala rely on pre-existing international measures for vulnerability and apply these to their estimates for economic L&D. Therefore, further support to regions/countries in developing better estimates on sector level economic vulnerability assessments will be an important step towards improving the development of financing frameworks.

### 3. Adaptation Gap

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Another computation that forms part of the financing frameworks is the adaptation gap. It measures the difference between the adaptation needs (total adaptation spending required to avoid all CC economic L&D) and the adaptation supply (the actual or planned adaptation spending). A slightly different perspective of this definition can be adopted instead, which compares the projected level of climate change economic L&D with the expected reduction in this economic L&D as a result of existing and planned expenditure. The total adaptation gap can then be expressed as a monetary value (USD), as a % of GDP, as % of total loss and damage or as a % of adaptation needs. It can also be expressed in current value or as changes over time depending on the cumulative implications of climate change economic L&D and adaptation spending.

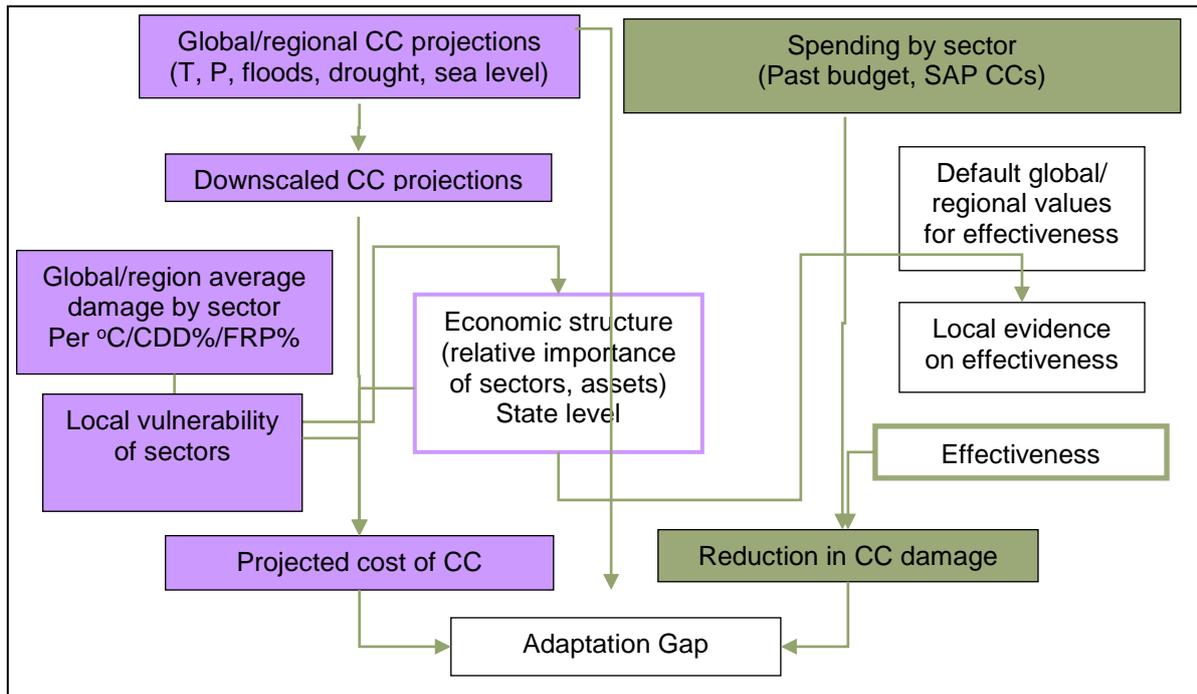
The figure below summarises the framework for calculating the adaptation gap and shows the two lines of analysis, with the assessment of projected damage/loss on the left flow and projected reduction in damage/loss on the right. This same approach can be used to calculate the adaptation gap by sector.<sup>5</sup>

Furthermore, adaptation gap estimates need to consider change over time. This involves a number of challenges. Firstly, there is a need to untangle adaptation and development benefits from adaptation actions. This can be done by weighing the adaptation benefits pursuing a benefits-based approach as outlined in 1a. Secondly, unlike most development benefits, the stream of adaptation benefits is not constant, but grows in line with the severity of climate change and consequent growth in losses averted. The cumulative impact must be considered in the calculations of adaptation benefits over time.

Figure 2: Analytical Framework for Measuring and Monitoring the Adaptation Gap

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<sup>5</sup> This level of analysis is still not sufficiently reliable to be used for policy or for monitoring, as sectoral expenditure data still has high levels of aggregation.



Notes: CDD% = % change in consecutive dry days, as a measure of the change in drought; FRP% = % change in Flood Return Period, as a measure of change in flooding; T = temperature; P = precipitation

Source: Allan, S. et al (2016)

Estimates for adaptation needs are derived from the monetary value of economic L&D. This is calculated using economic L&D methodologies, adjusted by the expected effectiveness of spending or return on investment expected or assumed in terms of loss and damage reduction.

Besides the climate change relevant expenditure (see Section 2), estimates for the adaptation supply are also based on:

- Future trends in domestic and international expenditure on climate change. These are estimated by means of financing frameworks, informed by the evidence from medium term expenditure frameworks (MTEF)<sup>6</sup> on planned expenditures in the short and medium term. These estimates can be compared with spending ambitions on national adaptation plans and other policy documents, which will typically be higher than realistic expectations.
- However, currently there is no overarching framework for assessing the relative scale of commitment to adaptation in each country and effectiveness of action. As financing frameworks and expenditure analysis continue, it will be possible to measure realistically commitment and effectiveness.

<sup>6</sup> The MTEF is annual, rolling three year-expenditure planning. It forecasts the medium-term expenditure priorities and hard budget constraints against which sector plans can be developed and refined. MTEF also contains outcome criteria for the purpose of performance monitoring. MTEF together with the annual Budget Framework Paper provides the basis for annual budget planning.

Evidence on the effectiveness of climate change spending. This is calculated by means of the reduced value in climate change economic L&D per unit of expenditure. There are a wide range of techniques used to calculate the effectiveness of adaptation spending, including participatory analysis, multi-criteria analysis (MCA) and cost benefit analysis (CBA). Theoretically, CBA is the most effective methodology to assess public spending as it directly places the cost of climate change along the cost and benefit of adaptation actions; however, in practice it is generally combined with qualitative assessments. Many of these effects are calculated using pre-existing international evidence, applied to a specific case study. To date, for Assam, Bihar, Chhattisgarh, Kerala, Maharashtra and Afghanistan's financing frameworks a benefits-based approach<sup>7</sup> has been adopted (with some using benchmark values based on regional evidence); whereas Nepal and Pakistan have used the objectives-based approach<sup>8</sup>, which typically is used in CPEIRs. Other locations where CPEIRs have been done have overwhelmingly made use of objective-based approaches (eg. Kiribati, Morocco). The Government of Odisha has used an objectives-based approach, following the Climate Change and African Political Stability Programme (CCAPSP) methodology.<sup>9</sup> Improving the understanding of how public spending effectiveness changes with climate change is important for strengthening adaptation planning in South Asia, which ACT is working on and should continue (Nicholson, K., Bhattacharya, S., & G, D. 2015).

## 4. Climate Adaptation Future Financing Scenarios

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In order to close the adaptation gap, an array of sources will have to be tapped for funding. Adaptation finance enables activities that address current and expected effects of climate change. Closing the adaptation gap will not only require governments to evaluate these investments but also to define realistic financing scenarios of likely available funding and then match these scenarios with adaptation actions. Particularly for adaptation, it is often stated that public finance alone will not suffice; most of the investment in adaptation is expected to be made by businesses and households (end-users themselves). Moreover, national sources are expected to be more important than international sources of finance.

Financing scenarios should consider the different *types* of sources and instruments, because an optimal financing option may depend on the adaptation action funded. Depending on adaptation investment needed, different climate adaptation finance sources are available. Many types of climate finance could be established given the landscape of climate change mitigation and adaptation financing. It could be broken down into sources (public and private) and instruments (as in Figure 2). A typology could also be based on how funding is raised (mandatory/voluntary); whether it is lent at market rates, at concessionary rates, or given as a grant. Adaptation finance includes both voluntary and mandatory financing. Mandatory financing can be provided through: (a) assessed national contributions; (b) international levies; or (c) obligations passed on to the private sector, as well as through a

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<sup>7</sup> This approach focuses on the proportion of total benefits from the programme that are associated with adaptation and mitigation, as compared with sustainable development. This is done by applying a climate relevance score (CC%).

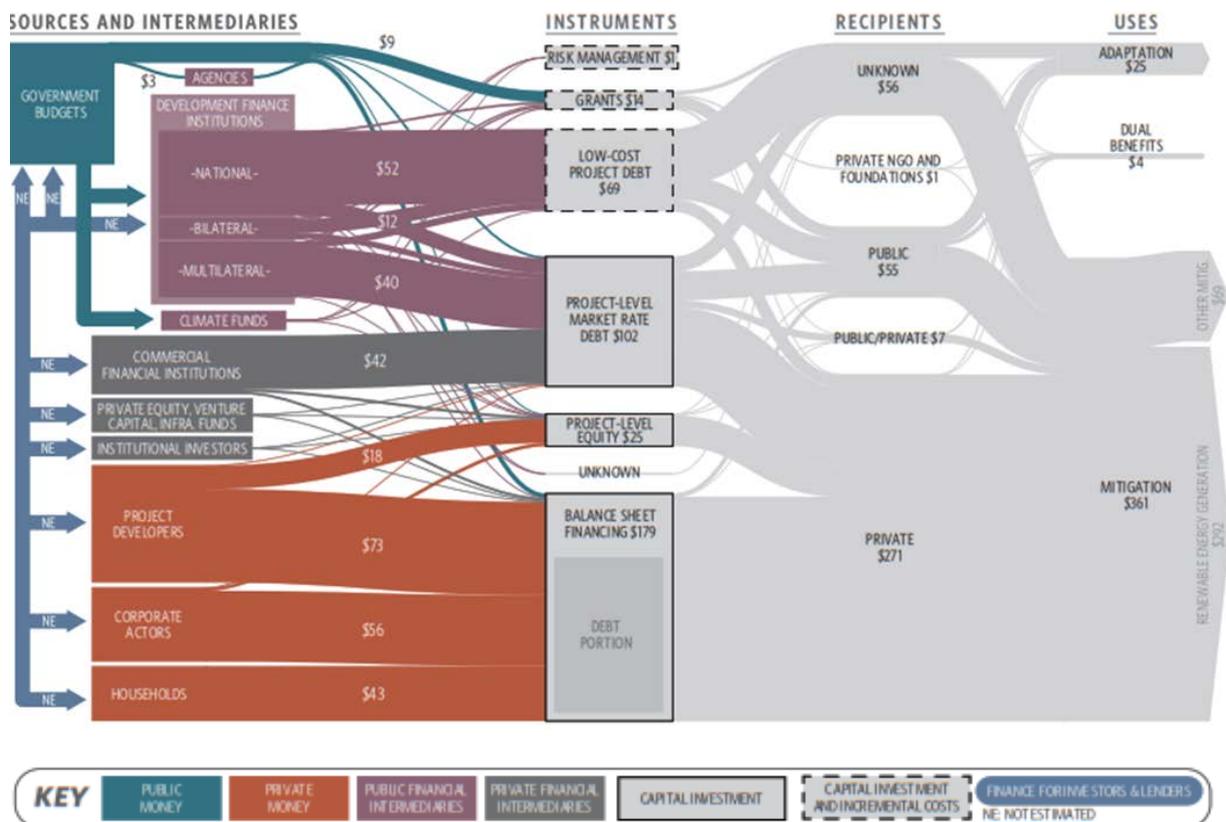
<sup>8</sup> These focus on an assessment of the extent to which CC is part of the explicit or implicit objectives of the programme.

<sup>9</sup> Under this methodology, each activity is given a code for climate relevance using a spectrum of four categories, and a score from 0-2.

combination of these (Stockholm Environment Institute, 2009). Voluntary financing of climate adaptation is market/incentive-based or – to a limited extent – philanthropic.

The Figure 3 below represents a landscape of climate finance that illustrates the climate finance flows along their life cycle for the latest year available, mostly 2014. It is a snapshot of the life cycle from sources and intermediaries to finance instruments, recipients and their uses (Climate Policy Initiative, 2016).

Figure 3: Climate Finance Landscape, 2014



Note: Details on chart: Public actors including governments, bilateral aid agencies, Climate Funds, multilateral, bilateral and national Development Finance Institutions (DFIs). Corporate actors include Non-energy corporations and manufacturers. The “household” category refers to family-level economic entities, high net-worth individuals, and their intermediaries. A common household investment would be a small-scale solar installation. CPI’s methodology has self-acknowledged accounting gaps that could have substantial implications on these figures. Source: (Climate Policy Initiative, 2016)

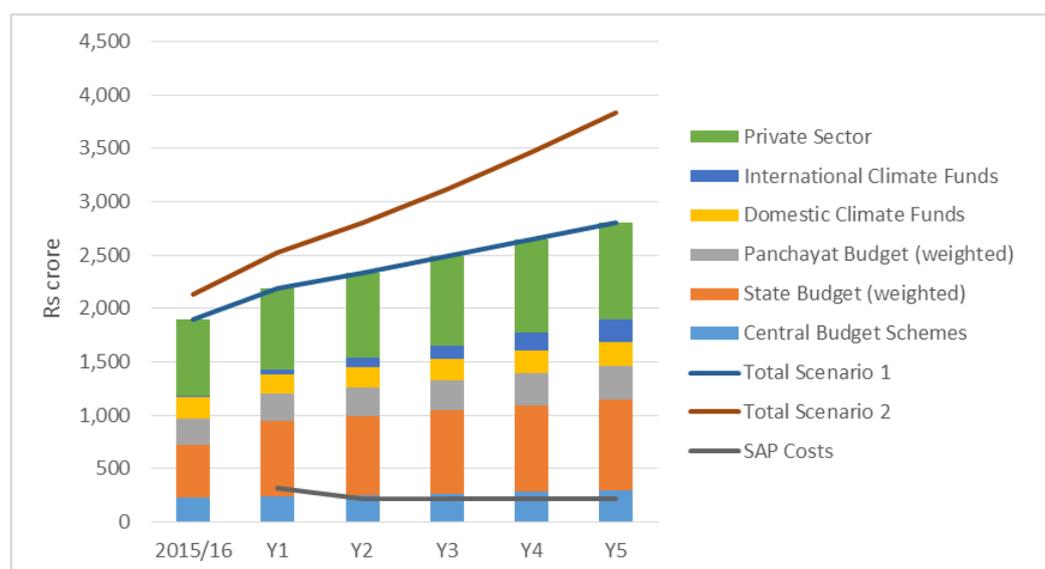
State-owned enterprise investments in CF, land use investment; Adaptation investments data remain elusive. Moreover, domestic public budget for climate-related development not captured in CPI’s report by its methodology could reach at least USD 60 billion a year (Climate Policy Initiative, 2015).

Total climate finance flows for adaptation and mitigation were USD 391 billion on average in 2015. Public climate finance was ascending compared to previous years, with contributions by governments and intermediaries reaching at least USD 148 billion as the benefits of

climate action were acknowledged. Private finance increased by nearly USD50 billion in 2014 driven mainly by new renewable energy investments – many of them in China.

It is in this landscape that adaptation finance is accumulated. How should climate finance scenarios, that is, future levels of climate finance available, be sketched? By assessing the current levels of these different sources and then extrapolating their growth into the future. To sketch future financing scenarios, some research on likely availability of future funding for climate related expenditure is required - availability within the budget, from climate funds, or the private sector. Often, projections of the likely growth in climate finance can only be made in very rough terms. It is likely that both public and private finance will grow slightly faster than the GDP as climate change becomes more obvious and governments along with private enterprise respond to the associated challenges and opportunities. For other sources, such as international climate funds, a view to their level of capitalisation and commitments to particular countries/regions is advisable when gauging the level of funding expected from them. The graph below displays the composition of sources of finance over a five year period as well as two different scenarios. This exercise also sheds light on risks in a planned funding strategy, such as over-reliance on possibly insecure sources.

Figure 4: Example of a Set of Climate Financing Scenarios



ACT’s experience in Kerala in projecting future financing scenarios as part of a financing framework is instructive. As a first step, the team linked the financing allocations of the State Action Plan (SAP), a policy document detailing the adaptation actions needed in the State, with the budgets available for Kerala. Then, both the budget and action plan figures were weighted by CC%, to facilitate comparison. They found that SAP actions were planned more in some sectors than in others. The financing frameworks aim to help government follow through this thinking to assess the extent to which some SAP actions are best funded and/or managed within the budget. The ACT team further helped describe the availability of funding from the main financing sources for the SAP, which involved matching the actions to sources available, and making assumptions about the amount of international climate finance that will be available.

## 5. Institutionalising Climate Finance to Fill the Gap

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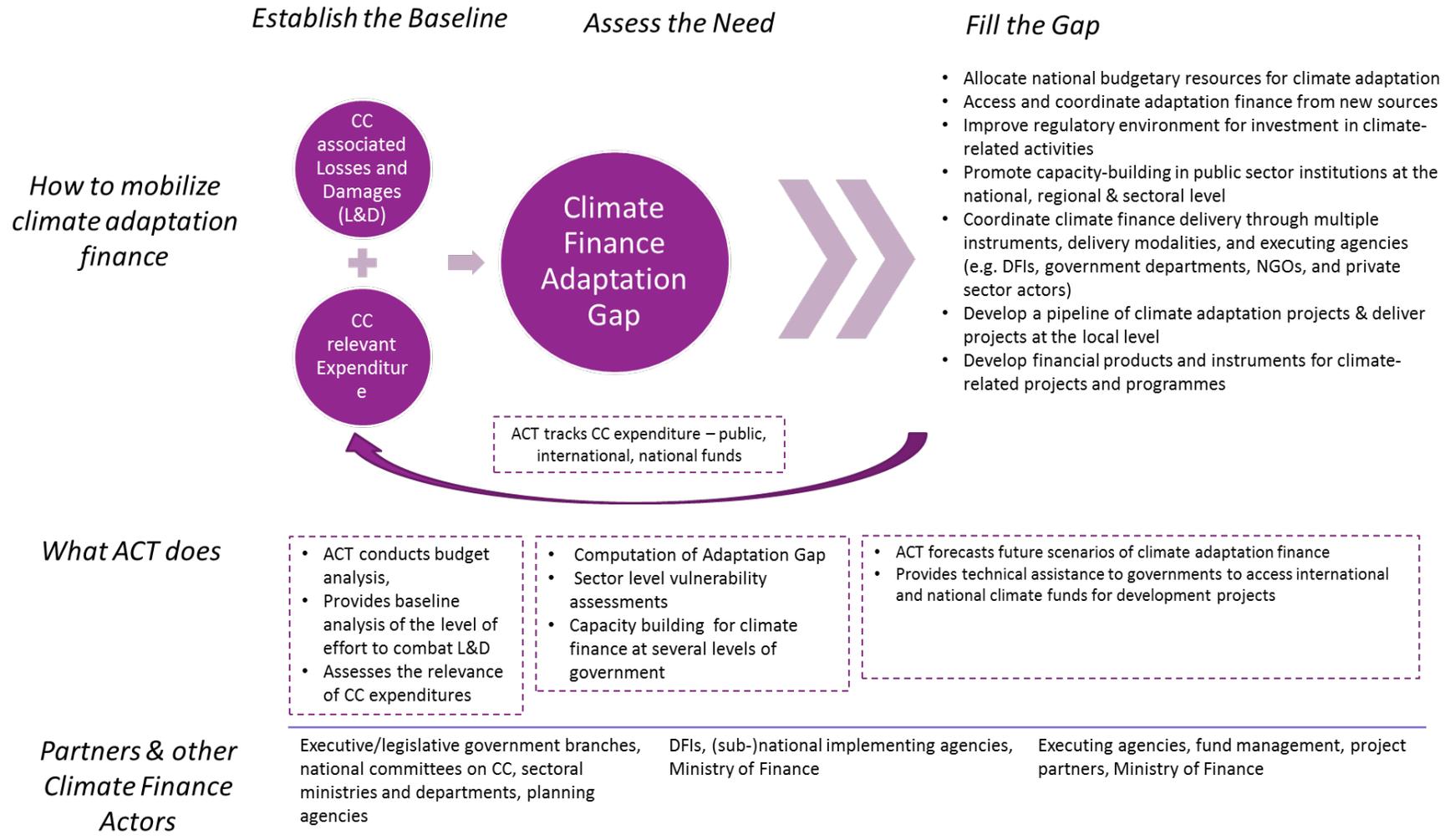
In order to fill the gap, governments will have to combine a set of actions: increase resources dedicated to climate change, re-shuffle resources to the most climate change relevant activities, and seek to access new sources for financing for CC adaptation. Mainstream climate change into budgets and planning sustainably will require anchoring the mainstreaming approach into institutions.

Apart from inadequacies of climate funds and scarce adaptation funding from budget, a challenge that countries face is weak capacity for planning for adaptation and for accessing climate finance. Varying governance and institutional barriers and enablers exist to support governments to integrate climate finance in their planning and budgeting processes and access international funds. ACT's experiences of working with state governments in India as well as with federal governments in Afghanistan, India and Pakistan highlight diverse challenges and opportunities for accessing climate finance and mainstreaming it in planning and budgeting processes (*Allan et al., 2016*). These challenges and opportunities helped identify the entry points for institutionalising climate finance within government systems and provide key lessons for practitioners, policy makers and others.

While all ACT programme locations share an overarching objective of creating more adaptive capacity, the enabling factors and underlying operational objectives vary between countries and governments. Some governments have been motivated by a desire to improve the overall efficiency of public expenditure, others by the wish to promote institutional reforms. In most countries, the possibility of raising new funds has been the enabling factor (*Nicholson, Beloe, Hodes, 2016*). This has resulted in a variety of initiatives being undertaken under the umbrella of accessing international funds and financing frameworks. It also provides an opportunity to design different approaches for prioritising actions in the climate action plans and allocating budgetary resources suiting the national circumstances of respective governments.

Using the experiences of ACT, UNDP and other actors, this section elaborates on the varying governance and institutional barriers and enablers for supporting the governments in integrating climate finance in their planning and budgeting processes and accessing it from other international funds.

Figure 5: How to Fill the Adaptation Gap



## Entry points and enabling factor

- **Aligning Climate Relevant Costs/Expenses With Development Drivers:** Identifying climate relevant costs of adaptation and development actions has revealed synergies between climate expenditure and development budgets. In Afghanistan, even though climate change financing frameworks are in initial stages, linking climate finance costs with development activities have created a positive initial momentum. ACT supported a CPEIR which identified climate related expenditure in Afghanistan's budget and provides the government a basis to request additional funds internationally. This evidence of climate expenditure has also helped ACT to further engage with the government for linking adaptation activities with development priorities of Afghanistan. In Odisha, linking the impacts of climate change on agricultural production and agriculture value chain development created the inroads for engaging government stakeholders on the issue. In Pakistan, policymakers now view the national and provincial development priorities through a climate lens and, drawing on recent success with the Green Climate Fund (GCF), are in the process of developing a project pipeline for accessing more GCF funds thereby opening access to increased financial resources.

### Accessing Climate Finance

While it will be necessary for countries to mobilise their own finances to fund adaptation actions, additional financing from national or international funds, such as India's National Adaptation Fund, the Green Climate Fund (GCF) or the Global Environment Facility (GEF) is helpful due to their flexibility and catalytic influence. In ACT, processes to help governments secure international climate finance have been seen to be effective entry-points for wider work on mainstreaming climate change in the government's financial plans and budgets.

So far, ACT has trained 533 stakeholders to access this funding. Across locations, government officials have been trained in developing proposals and in understanding modalities for accessing external climate finance. In Afghanistan, staff of the newly established Climate Finance Unit has received training on accessing and deploying international climate funds. In Pakistan, training on accessing climate finance has taken place at different levels, from Federal to Provincial. In India, five of the six state locations have engaged government officials from key departments on climate finance proposal development leading to an increase in the number of proposals for funding.

These activities have led to ACT supporting governments to secure over US\$ 127 Million from a variety of climate funds. Some successful proposals include:

- a. Odisha, India: 'Ground water recharge and its sustainable management to ensure food security and enhance resilience in vulnerable tribal areas of Odisha'. This has a total value of USD 169.39million of which USD 37.45 million has been secured from GCF and the remaining has been co-financed through the Government of Odisha and the World Bank.
- b. Pakistan: Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan that received USD 37.5 million from GCF.
- c. Assam, India: Management of Ecosystem of Kaziranga National Park by creating climate resilient livelihood for vulnerable communities through organic farming and pond-based pisciculture has received INR 24.76 from India's National Adaptation Fund (NAF). This is one of eight successful projects totalling USD 28,586 Million that ACT has supported from the NAF.

- **Choosing from different elements of financing framework to suit government needs:** Financing frameworks entail calculating potential loss and damage, reviewing past climate expenditure trends, identifying degree of climate relevance of adaptation expenditure, and allocating financial resources for climate change. It is important to pick from these different elements of the financing framework based on government capacities and needs. For example, the Kerala government already has a basic understanding of climate impacts on development and has shown good interest in the entire package of SAPFIN. This level of understanding and engagement suggests that several or all elements of the financing framework could be of interest. In Afghanistan, where understanding of climate change issues is still emerging, the CPEIR has acted as an entry point for ACT for implementing financing

frameworks in the country. ACT is also building on this work to assist the Afghan government in identifying projects for climate finance funding. Similarly, in Maharashtra the government has recently developed its State Action Plan on Climate Change (SAPCC) and has asked for analytical support in the form of cost benefit analysis and climate relevance assessment to prioritise actions for financing and implementation.

#### **Climate Finance Units (CFUs)**

ACT has provided technical and financial support for the establishment of Climate Finance Units in Afghanistan and Pakistan to support governments in accessing and managing climate finance.

These play a number of functions that include mapping available international climate finance opportunities, supporting the development of funding applications and proposals, building the capacity of line ministries to access international climate finance, monitor and report on finance accessed and mainstreaming climate change in domestic plans and policies.

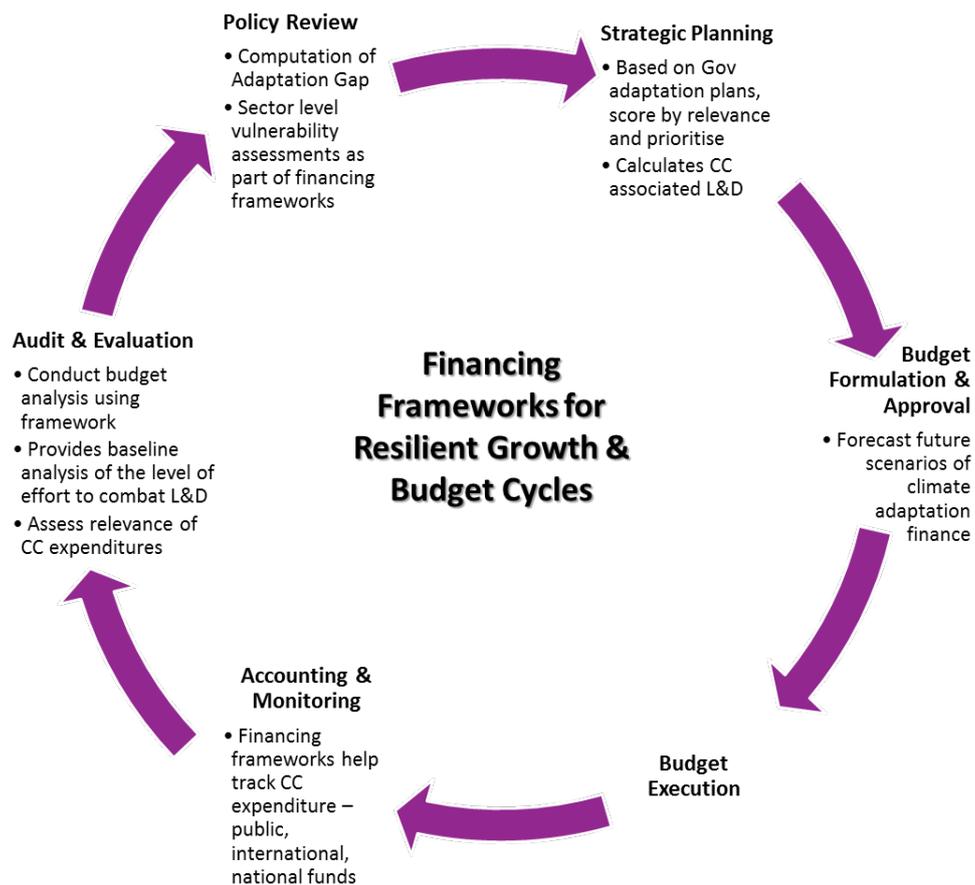
In Afghanistan, the CFU was inaugurated in February 2017 and is attached to the National Environmental Protection Agency. The Unit is currently engaged in developing a strategy to secure international climate finance for the country's National Resource Management Strategy (that was 'climate proofed' by ACT in 2016). This apart, the CFU is engaging with all relevant line ministries to enhance their understanding of international climate finance and to identify priority projects that may be eligible for funding. The CFU will also be supporting the roll out of the Financing Framework for Resilient Growth with the Ministry of Finance.

- **Institutional Leadership:** Institutional leadership has acted as an important factor for integrating climate finance in budgetary processes. Depending on country, Ministries of Finance (given their central role in financial allocations), Ministries of Planning (which have control over the development budget where this is separated from the recurrent budget), or Ministries of Environment and Climate Change (which is the primary source of knowledge on climate change where it exists) each have a unique role in anchoring the institutionalising reforms for climate finance within a country. In Afghanistan, the Ministry of Finance leads on climate change budgeting and the National Environment Protection Agency (the environmental policy making and regulatory institution in Afghanistan) since June, 2016 is establishing the Climate Finance Unit (CFU) for accessing international climate funds.
- **Climate Change Champions:** Identifying the right stakeholders within government can catalyse efforts of mainstreaming climate change finance within government institutions, plans and budgets. Government champions with ability to develop the inter-linkages between climate change and development have played an important role in internalising the climate agenda within government planning and budgeting processes. Furthermore, increased access to international climate finance has also contributed in increasing

interest levels of progressive government officials. In India, where access to politicians can be challenging, advocacy work has focused on bureaucrats, who are establishing the overlaps between climate adaptation and state development plans. The need to balance messages on loss and damage of climate change and share positive prospects derived from success stories of climate adaptation finance interventions have helped to convince government officials to take actions on climate change. In Pakistan, the Prime Minister’s advisor on climate change is helping to build the political leadership and coordinating as a climate champion between Ministry of Finance, Ministry of Climate Change and Prime Minister’s office.

The framework can be applied across the budget cycle as illustrated in Figure 6.

Figure 6: Financing Frameworks for Resilient Growth & Budget Cycles



## Key Lessons from Applying Financing Frameworks

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Over the course of its work on mainstreaming climate change across budgets and development of several financing frameworks, several key lessons on the use of financing frameworks have emerged through the ACT programme:

- Initial analysis reveals that adaptation requirements are high and that funding is going to be a stumbling block in realising national adaptation goals. Thus, it is vital to identify various funding sources and start developing strategies to target them based on region-specific needs at a very early stage. Different sources fund different kinds of activities, and it is worthwhile to examine which programmes in climate change action plans should be funded with what resources.
- Climate change impacts (whether in the form of immediate weather variability or long-term degradation of slow onset impacts) are more easily understood when translated into economic cost. FFRGs, and the computation of the adaptation gap, present adaptation investments as potential for economic growth in every year. Disaggregating this by sector makes it easily translatable into budgets – and into appraisals of new competing adaptation spending options. Beyond the projection of growth trajectory, the economic cost of climate change can also be put in terms of fiscal terms or discretionary budget that would be tied up rather than available for other purposes.
- Countries will have to rely on their own fiscal resources to fund adaptation. While donor funding can be an effective entry point to work with governments and possibly a catalyst of other funding, it will make only a marginal contribution to what is needed financially to fill the adaptation gap. As adaptation finance is more likely to be publicly funded than privately, this reinforces a need to focus on public budgets. Adaptation finance provided to developing countries accounted for about 25% of the total climate change finance. As the private sector is more likely focused on profitable mitigation actions (largely in the energy sector) along with multilateral development banks that fund mostly mitigation actions (80:20 split) as well, adaptation action funding remains contingent on public funding; although there has been a slight increase in the proportion of adaptation finance from climate funds and bilateral concessional channels. Given that adaptation needs are high and that governments will have to fund most of them themselves, the need for mainstreaming climate change into planning at this level becomes evident.
- Availability of timely and sufficiently available budget data is a challenge in all budgets tagging or scoring. Governments may be reluctant to share disaggregated budget data or information because it is sensitive or preliminary.
- Institutional strengthening is paramount: Rather than merely focusing on finance volumes (which non-policymakers are unlikely to influence), ACT focuses on broader issues related to domestic capacity to integrate climate change into development processes. In Afghanistan and Pakistan, Climate Finance Units (CFUs) have been formed and its members trained to form a community of practise on climate finance. In Odisha and Pakistan, this included training to apply for large amounts of GCF funding.

- Studies show that besides lack of finance, some issues that often hamper the effectiveness of existing CF include: limited availability of and access to climate information; lack of coherent policies, legal and regulatory frameworks and budget; or a lack of clear priority actions to address climate change identified through transparent multi-stakeholder processes (*UNFCCC, 2016; Nakhooda & Norman, 2014*). It is important to strengthen capacities of national institutions to plan, budget, track, and monitor climate finance. This holds true in particular for the adoption and continued use of the financing frameworks as they are often perceived as technical and complex. Although the FFRG are conceptually intuitive and simply introduce climate change into the key elements of routine development planning, the practical application can be challenging.
- Achieving the right balance between mainstreaming and concentration when assigning responsibility for adaptation within government. Planning and budgeting is an inherently sectorial process. Budgets are compiled, appropriated and executed by ministries, departments and agencies, through an organisational landscape of government that tends to be highly static.<sup>10</sup> In contrast, climate change is a cross-cutting concern; its effects are registered across a broad range of sectors and the responsibility for adaptation which is typically a by-product of development programmes- is similarly diffused throughout government. There is a challenge, therefore, in reconciling a cross-cutting priority with the organisational structure of a budget.

This issue is not unique to climate change. Governments and donors have grappled with other cross-cutting concerns within the budget process, including: gender, HIV/AIDS, environmental issues, nutrition and other cross-cutting concerns through the budget process. Where mainstreaming of these topics was attempted, it proved difficult though to extend mainstreaming beyond the strategic planning stage of the budget cycle, and challenging to integrate it into budget formulation, execution, accounting and reporting. In some instances, mainstreaming amounted to little more than a box-ticking exercise in plans, and had no real impact on how funds were being spent. Another lesson that has emerged is that to avoid responsibility of everyone' from becoming the 'responsibility of no-one', it is necessary to secure the leadership of an entity with sufficient leverage and influence to ensure sensitisation and compliance. In many countries, the ministry responsible for this particular topic (Ministry for Women for gender; Social Ministry for nutrition, etc.) does not possess this leverage.

Selecting the right partner institution to lead this mainstreaming process is critical, and usually means reaching out to less traditional counterparts for climate -focused initiatives, such as the Prime Minister's Office or equivalent (typically a senior office with a coordination mandate) or the Ministry of Finance (given its responsibility for setting ceilings, developing budget guidance and reviewing agency submissions, all of which should take climate change into account). Building bridges into these institutions can take time, and involves identifying well-positioned focal individuals to champion the climate change agenda, as well as outlining clear indications of the potential threat to economic growth.

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<sup>10</sup> Even in the context of advanced programme budgeting reforms, where budgets are structured into bundles of services with common objectives, the clustering of activities into programmes tends to align with the organisation of government and to reflect the assignment of legal mandates

Political economy analysis can help in identifying these individuals and their motivations.

- Engaging with the political-economy of climate finance policy and governance contexts is crucial to ACT's success. First, ACT actively maps 'key influencers' across each governance context in which it is operational, to determine who will be crucial in helping ACT achieve its goals on accessing and mainstreaming climate finance. Thereafter, bespoke and contextually tailored engagement strategies are deployed to secure the support of these key influencers. Second, ACT then undertakes a programme wide political-economy context assessment exercise on an annual basis. This allows the programme to ascertain any shifts in the political or governance contexts in the nine locations in which it is operational, permitting course correction through adaptive management. Third, ACT staff has found that it is vitally important to align with prevailing policy narratives in different governance contexts to secure action on climate finance. This means that many times the initial conversations between ACT and different governments are not focused on climate change at all but on economic growth, disaster risk reduction, private sector engagement or other such existing local priorities of the government. Fourth, ACT's work on climate finance has received traction as it actively desists from imposing external priorities on governments and is, instead focussed on generating demand for support on accessing and managing climate finance from within. This is made possible by the ACT staff developing strong relationships of trust with governments, which is helped by the fact that the programme has permanent staff and offices in all the locations in which it is active. This is also made possible through the institution of formal flexible finance streams such as 'Rapid Response Mechanism' that allows ACT to invest in small, strategic tasks that are not part of location strategies but have been requested by governments and will be crucial to achieving programme objectives.
- Apply the financing framework or parts of it only where it can meaningfully inform planning and budgeting. The purpose of the frameworks is to steer spending more effectively towards actions that build adaptive capacity and resilience. It does so by informing decisions makers on L&D, the climate change relevance of spending, availability of funding, and the like. However, where spending decisions are made ad-hoc or where information rendered by the frameworks is not expected to inform decisions on spending, they are futile.

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## Annex 1: Standard Values for the CC Relevance of Public Expenditure

	Green Development					
	Sustainable Development			Climate Change CC%		
	EC%	SO%	EV%	MI%	AD%	Total
<b>Highest CC Relevance</b>						
CC Planning, Management, Capacity,	0	0	0	100		<b>100</b>
Hydrometeorology, Early Warning	40-50	10-20	0	0	33	<b>33</b>
Livelihoods for CC Vulnerable Households	40-50	10-20	0	0	33	<b>33</b>
Coastal Protection from Sea Level Rise	0	0	0	0	100	<b>100</b>
Protection from Saline Intrusion	20-50	10-30	5-10	0	25-75	<b>25-75</b>
Irrigation and Drainage	50-70	5-20	0-5	0	10-33	<b>10-33</b>
Flood Protection/Proofing	40-50	10-20	0	0	33	<b>33</b>
Disaster Risk Reduction and Management	25-50	25-50	0-10	0	33	<b>33</b>
<b>Middle CC Relevance</b>						
Agriculture, Rural Dev, Food Security	40-50	10-20	0-10	0-5	5-20	<b>5-25</b>
Forestry Protection	5-10	5-10	60-95	5-15	0-10	<b>5-25</b>
Forest Management	20-50	5-20	30-50	5-20	5-20	<b>10-40</b>
Renewable Energy	70-90	0-10	0-10	5-20	0-5	<b>5-25</b>
Energy Efficiency	70-90	0-10	0-10	5-20	0-5	<b>5-25</b>
<b>Lower CC Relevance</b>						
Livelihoods for General Households	50-70	20-30	0	0	5-10	<b>5-10</b>
General Infrastructure (roads, urban ...)	90-99	0-10	0	0-1	1-5	<b>1-5</b>
Sanitation and Waste	20-30	20-30	50-75	0-5	5-15	<b>5-20</b>
Water Quality	50-70	20-30	0	0	5-10	<b>5-10</b>
Public Health for Climate Sensitive Diseases	30-50	30-50	0	0	5-10	<b>5-10</b>
Public Transport	60-80	10-20	5-10	1-5	0	<b>1-5</b>
<b>Uncertain</b>						
Fisheries, Aquaculture	40-50	10-20	0-10	More research needed		
Biodiversity, Wildlife, Eco-tourism	0-25	0-10	75-100	Variable/site specific		

Source: based on experience from CPEIR and financing framework work in South East and South Asia over the last 4 years.

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