

CLIMATE CHANGE PUBLIC EXPENDITURE REVIEW SOURCEBOOK

OVERVIEW

1. **The Sourcebook seeks to equip public expenditure practitioners with the background information needed to conduct public expenditure reviews on climate change.** Climate change represents one of the most important challenges facing the developing world. It is not an issue that can be addressed by environmental agencies alone. An effective response requires action across the public and private sector. Climate change should be of particular concern to central finance and planning agencies. After all, a successful response to climate change is central to their development mission. The goal is still to achieve growth and poverty reduction but to do so in a harsher, more uncertain climate and in a more sustainable manner.

2. **Public Expenditure Reviews focus attention on the policy response to climate change, the application of scarce resources and the institutional arrangements to support these policies.** This translates climate change into issues that are core responsibilities of central finance and planning agencies. Climate change shares many of the characteristics of policy issues that central finance and planning agencies are routinely called on to address. However, climate change also presents specific challenges. The Sourcebook identifies the key issues that central finance and planning agencies will need to consider and the various approaches taken in dealing with the technical, policy and institutional issues that are likely to arise in the response to climate change.

3. **This Overview provides background on the context, purpose and process of Climate Change Public Expenditure Reviews together with an overview of the key issues that they will typically have to address.** Section 1.1 provides a brief overview of climate change and its implications. Section 1.2 explains the purpose of Climate Change Expenditure Reviews. Section 1.3 provides the analytical framework for the Sourcebook and proposed for Climate Change Expenditure Reviews. Section 1.4 lays out the structure of the Sourcebook. And Section 1.5 provides some guidance on the expenditure review process. This overview recognizes that the scope, content and process for Climate Change Public Expenditure Reviews will differ between countries according to their needs. It also acknowledges that there will be differences in approach between international agencies providing support to this process. UNDP, co-sponsor of the Sourcebook with the World Bank, for instance, uses the term Climate Public Expenditure and Institutional Review to describe this analytical work in order to further emphasize the role of institutions.

CONTEXT

4. **The 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) advised that “warming of the climate system is unequivocal” and that the observed 0.74°C increase in globally averaged temperatures over the 20th century is very likely due to the observed increase in anthropogenic (originating from human activity) greenhouse gas concentrations.** Anthropogenic warming and sea level rise will continue for centuries even if greenhouse gas concentrations are stabilized. However, greenhouse gas concentrations are not stabilizing, indeed they are increasing at an accelerating rate. The IPCC projects that world temperatures could rise by between 1.1°C and 6.4 °C during the 21st century depending on the increase in greenhouse gas concentrations. As a result, the IPCC warns that sea levels will rise by 18 cm to 59 cm, it is very likely that there will be more frequent heat waves and heavy rainfall and there may be an increase in droughts and tropical cyclones¹. Some of these impacts of rising global temperatures are already being felt: reduced snow and ice cover; rising sea levels; global increases in precipitation; more

¹ IPCC (2007). IPCC assessment reports review and draw conclusions from available information about climate change drawn mainly from the peer reviewed and published literature. The Fifth Assessment Report to be published in 2014 will include reports from three working groups: Physical Science; Impacts, Adaptation and Vulnerability; and Mitigation of Climate Change.

frequent and intense droughts in some regions, including Central Asia, the Mediterranean basin and the Sahel; changes in the distribution – and possible increases in intensity of – storms and tropical cyclones².

5. **While there is broad agreement on global trends, there is considerable uncertainty regarding impacts at a regional or country level and the pace of change.** Most models predict more warming in high latitude than in low latitude; more precipitation in high latitudes; less precipitation around the tropics; more precipitation around the equator. However, the differences between models' predictions at a regional or country level can be huge. In West Africa, for instance, one of the leading models (CCSM3) predicts a 20% increase in precipitation while another (GFDL) predicts a 30% decrease. Similarly, while the rate of warming is largely dependent on progress in curbing greenhouse gas emissions, warming could result in abrupt and irreversible changes in climate and ecosystems once certain thresholds are reached. Uncertainty over country impacts and their timing poses a significant challenge.

6. **Nonetheless, it is clear climate change will have a severe impact on development: the 2010 World Development Report estimates that developing countries face 75-80 percent of the potential global damage from climate change.** Developing countries are particularly vulnerable because they are dependent on climate-sensitive sectors such as agriculture, fisheries and forestry; most are in the tropics and sub-tropics and so are already subject to variable climates; much of their population lives in exposed locations and economically precarious conditions; and their financial and institutional capacity to adapt is more limited. Temperatures 2°C above preindustrial temperatures will increase the number of people at risk of hunger by between 100 million and 400 million and 1 to 2 billion more people may no longer have enough water to meet their needs. If current trends in global warming are not abated the impacts will be even more severe. An increase in temperatures by 5°C or more compared by the end of the 21st Century would result in possible dieback of the Amazon rain forest, complete loss of glaciers in the Andes and the Himalayas, disruption of marine ecosystems, death of coral reefs and sea level rises at the higher end of IPCC projections³.

7. **Developing countries need to consider how they will begin to adapt to the environmental, social and economic impacts of climate change today rather putting it off till tomorrow.** Most developing countries' strategies and policies are focused on achieving economic growth and poverty reduction. These policies will increase resilience to climate change by building economic, institutional and economic capital. A healthy, well-educated, economically empowered population with access to social protection will be better able to cope with the shocks and stresses of climate change than a population that does not have these characteristics. However, economic growth and poverty reduction are not sufficient in themselves to adequately respond to the threat of climate change. Growth is unlikely to be sufficient to raise living standards to such a point that countries' will be able absorb adverse impacts. It may not be equitable enough to ensure adequate protection for the vulnerable. Failure to consider climate change impacts may result in mal-adaptations that increase vulnerability, such as building new infrastructure and facilitating settlement and economic activity in areas that will be drought or flood prone in the future. Investments in vulnerability assessments and adaptation planning help reduce these risks and identify the specific interventions needed to reduce exposure to climate change hazards and increase adaptive capacity.

8. **Developing countries should also consider opportunities for reducing the adverse environmental impacts of their development path.** Under the "common but differentiated responsibilities" laid out in the UN Framework Convention on Climate Change (UNFCCC), industrialized and transition countries listed in Annex I of the Convention are considered as having greater responsibility for reducing greenhouse gas emissions than "non-Annex I" developing countries. These responsibilities are translated into emissions reductions targets for the industrialized countries that

² IPCC (2011) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Group I and Working Group II of the Intergovernmental Panel on Climate Change*.

³ World Bank (2010) *World Development Report. Climate Change and Development*.

Box 1: Public Opinion and Climate Change

Polling of 13,518 respondents in fifteen countries – Bangladesh, China, Egypt, France, India, Indonesia, Iran, Japan, Kenya, Mexico, Russia, Senegal, Turkey, the United States, and Vietnam – conducted in 2009 provides a snap shot of international public opinion on climate change.

The publics in all countries polled saw climate change as a serious problem, particularly so in low-income countries. In nine countries, the public thought climate change is already doing harm. Majorities in all countries thought that there would be widespread adverse effects if climate change were unchecked.

Asked whether they believe their “country does or does not have a responsibility to take steps to deal with climate change” majorities in all 15 countries said their country does have such a responsibility. Majorities exceeded 90% in France, China, Indonesia, Vietnam, Senegal, Bangladesh, and Kenya. In most countries, clear majorities thought their national governments were not doing enough. This proportion was above 70 % in Mexico, Japan, China, Vietnam, Indonesia and Bangladesh and above 60% in Kenya and Egypt.

Majorities in 14 countries were willing to pay between 1.0% and 0.5% of GDP per capita in higher prices resulting from steps taken against climate change. In nearly all countries, majorities supported measures to deal with climate change, even when the measures were described only in terms of costs, not benefits. Majorities in all 15 countries were in favor of preserving or expanding forested areas, even if this means less land for agriculture or construction. Majorities in 14 countries approved limiting the construction of coal-fired power plants, even if this increases the cost of energy and increasing the requirements for fuel efficiency in automobiles, even if this raises the cost of cars and bus fares. Majorities in 12 countries favored gradually reducing government subsidies that favor private transportation, even if this raises its cost.

However, when asked whether or not it will be necessary to increase the cost of energy, to encourage individuals and businesses to conserve more or to use alternative forms of energy, across 15 countries polled, nine majorities and one plurality thought this would be necessary. In three countries, majorities thought cost increases would not be necessary – Russia, Mexico and France – and two countries were divided – Iran and the USA.

These patterns are broadly consistent with a survey of multinational polls, pointing to broad awareness and willingness to support action on climate change.

Source: World Bank (2009) *Public attitudes toward climate change: findings from a multi-country poll*. Anthony Leiserowitz (2007) *International Public Opinion, Perception, and Understanding of Global Climate Change*, UNDP Human Development Report Occasional Paper

have ratified the Kyoto Protocol. While developing countries are not bound by emissions reductions targets, they are encouraged to adopt low carbon development policies and there are sound economic reasons for doing so. Reduction or prevention of pollution and protection of ecosystems such as forests and wetlands reduces future clean-up costs and avoids damage that may be irreversible. Early investment in low carbon technology and infrastructure avoids “locking-in” an environmentally destructive long-term development path. Power, transport and urban infrastructure have operating lives measured in decades so decisions taken today will determine the environmental impact of these sectors well into the middle of the 21st Century. Low carbon policies can generate economic co-benefits, by reducing expenditure on environmentally harmful and economically wasteful expenditures, such as subsidies on fossil fuel consumption, or by addressing market failures, such as urban congestion. They may also generate direct benefits through innovation and improvements in production efficiency⁴.

9. **Not only is there a clear development imperative for action to address the impacts of climate change but there is also growing public awareness of need for governments to do so.**

⁴ World Bank (2012) *Inclusive Green Growth. The Pathway to Sustainable Development*.

While there are surprising few international surveys of public opinion on climate change, those that are available point to widespread awareness of the threat of climate and willingness for governments to take action even if this has direct costs (see Box 1). This creates an enabling environment for political leaders faced with trade-offs between climate change mitigation and adaptation and what some constituencies may consider to be more immediate development priorities. Extreme weather events raise awareness about climate change risks and create windows of opportunity for governments to act. Governments can also play an active role in raising awareness by involving stakeholders and the media in the policy and planning process. It is perhaps no accident that developing countries that polled heavily in favor of greater government intervention on climate change issues in 2009 - Mexico, Japan, China, Vietnam, Indonesia and Bangladesh - all have high profile climate change strategies.

10. For developing countries there are already significant financial incentives for action on climate change. Climate change is now an integral part of the development agenda: OECD DAC encourages development agencies to integrate climate change into their country strategies and operations⁵. A significant share of development assistance is already allocated to climate change. OECD DAC data suggests that climate change-related development assistance amounted to about US\$22.6 billion in 2010, equivalent to 15 percent of total ODA⁶. Climate change mitigation or adaptation were the principal objective for about two thirds of these activities. OECD DAC data also suggests that development assistance allocations to climate change is increasing: ODA financing for mitigation, which accounted for about two-thirds of climate change-related development assistance in 2010, increased from around US\$4.7 billion in 2006 to US\$17.5 billion in 2010.

11. Financial incentives are expected to increase significantly in the coming years. At the 2010 Cancun UNFCCC Conference of States Parties, industrialized countries committed to provide public and private funding in addition to traditional development assistance rising to US\$100 billion per year by 2020 “to support concrete mitigation actions by developing countries that are implemented in a transparent way”. While agreement has yet to be reached on how these funds will be mobilized and managed, there is a clear expectation that climate change-related financing will increase in. In the meantime, developed countries report that they are on track to provide the US\$30 billion in Fast Start Finance for climate change pledged for 2010-2012 at the Copenhagen COP in 2009⁷.

PURPOSE

12. Climate change adaptation and low carbon development requires proactive policies and government planning. The purpose of public sector interventions is to provide information, incentives and an enabling environment for communities, households and the private sector that encourages them to change their behaviors, their consumption and their investment choices. This requires the use of a range of policy levers: information, regulation, taxation and public spending. Public expenditure will be an important part of this policy package.

13. Public Expenditure Reviews evaluate and inform the alignment of public spending with a country's development needs and objectives. Over the last fifteen years the World Bank has undertaken over four hundred Public Expenditure Reviews. Reviews are used to inform expenditure policy. Most reviews are published in order to contribute to policy debate between stakeholders. Their scope and content are agreed with Government. Most seek to identify how public expenditure can more effectively support the country's growth and poverty reductions objectives. Some take a whole-of-government approach, addressing macro-fiscal policy and resource allocation issues across the public sector. Others focus on a few priority sectors. These include Environmental Expenditure Reviews which

⁵ See OECD (2009) *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*. On progress integration see Gigli, Simone and Shardul Agrawala (2007) *Stocktaking Progress on Integrating Adaptation to Climate Change into Development Cooperation Activities*, OECD DAC

⁶ OECD (2011) *FactSheet: OECD DAC statistics on climate-related aid*, <http://www.oecd.org/dac/aidstatistics/FactsheetRio.pdf>

⁷ Brown, Jessica et al (2011) *Fast-start finance to address climate change: what we know at the mid-point*, ODI Background Paper

assess how to improve the policy alignment, efficiency and effectiveness of public expenditures in achieving environmental policy objectives⁸.

14. **Climate Change has only recently been identified as a specific area of focus for Public Expenditure Reviews.** Bangladesh, Cambodia, Morocco, Nepal, Philippines, Samoa and Thailand are among the countries that have pioneered Public Expenditure Reviews on climate change issues. Similar reviews are now underway in Indonesia and Viet Nam. The Sourcebook draws on the experience of these initial reviews, identifying methods and approaches used to tackle some common problems, such as in the definition of climate change expenditures⁹.

15. **Climate Change Public Expenditure Reviews can contribute to an institutional and policy environment that is more aware of and more responsive to climate change.** They provide an opportunity to extend policy dialogue on climate change issues beyond the specialist environmental agencies by engaging central planning and finance agencies and key line Ministries in discussion of climate change policies and their fiscal implications. They can also facilitate engagement with a broader range of stakeholders, providing an opportunity for dialogue on climate change policy with the legislature, civil society and external partners, thereby mobilizing support and financing for the strategy.

16. **Climate Change Public Expenditure Reviews can support the development of the country's climate change strategy.** Expenditure reviews require an assessment of the climate change impacts of current policies, and suggest how these can be adjusted to better address climate change adaptation and sustainable development objectives. This analysis can provide a starting point for the formulation of a climate change strategy.

17. **Climate Change Public Expenditure Reviews can facilitate the integration of climate change policies into government plans and budgets.** The assessment of the financial implications of climate change policy provides a starting point for the prioritization between alternative applications of scarce resources. This is particularly important where a climate change strategy is in place and attention has to turn to implementation. Expenditure reviews require an assessment of the alignment of resources with stated policy objectives and the means by which these policy objectives will be achieved. This analysis can serve as an input to the planning and budget process, contributing to the selection, prioritization and allocation of resources to expenditure programs.

18. **Climate Change Public Expenditure Reviews can contribute to good governance.** Public Expenditure Reviews address the institutional framework for climate change policy making and implementation, clarifying lines of accountability for the achievement of policy objectives. An open, consultative Public Expenditure Review process and publication of key documents can promote transparency and participation in the policy process.

19. **Finally, Climate Change Public Expenditure Reviews can help mobilize resources.** An assessment of the alignment of public spending with climate change policy objectives can provide the basis for adjustments in resource allocations. It can also highlight policy objectives that require additional financing. This can inform government dialogue with development partners on development assistance priorities. It can identify where external financing is needed most. It can identify the strengths and weaknesses of the governance framework for climate change finances and how these weaknesses can be addressed. This analysis can strengthen arguments for budgetary support – the most flexible source form of external assistance – by demonstrating how the government's budget supports climate change policy objectives.

⁸ Swanson, AuPhil and Leiv Lundethors (2003) *Public Environmental Expenditure Reviews (PEERS) Experience and Emerging Practice*, World Bank Environment Strategy Papers No. 7

⁹ MaMiller, Mark (2012) *CPEIRs in the Asia Pacific Region – What have we learnt*, UNDP, September 2012,

ANALYTICAL FRAMEWORK

20. **The basic analytical framework for Climate Change Expenditure Reviews is same as would be used in the review of any other policy issue.** This framework comprises an assessment of six key dimensions of public expenditure: fiscal sustainability; strategic resource allocation; the role of government; the efficiency and effectiveness of spending; the incidence of spending; and capability of institutions and alignment of incentives (see Box 2). The framework tests the consistency between the intended and the actual outcomes – the economic, social and environmental impacts – of public expenditure policy. It recognizes that there are tradeoffs between policy objectives, for instance, increased spending on public services, reduced taxation and aggregate fiscal discipline. It also acknowledges that policy objectives may be achieved using a range of instruments, by providing information, through regulation and taxation as well as through public expenditure, and that public expenditure may not be the most cost-effective means of achieving these objectives.

21. **Building on this framework, the Sourcebook focuses on the distinct challenges facing Climate Change Public Expenditure Reviews.** Five challenges stand out: uncertainty as regards climate change impacts; the extended time horizon over which climate change impacts will unfold; the distributional consequences of climate change; managing the unintended consequences of policies; the extent to which international agreements will shape national policy and planning processes; and finally the need to put in place adequate institutional arrangements.

Box 1: Analytical Framework for Public Expenditure Reviews

Fiscal Sustainability. testing whether the aggregate level of public spending and deficit is consistent with a sustainable medium-term macro-economic framework, yielding a sustainable deficit and level of public debt. This assessment requires a broad definition of public spending, since fiscal imbalances may arise in central government, autonomous agencies or other levels of government. It also requires an understanding of macro-economic and other risks and their potential fiscal impacts.

Strategic allocation of resources, testing whether the allocation of resources across sectors and within sectors, and other categories of expenditures, maximizes social welfare. Given the government's role in translating society's preferences into public policy, this assessment should also determine whether current and planned expenditures are aligned with the government's stated policy objectives.

Role of government, determining whether the public sector complements rather than substitutes for the private sector in generating the desired social outcomes. Government intervention may be justified in cases of market failure which may occur for a number of reasons: in the case of public goods, externalities, natural monopolies or asymmetrical information. The appropriate public sector response - distinguishing public provision, financing or regulation - and level of public spending will depend on the type and degree of market failure that the public sector seeks to correct.

Efficiency and effectiveness, tests the relationship between government expenditures and the intended outputs in terms of goods and services (efficiency) and their impact in terms of changes in social welfare (effectiveness). This entails an assessment of the inputs, means and arrangements for the delivery of public goods and services and an assessment of whether these provide value for money.

Incidence assesses how the costs and benefits arising from public policies are distributed across society. This analysis may consider the distribution of costs and benefits between categories defined in terms of income, gender, ethnicity, region or other policy relevant characteristic.

Institutions, examines whether and how the institutional framework and incentive structure deliver aggregate fiscal discipline, strategic allocation of resources, efficiency and equity in the composition of spending, and technical efficiency in the use of budgeted resources

Source: Pradhan, Sanjay (1996) *Evaluating Public Spending. A Framework for Public Expenditure Reviews*. World Bank Discussion Papers 323.

22. **Climate change policy is confronted a ‘cascade of uncertainties’ that preclude prediction of the precise nature and timing of climate change impacts.** Uncertainties regarding the impact of increased concentrations of anthropogenic green house gases on global climate are compounded when climatic models are downscaled to the regional or country level. These are further compounded by uncertainties regarding the impact of climate change on ecosystems, society and the economy. The most effective response to uncertainty is to retain flexibility and provide regular feedback so that institutions and policies can adapt to changing circumstances. Climate Change Public Expenditure Reviews will need to take account of this uncertainty. They will also need to identify policy options and where there are opportunities to build flexibility and learning into the institutional and policy response.

23. **The extended time frame over which climate change impacts will unfold contrasts with the short-term imperatives of the political and electoral cycle and the limited horizons of routine planning instruments.** This requires Climate Change Public Expenditure Reviews to take a longer time perspective than would normally be the case. Policy continuity is a prerequisite if households and the private sector are to undertake investments that will only generate benefits far in the future. However, policy continuity is difficult to achieve – and convince stakeholders that it will be sustained – over extended periods. Climate Change Public Expenditure Reviews will need to consider how governments can retain flexibility but at the same time provide some assurance that policy initiatives will not be reversed. Climate Change Public Expenditure Reviews will also have to address issues of intergenerational equity and trade-offs between the immediate improvements in welfare and adaptation to and mitigation of more distant climate change. They will have to identify interventions that can address both development and climate change priorities and inform policy decisions regarding the selection and timing of investments in adaptation and mitigation.

24. **There will be climate change winners and losers and these distributional consequences will impact on the political feasibility of policies.** Climate change will not impact on all households, communities, businesses or regions in the same way. The policies required to mitigate (such as shifting to low carbon development strategies) and adapt to climate change (such as adjustments in regional development and production models) will also have distributional consequences. These distributional consequences lie at the heart of the global response to climate change. Since the cost of climate change mitigation are borne by national economies but the benefits are distributed globally, as a global public good, international agreements, regulation and financial incentives are needed to encourage national authorities to take action. Similarly, national authorities may have to intervene to manage the distributional consequences of climate change and create a political environment which enables them to take action on climate change mitigation and adaptation. Climate Change Public Expenditure Reviews should inform this analysis, identifying distributional consequences of policy interventions and the means by which these can be addressed.

25. **While Climate Change Public Expenditure Reviews will inevitably focus on policies that have climate change mitigation and adaptation objectives, it is important to consider the climate change impacts of public policy as a whole.** This is true for both climate change mitigation and adaptation. Where there are subsidies for fossil fuel consumption, for instance, removal of these subsidies is likely to be a more cost-effective means of achieving mitigation objectives than proactive interventions, such as feed-in tariffs and subsidies for renewable energy. Climate Change Public Expenditure Reviews provide a framework for assessing the relative merits of alternative policy interventions in achieving climate change objectives. Similarly, Climate Change Public Expenditure Reviews will need to consider the implications of climate change for major public investments and policy interventions. This will help identify ‘lock-ins’: interventions that will encourage actors to make decisions that reduce their ability to adapt. Development of flood prone areas or irrigation in areas that are likely to suffer increasing water scarcity are possible examples. While it may not be possible to avoid ‘lock-ins’, or economically desirable to do so, the potential consequences of these interventions need to be clearly flagged for decision makers.

26. **International agreements will play an important role in shaping climate change policies and planning processes.** Transfers of resources from industrialized countries to assist developing countries respond to climate change will be an important part of this international response. Public Expenditure Reviews should help decision makers determine how to optimize potential resource flows. The longer-term international response to climate change may entail both ‘carrots’ – financing, technology transfer and trade – and ‘sticks’ – market access, conditional transfers – that impact on developing countries. Climate Change Public Expenditure Reviews provide an opportunity to assess the implications of the emerging international climate change architecture for national policy. An important part of this architecture is the structure of reporting and planning instruments mandated under the UN Framework Convention on Climate Change (UNFCCC). Given the considerable investment of time and resources in complying with UNFCCC requirements, these instruments will have a considerable influence national planning processes. Climate Change Public Expenditure Reviews will need to take these requirements into account.

27. **Finally, institutional issues are likely to figure prominently in Climate Change Public Expenditure Reviews.** This is particularly true of the early years of planning the national response to climate change, when institutional arrangements are still evolving. Institutions are important because they determine the extent to which climate change vulnerabilities are reflected in policy and whether policies are translated into development outcomes. The climate change literature acknowledges this, placing considerable emphasis on “mainstreaming” and “integrating” of climate change in the decision making process. This addresses concerns that, in the absence of specific institutional arrangements, climate change will not be given the necessary consideration in decision making and that institutions simply pay lip service to climate change policy objectives. This concern is not unique to the climate change agenda. Indeed there is a long debate on how to approach the integration of environmental policy and the reasons behind the limited success in doing so¹⁰.

28. **The Sourcebook proposes a diagnostic approach to institutional issues, encouraging Climate Change Public Expenditure Reviews to assess the capability of institutions and identify how this capability can be strengthened.** This is in marked contrast to much of the literature which advocates for conceptual frameworks and specific methods for mainstreaming or integrating climate change in development and project planning¹¹. The diagnostic approach focuses attention on the functional outcomes that stakeholders are trying to achieve and the intended and unintended outcomes that are actually delivered by institutions. Political economy analysis can be used to inform this analysis, identifying incentives that are driving institutional behaviors and outcomes. The approach also engages stakeholders in the identification of possible solutions. The Public Expenditure Review will typically provide both an assessment of the strengths and weaknesses of the current institutional framework and suggest alternatives that are likely to the “best fit” – rather than “best practice” – for the incentive environment¹².

SCOPE AND STRUCTURE

29. **This Sourcebook is structured in seven chapters.** The chapters address the functional requirements of an effective national climate change public policy and expenditure planning process. The intention is to provide a broad overview of the climate change-related issues that analysts should consider as part of an expenditure review process. The relative importance of these themes and their

¹⁰ See for instance Dalal-Clayton, Barry and Steve Bass (2009) *The Challenges of Environmental Mainstreaming: Experience of integrating environment into development institutions and decisions*, International Institute for Environment and Development.

¹¹ For a guide to mainstreaming in development planning see: UNDP-UNEP (2011) *Mainstreaming Climate Change Adaptation into Development Planning: A Guide for Practitioners*. For a guide to mainstreaming at the project level see a series of eight Guidance Notes under World Bank (2011) *Mainstreaming Adaptation to Climate Change in Agriculture and Natural Resources Management Projects*.

¹² World Bank (2012) *The World Bank's Approach to Public Sector Management 2011-2020: Better Results from Public Sector Institutions*

relevance for any particular expenditure review exercise will depend on the country context. Key considerations include: the nature of climate change impacts that the country faces, its international commitments and the governments' proposed policy response. Since climate change science and the policy agenda is constantly – and rapidly – evolving, the Sourcebook can only be considered an introduction.

POLICY

30. Chapter 1 explores how climate change can be integrated into a broad policy framework that addresses development goals. It recognizes that growth and poverty reduction are generally governments' primary concerns and that climate change will have to be addressed as part of a strategy for inclusive growth. There are distinct challenges in the treatment of adaptation and mitigation policies.

31. Development and adaptation policies are often difficult to distinguish. Policies aimed at improving efficiency, correcting market failures, promoting innovation and economic diversification, together with improvements in health care, education and sanitation increase welfare and human development. They also enable 'reactive' adaptation to climate change, building the capacity of individuals, communities and the private sector to undertake adaptive actions of their own in response to climate. There are some interventions that are specifically intended to address vulnerabilities to climate change: interventions to facilitate adaptation by other actors, build adaptive capability in public institutions or upgrade public infrastructure to cope with increased hazard risks. However, most policies, programs and projects fall somewhere on a continuum between pure development and pure adaptation. As a result it is difficult to isolate adaptation activities for the purposes of ear-marking financing and defining specific budget allocations. The costs of upgrading infrastructure to meet increased hazard risks, for instance, will be embedded in the cost of the infrastructure. This represents a challenge for Climate Change Public Expenditure Reviews because it is difficult to distinguish between resource allocations to policies, programs and projects with development and adaptation objectives.

32. The key fiscal policy considerations with regard to adaptation relate to how much should be invested, when and how these resources should be prioritized. Estimates of the cost of adaptation, which indicate that there is a huge global adaptation financing deficit, are of little use to resource constrained national authorities. The overall resource envelope available for adaptation will be determined by fiscal space and the merits of investments in adaptation relative to other development priorities. These considerations typically figure prominently in Public Expenditure Reviews. The literature encourages national authorities to prioritize 'no regrets' investments, which generate benefits whatever the future climate scenario, and 'robust' investments, which generate benefits across a range of probable scenarios. While the chapter provides some rules of thumb – investments in early warning systems, for instance, are generally considered 'no-regrets' – decisions regarding the relative merits of investments will have to be taken on a case by case basis (as discussed in Chapter 3).

33. Fiscal policy assumes particular prominence as tool for climate change mitigation. Carbon taxes and carbon markets can be used to set an appropriate price for carbon. Carbon pricing deters activities that produce GHG. These pricing mechanisms can also generate substantial revenues which can then be re-cycled to promote mitigation activities or used to off-set the distributional consequences, through reductions in income or consumption taxes or increases in targeted transfers. The chapter reviews the conditions in which carbon pricing can be applied and how Climate Change Public Expenditure Reviews can support this analysis.

34. While carbon pricing is generally seen as the backbone of an efficient mitigation regime, there are distinct roles for expenditure policy and regulatory approaches in supporting mitigation. In many developing countries, the most effective mitigation measure is likely to be the reduction of subsidies on the consumption of fossil fuels. Governments may choose to offer subsidies for renewable energy and investment in infrastructure that promotes greater energy efficiency, such as

moving traffic from roads to mass transit systems. Public expenditure may also be used to protect forests, wetlands and other carbon sinks. Regulatory approaches may usefully apply in sectors such as agriculture, where carbon pricing is impracticable because of measurement issues at the business level, and in promoting greater energy efficiency in end-use applications, where price signals cannot overcome the hurdles to adoption of efficient technology even if they are economic. Climate Change Public Expenditure Reviews provide an opportunity to review the feasibility and effectiveness of alternative mitigation policy options.

PLANNING

35. **Chapter 2 provides a framework for assessing the extent to which core policy and planning systems adequately address climate change risks and translate climate change policy goals into development outcomes.** The international architecture for climate change reporting and planning established under the UN Framework Convention on Climate Change provides the starting point for this analysis. This architecture comprises four key instruments: National Communications; National Inventories, which are integrated into the Communications; National Adaptation Programs of Action and their successor the National Adaptation Plans; and Nationally Appropriate Mitigation Actions and the emerging practice of Low Carbon Development Strategies. Preparation of these instruments requires a substantial effort on the part of national authorities. Where they have been developed primarily to comply with international commitments they have had limited impact on decision making at a national level. In order to address this concern, the consensus is now shifting towards the integration of UNFCCC into national planning routines and national planning documents. Nonetheless, UNFCCC guidelines and the technical assistance provided to support UNFCCC processes are likely to play an important role in shaping the national adaptation and mitigation strategies and the way in which they are presented.

36. **The government response to climate change will ultimately be determined by the extent to which climate change considerations are integrated into national policy and planning institutions and processes.** This is unlikely to occur where climate change remains the preserve of specialist environmental agencies. Specific institutional arrangements have to be put in place to meet the functional requirements of effective integration. The chapter reviews these functional requirements and the solutions that national authorities have adopted. They include: leadership and coordination; consultation and consensus building; risk and vulnerability assessment; setting and communicating objectives; implementation, monitoring and evaluation arrangements. Following the diagnostic approach, the intention is not to identify “best practices” but rather to review institutional arrangements that are likely to be “best fits” in the political economy context.

DECISION MAKING

37. **Chapter 3 reviews the analytical tools and processes that inform and guide the allocation of scarce resources among competing policies, programs and projects.** Climate Change Public Expenditure Reviews have to determine whether the decision making processes within government address the challenge of climate change and explore how this dimension of adaptive capability can be strengthened. On occasion Climate Change Public Expenditure Reviews may have to apply these techniques when evaluating specific policies, programs or projects.

38. **Three analytical approaches are commonly used to support climate change decision making.** These approaches are: multi-criteria analysis; cost-effectiveness analysis; and cost-benefit analysis. These approaches are not mutually exclusive: indeed, some central finance and planning agencies use a combination of these tools in the formal appraisal process. The chapter reviews the adaptations in these techniques that are needed to address the specific challenges of climate change.

39. **Uncertainty regarding future climate conditions presents a particular challenge for decision-making.** Decision makers can no longer assume that the present and the past – the sources of

data on which decisions are made – are a reasonable guide to future conditions. The academic literature points to robust decision making and real options as specific techniques that can be used in conjunction with traditional cost-benefit analysis to help address this uncertain future. Practical applications of these techniques can be costly, data intensive and technically complex. The chapter reviews applications in developing country contexts. The most promising appear to be the ones that stress flexibility in the face of uncertainty. The challenge for the public sector is to incorporate uncertainty, flexibility and learning into routine decision making process. The chapter concludes with a stylized decision making process that addresses climate change uncertainty.

RISK MANAGEMENT

40. **Chapter 4 addresses the role of central finance and planning agencies in disaster risk management.** Developing countries are particularly vulnerable to natural hazards and climate change will increase their exposure. The economic cost of disasters is significant and will increase as countries develop. Until recently, disasters were treated as unforeseen, exogenous shocks by governments and development agencies. Attention focused on disaster response and recovery. We now recognize that natural hazards are common and recurring events. While the timing and scale of individual hazard events may be unpredictable, decision makers can anticipate disaster impacts. Armed with this knowledge, governments can plan ahead. They can choose how much risk to reduce, how much risk to transfer to markets, and how much risk to retain. Climate Change Public Expenditure Reviews provide an opportunity to incorporate this risk management approach in expenditure policy.

41. **The chapter advocates a systematic, comprehensive approach to disaster risk management.** Drawing on the framework developed by the Global Fund on Disaster Reduction and Reduction (GFDRR), the key elements of this approach are: risk assessment; risk reduction, disaster preparedness; financial protection; and post-disaster recovery and reconstruction. The chapter explores how practitioners can assess the adequacy of disaster risk management arrangements and identify how this strategy can be strengthened. Development of disaster risk management capacity is an integral part of the response to climate change. Indeed, measures to reduce vulnerability to climatic hazards feature prominently in most countries' climate change adaptation strategies. Often these measures entail engineering solutions such as flood defenses. The chapter demonstrates that effective risk management will include measures to reduce risk exposure, such as through land use zoning and regulation, as well as a range of protection measures and the development of capacity for effective disaster response.

42. **The chapter focuses on the financial management dimensions of this disaster risk management strategy.** The purpose of a financial risk management strategy is to ensure timely, cost-effective access to the funds needed for post-disaster response, recovery and reconstruction while simultaneously sustaining on-going government programs. Successful financial strategies match disaster risks with the appropriate financing instruments, so that the cost of financing is minimized and the timing of finance mobilization is optimized. The chapter argues for a three-layer approach which uses contingency budgets to finance the first layer of risk consisting of low impact, low frequent disasters; budget reallocation, borrowing and contingent credit for the intermediate layer of risks; and risk transfer mechanisms to pass on high risk layers to reinsurance and capital markets. Clarity on the policy framework for post-disaster response and recovery facilitates timely and effective interventions when disasters do occur. The chapter examines the institutional arrangements that facilitate timely post-disaster response and recovery and strengthen accountability.

FINANCE

43. **Chapter 5 provides an overview of climate change finance, identifying potential sources of international funding.** The international architecture of climate change finance is complex, comprising market and non-market mechanisms established through the UNFCCC process, official flows, export

credits and private investment. A survey of international climate finance undertaken by the Climate Policy Initiative suggests that climate finance flows amounted US\$97 billion in 2009 (total official development assistance amounted to US\$127 billion in the same year)¹³. Approximately two thirds of this climate change finance originates in the private sector, most as financing for investments in energy efficiency and renewable energy. Indeed, the vast majority – around ninety percent – of climate change finance is for mitigation activities, with only a small share, virtually all from official sources, allocated to adaptation. It should be stressed that while international flows are important for public sector, they are often dwarfed by domestic financing of climate change expenditures through the government budget. In Bangladesh, a country with a relatively high share of development assistance in GDP, domestic sources still financed three quarters of its climate expenditures.

44. **The structure of climate financing flows will change over the next few years.** UNFCCC has established a Green Climate Fund, whose governing instrument expresses the intent to become the primary channel through which public climate finance will flow. UNFCCC's market mechanisms are under review. REDD+ will provide a framework for financing emissions reductions from deforestation, forest degradation and sustainable forest management. These changes are expected to benefit developing countries, increasing resources available for adaptation and for mitigation activities that are aligned with developing countries needs. Indeed, there is already evidence that resource flows through instruments such as the Clean Development Mechanism are shifting towards Africa and other developing countries.

45. **National authorities will need to be proactive if they are to mobilize these resources.** Climate change policies, plans and projects and instruments such as Climate Change Public Expenditure Reviews, which help demonstrate the alignment of resources with climate change objectives, all contribute to a context n environment conducive to the mobilization of official flows of climate change finance. The real challenge lies in mobilizing private capital. A favorable investment climate certainly plays an important role here. So too does a policy environment that supports investments mitigation activities in energy, transport, industry and agriculture. Governments can also facilitate investment by direct interventions, providing institutional support for private investors as they go through the process accessing climate finance and certifying emissions reductions, for instance. Climate Change Public Expenditure Reviews provide an opportunity to assess the effectiveness of the institutional framework for mobilizing climate change financing and identify measures that may strengthen this capability.

FINANCIAL MANAGEMENT

46. **Chapter 6 explores how public financial management systems can support the implementation of climate change policy.** The principle challenge is to provide information on climate change-related expenditures during the planning and budget process in such a way that it can be used to inform decision-making¹⁴. The chapter focuses on three issues: first the definition of climate change expenditures; second the use of tagging to identify climate change-related expenditures in budgets and financial reports; and third the establishment of climate change funds.

47. **The definition of climate change expenditures figures prominently the work to date on Climate Change Public Expenditure Reviews.** There are a number of dimensions to address. For a start there is no universal definition of what constitutes climate change adaptation and mitigation programs or activities. Such definitions are contextual. They can derive from an assessment of stated objectives or expected impacts. Both of these approaches have been used in defining climate change-related external assistance: the OECD-DAC's Rio Markers take the stated objectives as their starting point; and the World Bank's "co-benefits" assess expected impacts. Neither approach is entirely satisfactory, not least because the selection of programs is, ultimately, subjective but also because they

¹³ Buchner, Barbara et al (2011) *The Landscape of Climate Finance*, Climate Policy Initiative

¹⁴ For an overview see Miller, Mark (2012) *Making Sense of Climate Finance: Using public finance to shape national policy response to climate change in Asia Pacific*, United Nations Development Programme,

can only generate a rough estimate of the expenditures actually contributing to climate change policies and programs. The problem here is that most adaptation and some mitigation interventions are embedded in activities that are not primarily intended to address climate change. Furthermore, while these definitions will tend to capture expenditures that contribute to climate change objectives, “green expenditures”, they tend to ignore expenditures that have unintended adverse climate change impacts, “dirty expenditures”. This is a significant omission: in many countries reductions in “dirty expenditures” – subsidies for fossil fuel consumption, for instance – would have a much greater positive impact on the environment and climate change than increases in “green expenditures”. Problems may also arise from the nature of public expenditures. While attention tends to focus on the state budget, a large part of climate change adaptation and mitigation expenditures – and “dirty expenditures” – may be undertaken by state owned enterprises. Similarly, tax expenditures – subsidies conceded through tax relief – may also have significant climate change impacts and serve as policy tool, but they too are rarely recorded in budget documentation. The chapter reviews these challenges and points to possible solutions for expenditure reviews.

48. Climate change-related expenditures can be tagged so that they can be identified in the budget and expenditure reports. Tagging is necessary because standard budget classifications – administrative, program, functional and economic – cannot distinguish all climate change-relevant expenditures. A similar approach has been used to identify poverty and gender-related expenditures. In some cases the methods used for tagging development assistance – the OECD-DAC’s Rio Markers and the World Bank’s co-benefits – have been adapted to national budgets, in others the tagging is tied to specific national climate-change objectives¹⁵. The chapter reviews these methods and their limitations. In particular, tagging may be used selectively: capturing “green expenditures”, ignoring “dirty expenditures”. The chapter also examines the extent to which tagging has been used to inform decision-making. It notes countries are only just beginning to explore the use tagging methods that have been used to prioritize poverty reduction spending, notably “virtual funds”, in the context of climate change policy.

49. Some countries have sought to put in place climate change funds to manage climate change expenditures. Motivations vary: in some cases funds seek to consolidate external financing from multiple sources, in others the motivation lies in strengthening the governance framework for climate change financing, or in facilitating mobilization of both private and public sources of finance. Political economy factors also play a role, with some national and international agencies – often agencies with environmental or specific climate change mandates – seeking to earmark and control access to climate change financing by channeling these resources through funds. The rationale for the establishment of specific funds is strongest where specific governance and management arrangements are needed to achieve policy objectives. This may be the case where funds are ultimately allocated to private sector or civil society entities, where financing is provided as loans and where stakeholders have to be involved in decision making. However, the creation of separate funds can distract attention from the task of integrating climate change in core planning and budgeting systems – indeed they may provide a justification for not doing so – and thereby undermine climate change objectives. Funds tend to “projectize” spending, rather than adopting a programmatic approach which embeds climate change objectives in government planning and budgeting routines. Besides, climate change funds can only manage a small part of climate change expenditures: the bulk of climate change-related spending has to be integrated into sector programs and the government’s budget. The chapter reviews international experience in the design of climate change funds, explores how countries can avoid putting in place parallel decision making, monitoring and oversight arrangements that undermine the integrity of the public financial management system.

¹⁵ For a discussion of one approach see Bird, Neil et al (2012) *The Climate Public Expenditure and Institutional Review (CPEIR): a methodology to review climate policy, institutions and expenditure*, ODI and UNDP Working Paper, August 2012

50. **Chapter 7 reviews the role of local government in the design and implementation of climate change mitigation and adaptation policy.** Climate change impacts and the appropriate adaptation response will vary depending on local environmental, economic and social conditions. So too will opportunities for climate change mitigation. The challenge for policy makers is to design administrative and financial systems that take this diversity into account; indeed use this diversity of interests at the local level to advance national climate change objectives.

51. **The statutory division of responsibilities between levels of central and local government will shape their respective roles in climate policy.** Ideally, this division of responsibilities should be informed by comparative advantage. Interventions where there are economies of scale and spillovers are better suited for the national government. Thanks to their proximity to citizens and public service users, sub-national governments can access information on local needs and preferences and so, with appropriate incentives and resources, are better placed to manage programs that have to be targeted to meet diverse needs and respond quickly. Sub-national governments can also collaborate in innovation and piloting of programs that can subsequently be scaled up to national level. Local authorities may have incentives to deal with local market failures that are not addressed by federal policies, for example, tackling problems such as traffic congestion and other forms of pollution. When they have autonomy to do so, regional, provincial and municipal governments have proved willing to take decisive action on climate action. Local government in countries as diverse as Brazil, Canada, South Africa and Spain have taken the lead in setting ambitious emissions reductions targets. The chapter outlines the key considerations that shape the institutional framework for intergovernmental relations and the incentives that drive climate change policy.

52. **Intergovernmental fiscal relations play an important role in shaping climate change policy at the local level.** Design of fiscal transfer and revenue sharing arrangements should take into account distributional impacts and the incentive regime. These arrangements should be coherent and try to ensure that the costs and benefits of policies are internalized by decision makers, so that they can make appropriate decisions regarding the level and allocation of resources. Several countries have established specific transfers to promote mitigation and adaptation activities. The chapter reviews this experience and identifies strengths and weaknesses of alternative approaches.

53. **Where responsibilities are shared between levels of government coordination becomes critical to effective implementation.** Failures in coordination can mean that the scarce resources available to different institutions and agencies are not put to the best uses possible. It can also lead to duplicative efforts, a patchwork of policies, or even programs that work at cross purposes across level of government. Decision making becomes more complex as the number of actors increases. It also becomes harder to implement and sustain long-term policy commitments. The chapter reviews the institutional arrangements that countries have put in place to coordinate climate change policies across government.

PUBLIC EXPENDITURE REVIEW PROCESS

54. **Public Expenditure Reviews are best approached as part of a policy and planning process.** Public expenditure reviews are intended to inform expenditure policy decisions by national authorities, typically by central finance and planning agencies but also by sector agencies involved in policy implementation and by their financing partners. Recognizing the importance of expenditure analysis in informing policy, many OECD countries have institutionalized the expenditure review process by conducting periodic reviews as part of their planning and budget processes. Some developing countries have expressed interest in this approach, Brazil for instance. However, the majority of developing countries undertake public expenditure reviews in collaboration with development partners. In this context, particular attention has to be taken in the design of the review process to ensure that it provides the information needed by decision makers and supports the decision making process.

55. **Decisions have to be taken early on regarding the objectives, scope, interaction with planning and budget decision points and stakeholders for the expenditure review process.** These considerations are reviewed below, drawing on the experience gained from the implementation of public expenditure reviews in other areas of public policy as well as the first Climate Change Public Expenditure Reviews.

56. **The objectives of the expenditure review process will depend on the intended audience, the climate change policy agenda and the stage in the policy and planning process.** Public Expenditure reviews may be used to support periodic strategic planning exercises or the annual budget process. Where the government has yet to define a climate change strategy, the expenditure review process will likely require a stock-taking of policies and expenditures to assess their climate change impacts. Where the government already has a climate change strategy, the expenditure will likely address issues of resource allocation and implementation challenges.

57. **Reviews can either take a whole-of-government perspective or can focus on specific sectors, programs and expenditures.** A whole-of-government approach entails an analysis of all public expenditures, encompassing ministries, departments and agencies and autonomous bodies, whether or not these entities have climate change adaptation or mitigation objectives. The purpose of this analysis is to identify which entities, programs and expenditures have climate change impacts and distinguish those whose impacts are supportive of climate change adaptation and mitigation objectives, “green expenditures”, and which are detrimental to these objectives, “dirty expenditures”. Expenditure reviews that focus on specific sectors or programs are likely to ignore these distinctions, addressing only programs that have explicit climate change objectives. The advantage of this approach lies in the greater depth of analysis that is possible where there is a limited range of programs under review.

58. **Participation of the central finance and planning agencies is critical.** It provides an opportunity to raise awareness of climate change-related policy issues. More importantly, the central finance agencies’ support is needed if climate change issues are to be taken seriously across government and influence expenditure decisions through the budget. While the central finance agencies will defer to the specialist environmental and climate change agencies on technical issues, the central finance agencies will take the lead on cross-governmental policies and are empowered to require agencies to address these policies in their sector plans, budgets, programs and projects. Their involvement throughout the Climate Change Public Expenditure Review process – better still their leadership of the process – helps develop a sense of ownership of climate change agenda, the expenditure review and its recommendations.

59. **Ideally this participation should extend from strategic orientation for the Public Expenditure Review exercise – defining key issues of scope and process – to active involvement in the analysis and development of recommendations.** The participation of central finance agency officials in gathering and analysis of expenditure data alongside colleagues from the relevant environmental and sector agencies helps build ownership, strengthens credibility of findings and can help build capacity so that the review exercise can be repeated as part of the government’s own planning and evaluation processes. The extent to which this is possible will often depend on timing – reviews conducted during the budget process or planning process will compete with more pressing tasks – and the availability of staff working on policy related issues. The identification of counterpart staff, the clarification of expectations regarding their role in the expenditure review and the provision of training and technical assistance to help them fulfill these roles, are issues that should be addressed at the design or concept review stage.

60. **The participation of a wide range of external stakeholders in the Climate Change Public Expenditure Review process should be encouraged.** Key stakeholders include: specialist climate change agencies or commission where these exist; the legislature and oversight institutions, such as the auditor, that have a role in the approval and monitoring of public spending; scientific or academic institutions with an interest in climate change; and non-governmental organizations working on climate

change, environmental and broader development issues. The nature of stakeholder participation should be agreed with the authorities and communicated to those involved in order to manage expectations. The extent of this participation may vary from the preparation of background papers, consultations on at the outset of the review process to help set direction, consultations on findings and recommendations, through to more formal participation in decision-making group overseeing the CPEIR exercise.

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