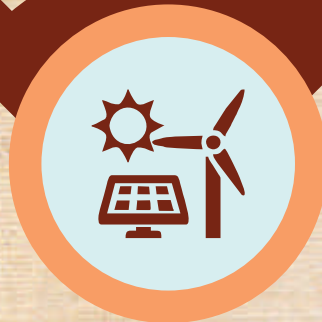


A Framework for Understanding Climate Change Responsiveness of the Union Budget in India



September 2017

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List of Abbreviations

- ACROSS** - Atmosphere and Climate Research Observing Modelling Systems and Services
- BCCSAP** - Bangladesh Climate Change Strategy and Action Plan
- BMTPC** - Building Materials & Technology Promotion Council
- BUR** - Biennial Update Report
- CC%** - Climate Change Relevance Percent
- CETF** - Climate Expenditure Tracking Framework
- CPEIR** - Climate Public Expenditure and Institutional Review
- CRB** - Climate Change Responsive Budgeting
- CSOs** - Civil Society Organisations
- GBS** - Gender Budget Statement
- GCF** - Green Climate Fund
- GDP** - Gross Domestic Product
- GHG** - Green House Gas
- IFC & WSM** - Irrigation, Flood Control and Water Shed Management
- INDC** - Intended Nationally Determined Contributions
- IPCC** - Inter Government Panel on Climate Change
- LESS** - Low Emission Budget Tagging and Scoring System
- LGUs** - Local Government Units
- MGNREGA** - Mahatma Gandhi National Rural Employment Guarantee
- MoF** - Ministry of Finance
- MPLADS** - Members of Parliament Local Area Development Scheme
- NAPCC** - National Action Plan on Climate Change
- NEMMP** - National Electric Mobility Mission Plan
- OECD** - Organisation for Economic Co-operation and Development
- OSTROM** - Ocean Services, Technology, Observations, Resources Modelling and Science
- SAPCC** - State Action Plans of Climate Change
- SAPFIN** - State Action Plan on Climate Change financial framework
- SDGs** - Sustainable Development Goals
- UNDP** - United Nations Development Programme
- UNFCCC** - United Nations Framework Convention on Climate Change
- ZED** - Zero Defect Zero Effect

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A Framework for Understanding Climate Change Responsiveness of the Union Budget in India

Abstract

Recognising the national budget as the finance system through which most public actions are funded, this paper discusses how climate change-related public expenditures can be considered under the Union Budget. There are various channels of funding for climate change actions, but it is public funding through the Union Budget, with its enduring systems and statutory procedures, that is expected to align most closely with national policy-making and the priority-setting of public expenditure. Climate change responsiveness of the Union Budget can provide strong evidence of the importance being attached to achieving India's commitment to combating the impact of climate change. Climate change responsive budgeting is also essential for India's abidance with the Paris Agreement on climate change which emphasises on managing climate finance with transparency and accountability.

This paper discusses the significance of considering climate change responsiveness in the Union Budget and what are the existing practices and gaps in documenting climate change financing in India. It delves into various questions; how the Government of India's (GOI) schemes/programmes are aligned with eight policy thrust areas defined under its National Action Plan on Climate Change (NAPCC); and how the various State Action Plans of Climate Change (SAPCC) prioritise climate change interventions and present their climate financing framework? It also presents a comparison of the experience of different countries on climate responsive budgeting and lessons learnt from adopting UNDP's methodology for Climate Public Expenditure and Institutional Review (CPEIR). It lists the programmes/schemes of various Union Ministries along with objectives/components/outcomes relevant for climate change to understand the existing space for climate change prioritisation at the Union Budget level.

The paper also suggests a methodology and framework for introducing a Climate Change Responsive Budgeting Statement in the Union Budget, drawing from the international experience like the UNDP's CPEIR and the domestic experience of specialised statements on various sections of the population such as Gender Responsive Budgeting Statement adopted in the main budget.

Keywords

Union Budget, Climate Change Finance, Mitigation Actions, Adaptation Actions, Climate Change Responsive Budgeting Statement

I. The Rationale

India has been reiterating its concern on the impact of climate change on the environment and economic development for a long time as is evident from the discussions on GOI's expenditure on climate change in the annual Economic Survey of India, released just ahead of the Union Budget and reflecting the views of the Ministry of Finance on the country's economic performance. The Economic Survey has over several years, raised concerns about the impact of climate change on the economy, international developments on the issue and the importance of providing adequate climate change financing resources. (see Annexure 1)

The Economic Survey discussions point to the GOI's sense of prioritising the financing requirement of climate change interventions with mobilisation of finance critical to achieving the ambitious Intended Nationally Determined Contributions (INDC) targets set by India under the Paris agreement. The Economic Survey 2015-16 suggests that at least USD 2.5 trillion at 2014-15 prices will be required for meeting India's climate change action under INDC between now and 2030.

Existing climate finance aggregates are insufficient to meet this goal and will need to be supplemented with budget revenue, international climate finance and private investment. India, like many other developing countries, has articulated the need for financial assistance through its INDCs.

Although climate finance will be from international, private and public sources, much of the climate change efforts will need to be managed by national and sub-national governments through their budgeting systems. Of these resources, public finance should be at the core as it ensures predictability and reliability of fund flow for climate actions and reflects the nation's planning and accounting for climate change impact. The outlay of public climate financing has been quite significant at the global level with public actors contributing an estimated USD 148 billion, or around 38% of overall global climate finance flows in 2014¹. A larger share of climate finance resources is provided by multilateral banks in the form of loans or grants, which in most instances flows through the government's budget for implementation of programmatic interventions for combatting climate change. Similarly, private players work on loans and subsidies provided by the government along with their own contribution. Effective utilisation of climate funds, irrespective of the source, is essential to ensure fund allocations and is informed by people's needs and vulnerabilities. It is imperative to have a transparent and accountable system for climate financing in order to achieve this goal. India has ratified the Paris Agreement on climate change in 2015, with the implementation period starting from 2020. It has also agreed upon the policy framework stipulated in the UN's Sustainable Development Goals (SDGs), which sets India to take stringent actions to tackle climate change. Both the international agreements, emphasised on greater transparency and accountability of the national government for financing climate change interventions.

The post-2030 SDGs agenda recognises that improving government transparency is a critical component of achieving some of the 17 adopted Sustainable Development Goals, especially Goal 16,

¹ The Climate Policy Initiative. The Global Landscape of Climate Finance, 2015



which aims to “build effective, accountable and inclusive institutions at all levels”. The principle of a transparent and accountable government is also embedded in SDG goal 13 on climate change with a particular target for implementation of the UNFCCC (United Nations Framework Convention on Climate Change) commitment on climate change with meaningful actions and transparency. On a similar note, the Paris Agreement marks a significant step forward through introduction of a transparency framework which, amongst others, requests countries to 'develop modalities for the accounting of financial resources provided and mobilised through public interventions' in accordance with Article 9.7 of the Agreement. It also encourages developing countries to communicate biennial reports on level of assistance provided through public interventions on a voluntary basis (See Box 1).

Box 1: Requirement of Paris Agreement on Transparency and Accountability for Climate Financing

The Paris COP 21 marks a significant step forward through the introduction of a transparency framework which, amongst others, requests countries to 'develop modalities for the accounting of financial resources provided and mobilised through public interventions in accordance with Article 9.7 of the Agreement' (para 58). Article 9, paragraph 7, stipulates that developed country Parties shall provide transparent and consistent information on support for developing country Parties provided and mobilized through public interventions biennially in accordance with the modalities, procedures and guidelines to be adopted, and that other Parties are encouraged to do so. Another important provision is the requirement for developed countries to submit biennial reports on ex-ante (i.e., projected) as well as ex-post (i.e., actual) levels of assistance provided through public interventions, noting that these reports need to be 'transparent and consistent' (Article 9.7). Developing country parties are also encouraged to communicate these flows on a voluntary basis. These requirements are relevant to the Green Climate Fund as they will put pressure on parties to work towards the roadmap referred to in the decision, thereby increasing the transparency and predictability of future funding pledges.

Source: Outcome document, Paris Agreement and UNFCCC website link:
http://unfccc.int/cooperation_and_support/financial_mechanism/items/10157.php

Making budgets responsive to climate change is crucial, given that transparency and accountability in climate change financing is a requirement under the global policy framework and a national priority. Budgets are critical policy documents of the government that reflect its accountability, commitments and priorities on an issue, and turning budgets climate responsive can be a tool to effect this. The government increasingly seeks to reconcile climate change with India's economic growth and sustainable development, and the NAPCC with its eight missions sets the broad direction of government policy. However, developmental strategies have failed to translate into plans without the ministries, specifically the Finance Ministry's active involvement in integrating climate actions into long-term budget planning.

Union budgets have been presenting budget statements focusing on specific sections of society as add end a with the general budget, such as on Gender, Scheduled Castes & Scheduled Tribes and Child Development. The rationale behind introducing these budget statements comes from recognition of the fact that the national budget impacts various sections of the population differently. It is not an

accounting exercise, but an ongoing process of keeping a perspective on various sections of the population in policy/ programme formulation, implementation and review. These special statements entail segmentation of the budgets to establish differential impacts based on the requirements of different section's (of population) and to ensure policy commitments are translated into budgetary commitments. Similar to the rationale behind specific section-based statements, the reasons for introducing a climate change budgeting statement is that obligating public finances for combatting climate change is indispensable for implementation of programmatic interventions to mitigate its cause (curbing GHG emissions) and for improving the adaptability of the affected population (improving their resilience).

Hence, the major objective of the exercise is to ensure that policy commitments and financial outlays are made in a climate change responsive manner. Various programmes and schemes of the Union Ministries explicitly or implicitly supporting climate change mitigation and adaptation activities need to be listed in the climate budgeting statement. This would help assess the alignment of public funds with the national climate priority policies and their percentage contribution in climate financing. Some of the other benefits envisaged of climate change budgeting are:

- ❖ Climate change budgeting would complement the current and future efforts of GOI by quantifying the need of investment requirement of curbing economic sector-wise emissions, and hence, would cater to the need of prioritising climate actions points at the national level;
- ❖ It would facilitate an informed debate over state-level requirements and allocations for curbing GHG emissions. This exercise will help in quantifying investment priorities at the state level and feed into more accurate and robust SAPCCs; a few states like Odisha and Kerala have already started preparing climate budgeting frameworks.
- ❖ It would be part of the wider efforts contributing to country's readiness for new climate finance such as the Green Climate Fund (GCF)². In particular, India, like other developing countries, is now required to submit Biennial Update Reports (BUR) to the UNFCCC Secretariat providing information on the financial contribution towards national climate goals and targets. Though this requirement is still voluntary, it helps in improving India's wider efforts on transparency and accountability on domestic climate finance. CRB would enable the country to meet the reporting requirements more efficiently and systematically, as following transparency in climate change accounting is a key exercise to be adopted under the ratified Paris Agreement.

² The Green Climate Fund (GCF) is one of the operating entities under financial mechanism set up under the United Nations Framework Convention on Climate Change (UNFCCC) to provide support to developing countries in combating climate change, with resources to be generated from funding by developed country Parties and various other public and private sources. It supports both climate change adaptation and mitigation projects in developing countries.

2. Existing Practices and Gaps in Documenting Climate Change Financing

2.1 How climate change related expenditure is currently being integrated into national budget documents?

India currently does not have separate guidelines for various ministries to follow on assigning budgetary allocation for climate change interventions. A glance at objectives and outcomes of various programmes and schemes of 56 ministries shows that around 28 ministries are implementing climate related programmes and schemes, with either explicit or implicit objectives, or activities related to climate change. Annexure 2 presents an indicative list of programmes and schemes of various ministries along with the rationale for considering them as climate change relevant. However, despite the fact that a qualifying rationale exists for classifying the programmes and schemes as mitigation or adaptation oriented, it is difficult to measure the magnitude of their impact as their objectives are not explicitly defined for climate change. Or sometimes, measurable outcomes data are not reported in the budget documents. There is also the complexity in comparing the budgetary allocations for identified climate change relevant programmes and schemes over the years, since there have been subsuming or closure of schemes and restructuring in Centrally Sponsored Schemes or Central sector schemes or transferring of schemes/ sectors to states.

2.2 How the policy framework on climate change - National Action Plan on Climate Change (NAPCC) - is aligned with programmes and schemes of GOI?

NAPCC is the major guiding programme at the Union government level for state governments to follow. It was launched in 2008, outlining the measures to promote sustainable development, while also yielding co-benefits to address climate change through its eight national missions. These missions included multi-pronged, long-term and integrated strategies for addressing climate change domestically. The Planning Commission estimated the total costs of implementing NAPCC at INR2,300 billion or approximately USD 37.16 billion³. The most obvious source of financing for the missions under NAPCC is government budgetary support. Out of the eight missions, five – National Solar Mission, National Mission for Enhanced Energy Efficiency (NMEEE), National Mission for Sustainable Agriculture (NMSA), National Mission for a Green India (NMGI) and National Water Mission (NWM) – appear as exclusive programmes of various ministries with disaggregated budget data in the Union Budget. However, the objectives of all the eight missions are operational through various programmes and schemes with built-in objectives similar to these missions. Table 1 lists such programmes and schemes, compiled after studying their objectives and outcomes in coherence with the mission's objectives.

³ Economic Survey, 2012-13



Table 1: Government of India's Schemes / Programmes as per Union Budget Document (2017-18) with objectives similar to NAPCC's mission objective

Eight Missions under NAPCC	Name of Government of India's Schemes / Programmes as per Union Budget Document (2017-18) with objectives similar to mission objective
National Solar Mission (NSM)	Grid Interactive Renewable Power (Solar Power), Off-Grid/ Distributed and Decentralised Renewable Power (Solar Energy), Research Development and International Cooperation (International Solar Alliance), Supporting programmes (Assistance to ISA), Autonomous bodies (National Institute of Solar Energy)
National Mission for Enhanced Energy Efficiency (NMEEE)	Conservation and Energy Efficiency
National Mission for Sustainable Agriculture (NMSA)	Rain-fed Area Development and Climate Change, National Mission on Micro-Irrigation, National Project on Management of Soil Health and Fertility (Soil Health Card), National Project on Agro forestry, <i>Paramparagat Krishi Vikas Yojana</i>
National Mission for Sustaining the Himalayan Ecosystem (NMSHE)	National Mission on Himalayan Studies under MOEF & CC, Polar Science and Cyosphere under MoES
National Mission for a Green India (NMGI)	Green India Mission, National Mission for a Green India, National Afforestation And Eco-Development Board, Intensification of Forest Management
National Mission on Strategic Knowledge for Climate Change (NMSCC)	Research and Development under Ministry of Science and Technology (climate change programme), Centre for Climate change under Ministry of Earth Sciences (MoES), Climate Change Research under MoES, Ocean Services, Technology, Observations, Resources Modelling and Science (O-STORMS) under MOES, R&D in Earth and Atmospheric sciences (MOES), Atmospheric Processes and Modelling and Services (MOES), Atmospheric Observation System Network, Atmosphere and Climate Research Observing Modelling Systems and Services (ACROSS)
National Mission on Sustainable Habitat (NMSH)	Not defined in budget document
National Water Mission (NWM)	National Water Mission under MoWR, National River Conservation Programme, Ground Water Management and Regulation, Irrigation Management Programme, National Ground Water Management Improvement Scheme

Source: Authors compilation from Budget & outcome Documents based on various programme guidelines



Contrary to NAPCC where its eight missions have some allocations marked in the Union Budget documents, state budgets seldom delineate the budgetary allocation for financing of SAPCCs. This is despite the fact that the combined budgetary requirement is of around Rs. 11,33,692 crore for implementation of the 31 SAPCCs. Only those missions of NAPCC which are operated as Centrally Sponsored Schemes are reflected in the state budget documents. Box 2 provides information on how the State Action Plan on Climate Change prioritises various interventions and presents a climate change financing framework.

So far, no institutional review for climate change, including the public expenditure, has been carried out at the Union government level. However, in an effort to estimate the extent to which a programme addresses climate change, governments at the sub-national level like in Kerala, Bihar, Chhattisgarh, Assam, Maharashtra and Odisha are now employing various tools to assess the 'climate change relevance' of various interventions. Some state governments have followed the UNDP's CPEIR methodology. According to an analysis report by UK-funded CSO Action on Climate Today (ACT), there are large differences in the level of climate change expenditure. For example, Bihar and Kerala have weighted climate change expenditure at 0.2% to 0.3% of GDP; Chhattisgarh at 0.7% to 0.8%; and Assam at 1.3%. These figures include funding, that is part of development expenditure as well as from climate funds, and includes grants from both domestic and international sources. This shows that the differences in estimates are caused mainly due to differences in sector priority within the budget and local climatic conditions. The Bihar government has allocated Rs. 68,500 crore for climate change sensitive departments in the current fiscal year.⁴

Box 2: How the State Action Plan on Climate Change (SAPCC) prioritises various interventions and presents a climate change financing framework

Assam has formulated an SAPCC mainly to help raise new funding for climate change. An early draft financial framework (FF) was prepared by November 2015. It covers existing financing (budget and climate funds); financing scenarios; resource allocation; Climate Change percent (CC%); Vision 2030 document; and includes climate change as a key goal.

Bihar has also prepared a SAPCC and a provisional exercise estimating costs of actions proposed has been undertaken. The draft financing framework focusses on options for improving the financial allocations for BAPCC actions.

Chhattisgarh's SAPCC has a draft financial framework which focusses on the financing scenarios and refining costings to be consistent with these. It makes forecasts on required expenditures and proposes a split between State and other partners for financing these.

Kerala's financing framework requires that actions are prioritized, costed and assessed for relative importance by use of a climate change relevance weight (CC%) and expenditure data is assessed and financing scenarios explored to arrive at an adaptation gap. The Kerala planning and budgeting system takes climate change into account and the State Government has approved the SAPFIN report as a useful framework.

In **Maharashtra**, an SAPCC was prepared in 2014. A first phase of CCFF work focussed on assessing the Benefit Cost Ratio for 5 actions and CC% for 13 actions to be used as part of a formal requirement for budget prioritisation.

Odisha was the first state to prepare an SAPCC 2010-2015, which identified the priority sectors and projects. It has since published a progress report and a successor action plan 2015-2020. It is looking to mobilise funding from various sectors.

Source: ACT Report Regional Dialogue on Financing Climate Resilient Growth in South Asia: Workshop Report November 2016

⁴ http://www.business-standard.com/article/economy-policy/bihar-allocates-rs-68-500-cr-for-climate-change-sensitive-departments-117092600920_1.html, Business Standard, 26 September 2017

2.3 What are the experiences of various countries for endorsing climate change responsive budgeting

It is, however, essential for climate change budgeting to be based on a robust methodology so that it proves to be an effective measure. The methodology needs to ensure mainstreaming of climate change actions with other national development plans and that allocated public resources are in balance with other priorities of ministries / departments at the national and state levels. While there have been efforts to assess the formal accountability systems of countries that will receive, generate, and manage substantial climate change funds, in particular CPEIR, little work has been done till date on assessments of climate change finance and their level of integration in the country's budgets.⁵

A methodological framework for Climate Change Responsive Budgeting (CRB) has been evolving within the purview of public finance management over the years across selected Asian and African countries including Morocco, Cambodia, China, Nepal, Philippines, Indonesia, Vietnam, Bangladesh, Ethiopia, Uganda, Burkina Faso, Tanzania, Samoa and Thailand (around 15 countries). These countries followed the UNDP developed guideline CPEIR as a starting assessment tool for finding the current status of climate change relevant public expenditure and for reviewing their existing policies and institutional frameworks on the issue.

In a nutshell, CPEIR is an approach to review and assess opportunities and constraints for integrating climate change concerns within the national and sub-national budget allocation and expenditure process. The CPEIR analytical framework has three key pillars: Policy Analysis, Institutional Analysis and Climate Public Expenditure Analysis. Policy and Institutional Analysis can be largely drawn from the existing policy and institutional architecture of a country while two approaches can be followed for weighing the relevance of Climate Change Expenditure under CPEIR.

Approach 1: CPEIR Climate Relevance Index based on rapid assessment of programmes on its relevance and their benchmarking as High, Medium, Low and Marginal depending on nature of programme objective and outcomes (See Table 2); and,

Approach 2: CPEIR Benefit Costs Ratio Approach which is based on economic assessment of the benefits for reducing climate change impacts associated with a specific programme.

Table 2: CPEIR Climate Relevance Index.

High relevance	Rationale	Clear primary objective of delivering specific outcomes that improve climate resilience or contribute to mitigation
Weighting more than 75%	Examples	<ul style="list-style-type: none"> • Energy mitigation (e.g. renewables, energy efficiency) • Disaster risk reduction and disaster management capacity • The additional costs of changing the design of a programme to improve climate resilience (e.g. extra costs of climate proofing infrastructure, beyond routine maintenance or rehabilitation) • Anything that responds to recent drought, cyclone or flooding, because it will have added benefits for future extreme events

⁵ For more information on more comprehensive climate finance system assessments and to access country databases of such assessments, visit: <http://climatefinance-developmenteffectiveness.org/about/what-cpeir>



Medium relevance	Rationale	Either secondary objectives related to building climate resilience or contributing to mitigation, or mixed programmes with a range of activities that are not easily separated, but include at least some that promote climate resilience or mitigation
Weighting between 50% to 74%	Examples	<ul style="list-style-type: none"> • Forestry and agroforestry motivated primarily by economic or conservation objectives, because this will have some mitigation effect • Water storage, water efficiency and irrigation motivated primarily by improved livelihoods because this will also provide protection against drought • Bio-diversity and conservation, unless explicitly aimed at increasing resilience of ecosystems to climate change (or mitigation) • Livelihood and social protection programmes, motivated by poverty reduction, but building household reserves and assets and reducing vulnerability. This will include programmes to promote economic growth such as vocational training, financial services and maintenance and improvement of economic infrastructure (roads and railways)
Low relevance	Rationale	Activities that display attributes where indirect adaptation and mitigation benefits may arise
Weighting between 25%-49%	Examples	<ul style="list-style-type: none"> • General livelihoods, motivated by poverty reduction, but building household reserves and assets and reducing vulnerability in areas of low climate change vulnerability • General planning capacity, either at national or local level, unless it is explicitly linked to climate change, in which case it would be high
Marginal relevance	Rationale	Activities that have only very indirect and theoretical links to climate resilience
Weighting less than 25%	Examples	<ul style="list-style-type: none"> • Short term programmes (including humanitarian relief) • The replacement element of any reconstruction investment (splitting off the additional climate element as high relevance) • Education and health that do not have an explicit climate change element

Source: A methodological Guidebook, CPEIR 2015



Under Approach 2 on CPEIR Benefit Costs Ratio, the climate change percentage (CC%) is defined as extent to which the benefits from the action are affected by climate change. This is done by estimating the benefits of an action both with and without climate change, and comparing these benefits, as follows:

$$CC\% = (B - A) / B$$

Where A = the benefits that would be generated by the action, if there was no climate change

B = the benefits that would be generated with climate change

Experts believe that basing climate change weights on benefits has the advantage to be more robust and rationale. It is seen that the estimates in the Climate Relevance Index are subjective and may lead to superficial efforts in 'greenwashing' of programmes. However, countries have followed both the approaches while carrying out the CPEIR study according to their capacity and local conditions.

Table 3 presents a comparison of the Experience of Different Countries using CPEIR over definitions of climate-related expenditure, their classification and weighing climate relevance and budget tagging procedures. On a first evaluation, there could be challenges in applicability of CPEIR in India such as —

- ❖ There is inevitably a degree of subjectivity in defining how relevant different types of expenditure are to climate change as most of programmes' objectives and outcomes are not explicitly defined as climate oriented interventions. This may lead to over or under estimation of climate change related expenditure.
- ❖ Currently, there are several climate change mitigation activities like installation of renewable energy, energy efficiency and climate resilient infrastructure development that are being implemented through public-private partnership. This makes the assessment of share of public (domestic) funding under these programmes and schemes difficult under the CPEIR methodological framework.
- ❖ Union Budget 2017-18 onwards, budget classification has been changed with merging of plan and non-plan expenditure, restructuring of central sector and Centrally Sponsored Schemes and presentation of budget heads as revenue and capital expenditure. This may lead to differences in the composition of public expenditure analysed by the Union and state governments, and affect coherence of information at the two levels of governance. It may also lead to confusion while comparing climate expenditure data over the years. This could affect the results arrived at after following the CPEIR methodology.
- ❖ There is no mechanism defined to assess the expenditure incurred for providing fuel subsidy under CPEIR as a climate negative activity.

Table 3: Comparison of the Experience of Different Countries using CPEIR

	Philippines	Indonesia	Nepal	Bangladesh
Definition and criteria of Climate-related Expenditure	<ul style="list-style-type: none"> Adaptation and mitigation definitions Use of policy areas in National Climate Change Action Plans (NCCAP) in definitions to guide screening climate related expenditures 	<ul style="list-style-type: none"> Mitigation only: direct and indirect actions Use of RAN-GRK priority areas as the basis but also recognise non-RAN-GRK areas 	<ul style="list-style-type: none"> Not split between mitigation and adaptation Based on a short-list of climate-related thematic areas, covering all economic sectors 	<ul style="list-style-type: none"> Adaptation and mitigation based on OECD Rio-Markers definitions
Classification/ Climate Change Typology	<ul style="list-style-type: none"> Typology based on NCCAP 8 priority areas 4 level typology covering: NCCAP priority area, sector, sub-sector to activity level 	There is no explicit typology. Climate-related expenditure is tagged by themes.	There is no typology.	Use of six thematic areas in BCCSAP in tagging.
Weighing Climate Relevance	<ul style="list-style-type: none"> The proportion of the expenditure that is climate relevant is subjectively estimated by policy managers. 	<ul style="list-style-type: none"> The scoring system has not yet been developed. 	<ul style="list-style-type: none"> Adopting a criteria system: Highly Relevant: above 60% of expenditures allocated to climate activities Relevant: 20-60% Neutral: below 20% 	The climate proportion is determined based on CPEIR-relevance index approach but assigning more specific percentages.
Design of the Tagging Procedure				
Entry Point	• Budget proposal	• Budget proposal	• Budget proposal	• Budget proposal
Level of information to be tagged	<ul style="list-style-type: none"> Tag at activity level Tagging across economic classification also 	• Tag at activity level	• Tag at programme level	• Tag at operational unit level and across economic classification
Budget Information System	<ul style="list-style-type: none"> Fully online and computerised Integrated to the existing information system which already incorporates other tags 	<ul style="list-style-type: none"> Partly integrated computer-based and partly manually tagged by MoF Retrofitted to the existing information system (use of the existing field to add climate change themes) 	<ul style="list-style-type: none"> Initially manually done Incorporated climate tag to the budget information system Limited to budget allocations only (no information on actual expenditures) 	• A parallel module linked to an integrated budget information system
Lead institutions	Both Department of Budget Management (DBM) and Climate Change Commission ³ (CCC).	Fiscal Policy Agency (MoF)	National Planning Commission	Finance Division, Ministry of Finance



Many countries are engaged in review studies on climate public expenditure and institutional mechanisms for implementation of interventions following the CPEIR methodology but a few have also started endorsement of recommendations from climate finance review in terms of making their budgets more climate change responsive. The efforts of some countries towards endorsing climate change budgeting are as follows:

- ❖ Some governments have started to track their “on-budget” climate change related finance by introducing tagging systems within their budgeting and/or accounting systems. In Asia-Pacific, Nepal was the first country to adopt climate change tagging (identification) in the budget, followed by Indonesia and the Philippines.
- ❖ **Nepal:** In 2012, Nepal incorporated the climate tag to the budget system at the programme level, classifying expenditures by the level of climate relevance.
- ❖ **Bangladesh:** The Government of Bangladesh adopted a Climate Fiscal Framework (CFF) in 2014 which proposes a climate expenditure tracking framework (CETF) to be applied to all line ministries' budget submissions and also tag on-budget ODA. The proposed CETF would weigh climate relevance and tag expenditure based on the six thematic priorities under the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009.
- ❖ **Philippines:** The Philippines mandated CBT in national budget submissions for all government entities in 2015 and piloted climate tagging in the Annual Investment Plan for Local Government Units (LGUs) by up-scaling to all LGUs in 2016. Other countries such as Bangladesh and Thailand have developed project appraisal guidelines for their planning and environment agencies to assess the impact of climate change on public investments.
- ❖ **Indonesia:** Since 2014, Indonesia has introduced mitigation budget tagging (Low Emission Budget Tagging and Scoring System-LESS) in key ministries to track resources spent to achieve the national emission reduction target of 26% by 2020. In 2014, LESS was also implemented in 3 central provinces to pilot mitigation expenditure tagging at the local level.

3. Proposed Framework of the Statement

The analytical framework for assessing climate relevant expenditure and turning budgets climate change responsive entails two major steps: (A) Identification of climate-relevant expenditure, and, (B) Assessing the proportion of expenditures that is related to climate change. The following section also discusses a suggested framework for Introducing the Climate Budgeting Statement.

3.1 Identification of Climate Relevant Expenditure

The first step in assessing the GOI's climate related expenditure is having eligibility criteria for qualifying as climate change intervention. There is no specific definition of climate change intervention as mitigation and adaptation in the government's policy documents. However, NAPCC, which was introduced in 2008 as a national strategy for climate change action, explains adaptation and mitigation as follows: Adaptation in the context of climate change comprises measures taken to minimise the impact of climate change while mitigation comprises measures to reduce greenhouse gas emissions that cause climate change in the first place.

The NAPCC's definition of climate change mitigation and adaptation is not as comprehensive when compared to the Philippines, which has used policy areas stipulated in its National Climate Change Action Plan (NCCAP) to guide the screening of climate related expenditures. However, following the NAPCC framework for setting criteria for identification of climate related expenditure in India may lead to under estimation of the outlays required. The major reason for under estimation is that most programmes and schemes currently under implementation are not yet aligned to the eight missions of NAPCC. Four new missions were announced in 2017, which are still to be added to the NAPCC. These are the missions to promote wind energy, to build preparedness to deal with impacts on human health, to effectively manage India's coastal resources, and to harness energy from waste. Hence, following the NAPCC criteria for identification of climate related expenditure as a CPEIR recommendation might lead to inaccurate assessments.

The Organisation for Economic Co-operation and Development's(OECD) Rio Marker definition of climate change mitigation and adaptation is generally followed by various countries for reporting their national communication on climate change with the UNFCCC. The Rio Marker definition can, therefore, be easily followed for attributing the nature of programmes / schemes under implementation as climate change adaptation or mitigation in India (See Box 3 on OECD Rio Marker Definition of Climate Change Mitigation and Adaptation). Apart from the comprehensive nature of the OECD definition, the other advantage is its acceptability as by various bilateral and multilateral funding agencies providing climate finance to India.



Box 3: OECD Rio Marker Definition of Climate Change Mitigation and Adaptation

Climate Change Mitigation: Activity contributing to the objective of stabilisation of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by promoting efforts to reduce or limit GHG emissions or to enhance GHG sequestration.

Climate Change Adaptation: An activity intends to reduce the vulnerability of human or natural systems to the current and expected impacts of climate change, including climate variability, by maintaining or increasing resilience, through increased ability to adapt to, or absorb, climate change stresses, shocks and variability and/or by helping reduce exposure to them. This encompasses a range of activities from information and knowledge generation, to capacity development, planning and the implementation of climate change adaptation actions.

Source: OECD DAC Rio marker for Climate, Handbook

3.2 Assessing the proportion of expenditures related to Climate Change

The method most in use for assessing the proportion expenditures relevant to climate change is the CPEIR Climate Relevant index which categorises government interventions as High, Medium, Low and Marginal relevance (4 categories) based on perceptions of various stakeholders and expert committees constituted for the specific purpose. All activities are grouped into the four categories with the corresponding weights, and then applied to the programme expenditures in order to quantify the climate-relevant expenditures. There is some concern on assigning percentage to relevance categories as it could exclude schemes that are marginally above or below the assigned percentage limit despite having large amount of expenditure value. Percentage-based benchmarking is therefore not practical as it may lead to inefficiency in assessing expenditure related to climate change. A similar debate on "avoiding benchmarking" has been raised by several civil society organisations (CSOs) for the Gender Budget Statement (GBS) which currently requires ministries to use two-way category formats as the basis of presentation of GBS in the Union Budget. The two categories cover: Part A) Pro-women allocation where 100 percent provision is meant for women, Part B) Pro-women allocations where between 30 to 99 percent provision is meant for women (see an excerpt from Budget circular on GBS format in Box 4). This approach restricts the implementing department merely to quantifying the proportion of budget spend on gender mainstreaming. Gender need-based planning, budgeting and implementation have been advocated rather than the mere quantification exercise being practiced by most departments. There is a need for capacity building of implementing agencies to identify gender-based issues and design programmes / schemes accordingly.

Box 4: Existing Format of Gender Budget Statement

STATEMENT NO.20

APPENDIX XXII
(See Paragraph 14.6)
FORMAT FOR FURNISHING INFORMATION ON 'GENDER BUDGETING'
(i) 100% provision towards women

Demand No :

Name of the Ministry/Department : (₹ in crores)

Details of Scheme	BE 2016-17			RE 2016-17			BE 2017-18
	Plan	Non Plan	Total	Plan	Non Plan	Total	Total

(ii) Pro-women (at least 30% of provision)

Demand No :

Name of the Ministry/Department : (₹ in crores)

Details of Scheme	BE 2016-17			RE 2016-17			BE 2017-18
	Plan	Non Plan	Total	Plan	Non Plan	Total	Total

Note: Two separate statements in the format prescribed above may be furnished

Director (Budget)/Deputy Secretary (Budget)
Ministry/Department
Tel. No.

To
Shri T. Uthaya Kumar
Additional Budget Officer, Ministry of Finance,
Department of Economic Affairs, North Block, New Delhi

Source: Budget circular 2017-18 issued by Government of India, Ministry of Finance, Department of Economic Affairs (Budget Division) issued on 21st September, 2016.

Several budget groups and CSOs in India have observed that the Gender Budget Statement currently does not provide any information verifying that the listed schemes qualify in terms of at least 30 percent provision (Part B of the statement). The civil society groups have demanded introducing a narrative statement under the provision for women category (Part B) that gives the rationale for listing schemes with different proportions.

The lesson learned from the GRB experiences for designing a climate change responsive statement is that it is imperative to include a detailed rationale in the form of a narrative statement while assigning climate change relevant expenditure under a programme.

Following the identification of programmes / schemes as adaptation and mitigation interventions, the decision of assigning proportion can be left to the expert group of the ministries which are planning outcomes for the next financial year. It is suggested that the expert group include members with environment expertise and be headed by an official from the Ministry of Finance (MoF). A climate change budgeting cell on the lines of the existing Gender cell can be established in each ministry/department to scrutinise the programme design, implementation plan and outcome budget, and to prepare the rationale of allocations for designing an interim budget statement for later discussion with MOF on raised detailed Demand for Grants.

This approach benefits from the participation and contribution of key stakeholders is less time consuming and encourages government officials to consider climate impacts and risks in future policy and activity formulation. This approach, like those followed internationally, however, does not entirely eliminate the risks of inflating climate relevance given that the benefits are subjectively estimated. Therefore, the expert opinions can be complemented by international and technical studies such as the Intergovernmental Panel on Climate Change (IPCC) and other regional/national assessments.



A suggested format for furnishing information on a CRB statement by various ministries is provided below (Table 4). The format seeks two separate statements on mitigation and adaptation related programmes/ schemes from the ministries.

Table 4: Proposed Format for furnishing Information on Climate Change Responsive Budgeting Statement

Statement No. XX												
Format for furnishing Information on Climate Change Responsive Budgeting Statement												
Demand No.:.....												
Name of the Ministry /Department:.....												
Part A. Climate change Mitigation (Interventions for stabilising GHGs)												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Name of Scheme/ Programme</th> <th style="width: 25%;">Objective(s) of Scheme/Programme</th> <th style="width: 25%;">Rationale for Considering scheme as climate change relevant</th> <th style="width: 25%;">Budget Outlays</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Name of Scheme/ Programme	Objective(s) of Scheme/Programme	Rationale for Considering scheme as climate change relevant	Budget Outlays								
Name of Scheme/ Programme	Objective(s) of Scheme/Programme	Rationale for Considering scheme as climate change relevant	Budget Outlays									
Part B. Climate change Adaptation (Interventions to reduce vulnerability or increase resilience to CC)												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Name of Scheme/ Programme</th> <th style="width: 25%;">Objective(s) of Scheme/Programme</th> <th style="width: 25%;">Rationale for Considering scheme as climate change relevant</th> <th style="width: 25%;">Budget Outlays</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Name of Scheme/ Programme	Objective(s) of Scheme/Programme	Rationale for Considering scheme as climate change relevant	Budget Outlays								
Name of Scheme/ Programme	Objective(s) of Scheme/Programme	Rationale for Considering scheme as climate change relevant	Budget Outlays									

Source: Author's suggested format for CRB statement

3.3 Proposed framework for introducing the Climate Responsive Budgeting Statement

After the two steps of identifying climate relevant programmes as adaptation and mitigation and assigning proportion of budget outlays based on the perception of the expert group, the coordinating ministry could submit the statement on climate change budgeting with MoF following scrutiny of the expert committee/cell. Table 5 provides coordinates of the framework for introducing the climate budgeting statement, that are leading institutions, entry points, definition and criteria of climate-related expenditure, level of information to be tagged, proportion of budget for allocation as climate expenditure.

Table 5: Proposed framework for introducing the climate budgeting statement

Coordinates	About	Guiding / Source document
Leading institution	Climate change finance unit, Ministry of Finance	their own assessment of climate relevance of programme supported by international report such as IPCC or India' national action plan on climate change or nationally determined contributions to climate change (INDCs) or other assessment studies by think tanks
Entry Point	Climate Change Responsive Statement for Raising Demands For Grants	CRB Statement Format given in budget circular issued by ministry of finance every year in month of August
Definition and criteria of Climate-related Expenditure	Identification programmes / schemes supported through Union Budget as climate relevant (adaptation and mitigation)	<ul style="list-style-type: none"> • OECD Rio Marker definition • Programme Design Document • Outcome Document
Level of information to be tagged	Tag at Programme level	Programme Design Document
Proportion of budget for allocating as climate expenditure	The proportion of the expenditure that is climate relevant is estimated by expert committees/ climate budget cell operated under aegis of coordinating ministry for a CC relevant programme	<ul style="list-style-type: none"> • Programme Design Document • Outcome Budget • Target Set In Annual Plan • IPCC assessment on GHG emissions • National communication on Climate Change

Following steps can be followed to institutionalise CRB in the budgetary process:

- ❖ Appointment of centralised Expert Group Committee on CRB by the climate change finance unit under MoF to discuss framework for climate budgeting and design the institutional mechanisms for implementing it at the level of coordinating ministries.
- ❖ Reporting of climate responsive spending to be made mandatory by all ministries and agencies, from the following year onwards, in the Budget circular providing a format for furnishing information on CRB.
- ❖ Consolidation of detailed Demands for Grants raised in the Budget circular on climate spending of the ministries by MoF and preparation of a statement on “climate change responsive budgeting” to be opened in the Expenditure Budget, Volume 1., followed by a debate in Parliament during the Budget Session.

4. Possible Challenges and Way Forward

Some of the possible challenges for adopting CRB in India could be as follows:

- ❖ Budget 2017-18 onwards, budget classification has changed with merging of plan and non-plan expenditure, restructuring of central sector and Centrally Sponsored Schemes and presentation of budget heads as revenue and capital expenditure. This may lead to differences in the composition of public expenditure analysed by at the Union and state governments, and affect coherence of information at the two levels of governance. It could also lead to confusion while comparing climate expenditure data over the years.
- ❖ Successful implementation of Climate Change Responsive Budgeting largely depends on how the various sectoral ministries articulate the climate change considerations in designing and implementation of their programmes / schemes. The government already has a Gender Budget Statement, Tribal Sub Plan Statement and Scheduled Caste Sub Plan Statement, as well as a Child Budget Statement in place since almost a decade ago. However, implementation has remained inadequate, the reason being lack of effective monitoring mechanisms and lack of proper articulation of social issues in designing, planning and budgeting of programmes / schemes. Similar shortcomings have been observed in monitoring during implementation of CRB statement, which can make the overall objective redundant. Hence, monitoring, reporting and verification indicators need to be put in place for implementation of CRB statement in a transparent and accountable manner.
- ❖ On the face of it, the Ministry of Environment, Forest and Climate Change is the “nodal” ministry to implement a systematic response to climate change. However, MoF, with its climate change finance unit, may have larger influence over existing patterns of expenditures. Thus, lack of coordination at the central level for implementing climate responsive budgeting could be a challenge faced ahead.
- ❖ Currently, there are several climate change mitigation activities like installation of renewable energy, energy efficiency and climate resilient infrastructure development that are being implemented through public-private partnership. This makes the assessment of share of public (domestic) funding under these programme and schemes difficult.

As a way forward, piloting at the state level (one or two climate vulnerable states) could be carried out to demonstrate the economic benefits of climate responsive budgeting to create an enabling condition and readiness for CRB implementation. This would provide a better understanding on the economic benefits of investing in climate change response, and on how the related programmes contribute jointly to long-term objectives such as inclusive growth, domestic revenue mobilisation, and result in transparency and accountability.

Integrating the climate responsive budgeting framework with the existing State Action Plan on Climate Change could be carried out for all 31 states to assess the extent of contribution from public financing

vis-a-vis other resources such as international or private investment. At the Union government level, clear tools and guidance to line ministries and relevant departments are essential for CRB implementation. Also, training on climate budgeting should be considered in the context of broader capacity building efforts, from raising awareness on climate change to integrating climate change into the budget process, as well as managing domestic and international climate finance sources.

In order to understand the effectiveness of climate finance, it is important to trace the path of fund flow from the source to its ultimate beneficiary. Once the flow of funds and its impacts are mapped, the transparency of public climate finance would be enhanced, facilitating timely intervention by any regulatory authority. It is important to lay down a transparency and monitoring framework while tagging budget with climate financing. In order to achieve this, CRB needs to be implemented following appraisal on data generated by CRB over the years and estimates of public and international climate finance sources against the financing needs. This will guide the prioritisation of climate actions by the government.



Summary of discussions in various years' Economic Survey of India on GOI's expenditure on climate change

Economic Survey	Discussion on GOI's expenditure on climate change
2009-10	Current government expenditure in India on adaptation to climate variability exceeds 2.6 per cent of the GDP, with agriculture, water resources, health and sanitation, forests, coastal zone infrastructure and extreme events being specific areas of concern.
2010-11	India implements a series of Central sector and centrally sponsored schemes under different Ministries/ Departments aimed at achieving social and economic development. Many of these schemes contain elements (objectives and targets) that are decidedly geared to adaptation. In other words, there is substantial adaptation orientation in many of the sectoral schemes currently under operation. India's expenditure on these adaptation-oriented schemes has increased from 1.45 per cent of GDP in 2000-01 to 2.84 per cent in 2009-10
2011-12	At the domestic level, the assessment of financial requirements and provision of resources for meeting the needs of low-carbon inclusive growth in the country are also under discussion in various inter-ministerial forums. Though alternative sources, including the private sector, can be explored to fill the gaps between the demand and supply of climate finance, public finance should be at the core to ensure predictability and reliability of flow of funds to developing countries.
2012-13	The most obvious source of financing for climate change action is government budgetary support. Most of it would come as sectoral finance since some of the resources for adaptation and mitigation are built into ongoing schemes and programmes. Although mitigation is sometimes an important co-benefit, deployment of resources for such purposes is largely guided by the overall availability of resources. India's actions for climate change will, therefore, need to be financed from a pool of resources consisting of domestic resources, international carbon finance, and multilateral funds
2013-14	The Planning Commission Final report on Low Carbon Strategies for Inclusive Growth projects cumulative costs of low carbon strategies between 2010 and 2030 at an estimated USD 834 billion at 2011 prices.
2014-15	India is revisiting National Missions under the NAPCC in the light of new scientific information (IPCC AR5) and technological advances; exploring possibilities of new missions on wind energy, health, waste to energy, and coastal areas; and redesigning the National Water Mission and National Mission on Sustainable Agriculture. A combined budgetary requirement of around Rs. 11, 33,692 crore has been estimated for implementation of the 31 SAPCCs.
2015-16	Mobilising finance is critical to achieving the ambitious targets set by India. Preliminary estimates suggest that at least US\$ 2.5 trillion at 2014-15 prices will be required for meeting India's climate change action under the INDC between now and 2030. While the maximum share of the country's current climate finance comes from budgetary sources, India is not relying solely on them and is experimenting with a careful mix of market mechanisms together with fiscal instruments and regulatory interventions. However, it needs to be emphasised that international finance is a critical enabler for the scaled up climate action plans.
2016-17	The Paris Agreement, which came into effect on 4th November 2016, sets the path for post-2020 actions based on Nationally Determined Contributions (NDCs) of the parties. The pre-2020 action, including mobilisation of USD 100 billion per year, was a key element of the Proclamation. The 22nd Session of the Conference of Parties (COP 22) to UNFCCC was held from 7-19 November 2016 in Marrakech, Morocco. The main thrust of COP 22 was on developing rules and an action framework for operationalising the Paris Agreement and advance work on pre-2020 actions. The detailing exercise will include accounting of the NDCs, adaptation communication, building a transparency framework and global stock taking every five years.

Source: Economic survey of India, Various years



List of ministries with programmes outcomes/objectives relevant for climate change (Indicative list)

Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
1	Ministry of Agriculture and Farmers Welfare	1	National Mission on Sustainable Agriculture (NMSA)	Its mission described under National Action plan on climate change/ Scheme's Outcome document for states enhancing tree cover 25000 hectare as one of the outcome under NMSA.	<ul style="list-style-type: none"> • Preservation of the CO₂ storage capacity (improves carbon sequestration) of vegetation cover (mitigation) • Contribution to the preservation of water resources or soil erosion prevention to adapt to the effects of climate change (adaptation) 	Mitigation and Adaptation
1	Ministry of Agriculture and Farmers Welfare	1	<i>Pradhan Mantri Krishi Sinchai Yojana</i>	This scheme will provide end to end solutions in irrigation supply chain, viz. water sources, distribution network and farm level application. The programme will mainly focus on increased agricultural production and productivity by increasing availability and efficient use of water.	Water use efficiency is an climate change mitigation as well as adaptation interventions which lead to energy conservation and better adaptability to climate change particularly of drought prone areas	Adaptation
1	Ministry of Agriculture and Farmers Welfare)	1	Rain-fed Area Development and Climate change	Promoting Integrated farming system (multi-cropping, rotational cropping, inter-cropping, mixed cropping practices with allied activities) to enable farmers to enhance farm returns and to mitigates the impacts of drought, flood or other extreme weather events through conservation technologies and protective / life-saving Irrigation.	<ul style="list-style-type: none"> • It can be considered as Sustainable climate-resilient farming strategy. • Promoting diversified agricultural production to reduce climate risk (e.g. growing a mix of different crops and different varieties of each crop) (adaptation) • Promoting heat and drought resistant crops and water saving irrigation methods to withstand climate change (adaptation). 	Adaptation
1	Ministry of Agriculture and Farmers Welfare	1	National project on Agroforestry	National Project on Agro-Forestry under National Mission on Sustainable Agriculture (NMSA) to give specific focus on Development of Agroforestry. National Agro-Forestry Policy was brought out in 2014 to bring about coordination, convergence and synergy among various elements of Agro-Forestry.	Agroforestry can add a high level of diversity within agricultural lands and with it, an increased capacity for supporting numerous ecological and production services that impart resiliency to climate change impacts. It act as improving carbon sinks of the country and proves also as mitigation strategy.	Adaptation and mitigation

Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
4	Ministry of Chemicals and Fertilizers	6 & 7	City Compost	Use of city compost to enhance agricultural output and gainful use of urban waste ; increased usage of bio fertilizer and increase in agriculture output for ecological benefit.	Effective waste management systems that protect water resources or fragile ecosystems and strengthen their resilience to the impacts of climate change can score against adaptation.	Adaptation
6	Ministry of coal	10	Environmental measures and Subsidence Control.	Rehabilitation of labour in case of natural disaster in mines , R & D programme- Sustainable livelihood activities on reclaimed open cast coal mine.	Changes in the design of open pit mines to adapt to flooding due to increased precipitation can be scored against adaptation or Activity to support the early recovery and reconstruction as well as establishment of resilient society / community.	Adaptation
14	Ministry of Drinking water and Sanitation	24	National Rural Drinking Water Programme (NRDWP)	Objective is ensuring provision of safe and adequate drinking water supply through hand-pumps, piped water supply etc. to all rural areas, households and persons.	It is part of broader initiatives to supply clean drinking water, which will also increase the resilience of the population to the effects of climate change (adaptation)	Adaptation
15	Ministry of Earth Sciences	25	Atmosphere and climate Research Modelling Observing Systems and Services (ACROSS) and Ocean Services Technology observation Resources Modeling and Sciences - (O-STROMS)	1) ACROSS - Probabilistic Forecast, Weather based crop and local specific agro- advisories, Himalayan metrological activities; 2) O-STROMS is coastal mission under NAPCC	Prediction and forecasting of weather improves response to sudden climatic changes and strategising for improved resilience to climate change.	Adaptation



Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
7	Ministry of Commerce and Industry	12	Indian Leather development Programme	More number of Common effluent treatment plan and solid waste management system (outcome).	Common effluent treatment plan designed to protect the quality and quantity of existing water resources in the face of climate change, e.g. through the recycling of wastewater. It builds additional resilience, in the face of multiple hazards including climate change.	Adaptation
8	Ministry of communication	13 & 14	National optical fiber Network (NOFN)/ Bharat Net	Access of ICT applications in all Gram Panchayats in India (give impetus to early warning system in case of disaster).	Promoting disaster preparedness and the links to climate change adaptation at various levels of government as well as at community level.	Adaptation
9	Ministry of consumer Affairs , Food and public Distribution	15 & 16	Construction of food storage Godowns by FCI	up gradation of godowns.	improved food security as response to climate change.	Adaptation
13	Ministry for Development of North Eastern Region	23	Schemes related to IFC & WSM sector	Protection of cultivable land from soil erosion , improved irrigation and safe drinking water - (Climate change adaptation).	Developing or enhancing systems for monitoring drinking water, improved irrigation in areas affected by floods as a consequence of climate change.	Adaptation
17	Ministry of Environment, Forests and Climate Change	27	National mission for Green India and all the programmes	Programme objective is to increase the forest cover and to protect the existing forest land; the Ministry has two plan schemes namely, Green India Mission and Intensification of Forest Management.	It improves carbon sequestration and reduces GHG in the atmosphere(mitigation) conserve ecosystem/biodiversity (adaptation). It part of India's NAPCC and declared INDCs under Paris agreement.	Mitigation and Adaptation
21	Ministry of Health and Family Welfare	42	NRHM-Health system strengthening for improved reliance to climate change	Establishing a fully functional, community owned, decentralized health delivery system with inter-sectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality.	Health programmes to adapt to climate change, such as the implementation of measures to control heat stress or vector borne diseases in areas threatened by increased incidence of diseases due to climate change.	Adaptation
43	Ministry of Science and Technology	43	Biotechnology Research & development	Functional technology for waste to energy generation.	Effective waste management systems that protect water resources or fragile ecosystems and strengthen their resilience to the impacts of climate change can score against adaptation.	Adaptation



Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
22	Ministry of Heavy industries	44	Development of Advanced Ultra Supercritical Technology for Thermal power plants	The objective of this scheme is to undertake R&D and all aspects of AUSC Technology for Thermal Power Plants in order to improve power plant efficiency reduce Carbon-dioxide emissions and reduce coal consumption as well as also establishing demonstration power plant based on the developed technology. Provision has been kept for this R&D project.	Energy efficiency measures is normally deployed to reduce greenhouse gas emissions. It involves the substitution of older technologies with new technologies or processes are more efficient than those normally used in generation.	Mitigation
23	Ministry of Home Affairs	46	Disaster Management (National Cyclone Risk Mitigation Project)	Responsible for response, relief and preparedness for natural calamities and man-made disasters.	This scheme will result in lesser loss of life and property in the cyclone affected areas. Activities aims at reducing the vulnerability (or strengthening the resilience) of the population, the economy, and its infrastructure against the short-term negative consequences of climate change related disasters.	Adaptation
22	Ministry of Heavy industries and Public enterprises Ministry of Housing and Urban Poverty Alleviation	44	Scheme for Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicle in India - (FAME - India)	Through this scheme Department has taken initiative for introducing Electric/Hybrid transportation in the country under National Electric Mobility Mission Plan (NEMMP) Scheme 2020 to provide clean mobility solutions to the people while reducing the country's dependence on fossil fuel.	Electrical mobility leads to reduction in GHG emission.	Mitigation
24	Ministry of Housing and Urban Poverty Alleviation	56	<i>Pradhan Mantri Awas Yojana</i> (Urban)	Availability of different affordable disaster resistant technologies for construction of houses.	Urban development activities often address environmental and climate issues like Energy efficiency planning in cities, solar roof top technologies (mitigation) and (counteracting overheating in urban areas with use of insulating and seismic resistant construction material)	Mitigation and Adaptation

Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
24	Ministry of Housing and Urban Poverty Alleviation (Demand No.56)	56	PMAY Building Materials & Technology Promotion Council (BMTPC)	Preparation of 3rd edition of Vulnerability Atlas of India for 36 states/UTs <ul style="list-style-type: none"> • Availability of different affordable, disaster resistant technologies for construction of houses • Availability of skilled manpower 	It's a response to climate change following affordable, disaster resistant technologies for construction of houses.	Adaptation
29	Ministry of Micro, small and Medium Enterprises	64	Zero Defect Zero Effect (ZED) Scheme	Improvement in competitiveness of MSMEs in terms of - Quality of products and Environmental compliances.	Effective industrial pollution control system that protect water resources or fragile ecosystems and strengthen their resilience to the impacts of climate change. Improvements in processes and cleaner production (e.g. cement, chemicals) can bring mitigation benefits.	Mitigation and Adaptation
32	Ministry of New and Renewable Energy	67	Grid Interactive Renewable Power	Provision of central financial assistance will be used for Grid Interactive Power Capacity from Solar, Wind, Small Hydro Power and Bio Power. Further, Union Government component in Intra state Transmission Lines under the Green Energy Corridor Scheme for Renewable Energy Transmission infrastructure will also be implemented.	The main objective of renewable energy production is typically to reduce GHG emissions through project development or the creation of enabling environments for technologies necessary to expand renewable generation.	Mitigation
38	Ministry of Power	74	Energy conservation	Saving of 4.00 Billion Units of energy during 2017-18.	This is mitigation related intervention.	Mitigation
41	Ministry of Road Transport and Highways	81	Improving and strengthening of Public transport	No. of buses converted to electric buses.	Switching to electric mobility, hydrogen power, liquefied natural gas, and hybrid engines lead to reduction of GHG emissions due to fuel switching.	Mitigation
42	Ministry of Rural development	82 and 83	Mahatma Gandhi National Rural Employment Guarantee (MNREGA)	Wage employment to those seeking wage Employment under the Act. Livelihoods security through creation of permanent community assets.	It includes measures to increase resilience of population or ecosystems in rural areas to climate change.	Adaptation
44	Ministry of Shipping (India)	87	Inland water ways	Improved connectivity with clean medium of transport.	A measure to shift from road to water transportation can significantly reduce GHGs.	Mitigation



Code No of the Ministry	Ministry/ Department	Demand No.	Programme/ Scheme	Scheme description/ objectives/components/ outcomes	Rationale for Considering programme/schemes as climate change relevant	Nature of the programme
45	Ministry of skill Development and Entrepreneurship	88	Apprenticeship and Training	Availability of skilled industrial workforce.	It could be a measure to deploy skilled technicians for operation and maintenance of installed renewable energy capacity.	Adaptation
47	Ministry of Space	91	INSAT Satellite System	Augmentation of INSAT/GSAT transponder capacity to ensure continuity of satellite based Communication services with improved capability.	Better earth information system improves early warning and preparedness measures in case of sudden climate change triggered natural disasters such as floods, landslides, hail storms etc.	Adaptation
48	Ministry of Statistics and Programme Implementation	92	Members of Parliament Local Area Development Scheme (MPLADS)	Creation of durable public assets based on local needs and national priorities.	Durable construction process improves climate resilience .	Adaptation
52	Ministry of Tribal Affairs	96	<i>Vanbandhu Kalyan Yojana</i>	Development of Particularly Vulnerable Tribal Groups.	Climate change impact non-timber forest produce (NTFP) and effect nutrition, economic and health well being of tribal. Scheme supports tribal population such as Creation of more employment through productivity enhancement in agriculture sector, Increase in animal husbandry and dairy based activities, Quality skill training for tribal youth.	Adaptation
53	Ministry of Urban Development	97	Atal Mission for Rejuvenation and Urban Transformation	Substantial improvement in coverage of sewerage/ septage facility to households in Mission cities , Reduced incidences of Urban flooding in all Mission cities , Increased amenity value of all Mission cities by improved green cover.	Improves cities climate resilience.	Adaptation
54	Ministry of Water Resources, River Development and Ganga Rejuvenation	98	Implementation of National Water Mission under NAPCC	(i) Increase in water use efficiency & establishing National Bureau of Water Use Efficiency (ii) Sustainable management of water resources	Water resources conservation is particularly important for climate-resilience, especially if climate change risks include water shortages or high fluctuations in available water resources or poor water quality.	Adaptation

Source: Authors' compilation from Union Budget and Outcome budget 2017-18, Ministry of Finance

About CBGA

CBGA is an independent, non-profit policy research organisation based in New Delhi. It strives to inform public discourses through rigorous analysis of government budgets in India; it also tries to foster people's participation on a range of policy issues by demystifying them.

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