

# **Climate Change-responsive Public Expenditure in India: An Empirical Analysis**

No. 298

21-February-2020

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**New Delhi**

## Climate Change-responsive Public Expenditure in India: An Empirical Analysis

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### Abstract

The paper examines the links between national plan on climate change and the fiscal stance across sectors in the context of Union government in India, against the analytical backdrop of environmental federalism. We have mapped the National Action Plan on Climate Change in India to the Demand for Grants across all the ministries and departments to arrive at an estimate for the public expenditure on adaptation, mitigation and regulatory spending relate to climate change. The mapping of National Action Plan on Climate Change to the budgetary allocations across sectors undertaken in this paper is illustrative and open-ended. Given the data constraints, we identified that specifically targeted expenditure on climate change related programmes is around 5-6 per cent of total expenditure in the national budgets. However, there is significant deviation between the budget estimates and the actual spending. The fiscal slippage is analyzed to understand the Climate Change budget credibility. The sustainability of the link between fiscal stance and climate change depends on integrating budget codes in the classification of budgetary transactions, through a clear road map by the Ministry of Finance. As such, the financing of climate change is highly fragmented in India at sectoral levels and calls for a macroeconomic policy framework.

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<sup>1</sup> The authors are respectively Economist and Professor at National Institute of Public Finance and Policy. This paper is the first in the series of Climate Change-related Expenditure, undertaken as part of Gates Foundation project titled “Public Finance Innovations”. The authors sincerely acknowledge the discussions with Rathin Roy and Pinaki Chakraborty.

## Introduction

Despite the global recognition of fiscal determination of environmental quality and its gaining prevalence in the public policy circles, there have been relatively a few studies on this topic. Specifically, the empirical treatment of climate change-related expenditure is scarce. This paper analyses the role of national government in translating the climate change policy commitments into budgetary commitments. We have mapped the National Action Plan on Climate Change in India to the Demand for Grants across all ministries and departments to arrive at an estimate for the public expenditure on adaptation, mitigation and regulatory spending relate to climate change.

According to principle of subsidiarity, the responsibility for providing a particular service should be assigned to the smallest jurisdiction whose geographical scope encompasses the relevant benefits and costs associated with the provision of services. Such decentralization of public decision making in environmental issues allows outputs of public services to be tailored to the particular circumstances - the tastes of the residents, the costs of production and any other particular local features- of each jurisdiction<sup>2</sup> (Oates, 1998). Simultaneously, there is a complex component of the choice of regulatory jurisdiction involving the potential for regions to compete one another to attract mobile capital by lax environmental standards. Oates and Schwab (1988) examined the interjurisdictional competition over environmental regulation in a model in which many states compete to attract mobile capital to a polluting industry. It is beyond the scope of this paper to analyse the decentralized fiscal stance for climate change across 28 States in India. It will be the follow up publications to this research, for selected States. The unit of analysis in this paper is across sectors, over time, for the national level of government.

This paper aims to take on the rare gamut of empirics by examining the link between climate change commitments and the fiscal stance. Apart from the introduction, section II deals with the theoretical framework while section III translates the public policy framework on climate change commitments. Section IV interprets the fiscal stance on climate change across sectors, analyzing all the Demand for Grants across ministers and departments in a multi-sectoral framework. Section V concludes.

### 1. The Analytical Framework

In literature, the '*race to bottom*' and '*pollution haven hypothesis*' often address these issues of trading lower environmental quality for more mobile capital<sup>3</sup>. In a federal setup,

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<sup>2</sup> In the context of heterogeneity in preferences, the advantages of assigning allocation function to the sub national governments have been dealt extensively in the theory of fiscal federalism. The genesis can be traced back to Oates (1972). Musgrave's three-fold categorization of the functions of the government- allocation, distribution and stabilization – also argues that allocation issues are motivated largely through heterogeneity in preferences (Musgrave, 1959).

<sup>3</sup> Empirical evidences revealed a continuous tension between 'principle of subsidiarity' and 'one size fills all' paradigms. Maaschricht Treaty for European Union states that action at the jurisdictional-level is

Oates (2001) envisions three benchmark cases under which ambient environmental standard to be met in each of the jurisdictions that make up the whole nation. This section is entirely drawn from Oates (2001) framework.

*Three standard-setting functions* of environmental quality have been developed within the intergovernmental hierarchy. The first case considers environmental quality as a *pure public good* for the nation as a whole; the second prototypical case considers environmental quality as a *pure local public good* and the third case, which is most common in practice, deals with the effects of interjurisdictional externalities and Coasian-type negotiations.

*(1). Environmental Quality is a Pure Public Good: Centrally determined standard-setting function*

This benchmark case considers that the vector of environmental quality ( $Q_i$ ) is a function of aggregate level of emissions from all sources in the nation ( $E$ ).

$$Q_i = f \{ E \} \quad (1)$$

The critical property of this function is that a unit of polluting emissions has the same effect on the vector of national environmental quality regardless of where it takes place; a unit of emissions in jurisdiction  $i$  is a perfect substitute in this sense for a unit of emissions in jurisdiction  $j$ . In other words, there exists a standard sort of interjurisdictional externality (as emissions in any given jurisdiction spill over and degrade the environment in other jurisdictions).

Global warming and depletion of ozone layer falls under this category. For these matters, environmental quality is a *global public good*. For instance, a unit of CFC or CO<sub>2</sub> emissions has the same effect on global environmental quality irrespective of its location; and these issues require a global solution.

*(ii) Environmental Quality is a Pure Local Public Good: Decentralized Determination of standard-setting function*

This prototypical case considers the level of environmental quality in the  $i^{\text{th}}$  jurisdiction as a function of level of emissions of pollutants ( $e_i$ ) in that jurisdiction alone.

$$Q_i = f \{ e_i \} \quad (2)$$

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justified "only and insofar as the objectives of the proposed action, be better achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community<sup>31</sup>". In US, there exists an inconsistent amalgam of decision structures related to environmental management. For instance, the standards for setting ambient air quality in terms of permissible concentrations of pollutants is a *centrally determined* by U.S Environmental Protection Agency (EPA) under Clean Air Act (Amendment), 1970; while U.S Congress directed the States to set standards for water quality within their own jurisdictions under Clean Water Act (Amendment), 1972.

The 'principle of subsidiarity' is directly applicable to this case; envisioning a decentralized determination of environmental quality. Each jurisdiction is expected to set its own appropriate standard for environmental quality.

Theoretical and empirical literature, however, suggests that in decentralized determination of environmental quality, the dangers of 'race to bottom' can emerge due to interjurisdictional competitiveness to attract mobile capital (mobile firms) by excessively lax environmental standards, which will result in sub optimal outputs of local public good (including environmental quality).

*(iii) Environmental Quality as a function of interjurisdictional Spill Over Effects*

This most recurring case considers environmental quality as a function of local emission of pollutants and also the emissions from external polluting activities that flow across boundaries from other jurisdictions.

$$Q_1 = f \{ e_1, e_2, \dots, e_n \} \quad (2)$$

For instance, both air and water pollution flow across jurisdictions; sometimes over long distances as acid rain.

Under this case, one solution is to invoke central intervention, though the centrally determined uniform ambient national standards for environmental quality is not an optimal solution. Yet another solution is to prescribe a set of emission taxes that internalize the social damages, which is a less practical solution in an intergovernmental setting. In other words, an effluent charge per unit of waste emissions equal to the marginal external damages, which would be a differentiated tax across jurisdictions, is difficult for a central authority to determine or politically to impose.

Yet another solution is Coasian<sup>4</sup> sort of resolution of jurisdictional spill over effects through regional co-operations. But such co-operations are not easy to come as the cases of spill over effects across jurisdictions spurt a complex set of policy alternatives<sup>5</sup>. It is also to

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<sup>4</sup> Contrary to Pigou's theory that only governments, by means of taxes and subsidies, can "internalize" externalities in economic exchange or production, Coase argued that, when one considers opportunity cost in its full meaning, no such devices are necessary: private losers and winners in such cases can "internalize" these externalities themselves through negotiation and that the result will be identical regardless of which party has rights of ownership over the cause of the externality. In short, the manner in which a property right is initially assigned will not affect the efficiency of resource allocation. The only exception, Coase granted, is when there are transactions costs to negotiation.

<sup>5</sup> The basic idea here is that so long as the polluting activities that are the source of the spillovers are not at their efficient levels, there exist potential gains from trade from an interjurisdictional program to

be noted that there exists a dichotomy in the nature of interjurisdictional externalities, whether emission of pollution flows is unidirectional or bidirectional.

## **2. Public Policy Framework: National Action Plan on Climate Change**

India faces the challenge of sustaining the rapid economic growth and the global threat of climate change. The prime minister's council on climate change in its first meeting on 13<sup>th</sup> July, 2007 decided that "A National Document compiling actions taken by India for addressing the challenge of climate change and the action it proposes to take" be prepared which is known as National Action Plan on Climate Change (NAPCC).

NAPCC identifies measures that promote development objectives while yielding co-benefits for addressing climate change effectively. The purpose of it is to create awareness among representatives of the public at large, different agencies of the government, scientists, industry on the threat posed by climate change and propose steps to counter it.

There are eight national missions that form the core of NAPCC representing long term and integrated strategies for achieving key goals in the context of climate change.

### **1. National Solar Mission**

The mission is to develop a solar industry in India that is capable of delivering solar energy competitively against fossil fuels. Solar base power technologies are extremely clean form of generation with practically no form of emissions at the point of generation that would lead to energy security through displacement of coal and petroleum. Another aspect of the mission is to launch a R&D programme which could draw upon international cooperation to enable the creation of more affordable solar power systems and promote innovations.

### **2. National mission on Enhanced Energy Efficiency**

The report reveals that the industrial sector is the largest user of commercial energy in India accounting for around 42% of the country's total commercial energy use during 2004-05. Nearly 60% of direct CO<sub>2</sub> emissions in 1994 were accounted for by energy use. Therefore, energy efficiency measures are a pre requisite as it leads to reduced emissions of air-pollutants, solid waste and waste water and may also lead to the improvement in the quality of the product. The need here is for:

- Financing the efficient technologies in industry that requires significant incremental investment.
- Capacity building needs

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regulate these activities. The costs, in such cases, of pollution abatement are less than the benefits accruing to residents of both the home and the neighboring jurisdictions (Oates, 2001).

- Cooperative approaches by the government and industry are needed to enhance awareness of energy efficient options and upgrade relevant technical knowledge. This could be done through specific energy efficiency improvement investments in existing industries.
- Tax incentives for promotion of energy efficiency including differential taxation on appliances that have certified as energy efficient through energy labelling programme.
- Fiscal incentives.
- Reduced rate VAT on energy efficient equipment.

### **3. National mission on Sustainable Habitat**

Mission promotes to make habitat sustainable through improvements in energy efficiency buildings, management of solid waste and modal shift to public transport. The motive is to adopt more energy saving lighting and space-conditioning technologies in housing financing schemes, implementing carbon-mitigation options in buildings that would improve indoor and outdoor air-quality.

Lack of awareness of energy saving options and potential among architects, engineers and professionals in building industry is a major barrier. They need to be trained and made aware of the options of energy in new constructions. Setting performance based codes can help keep compliance costs low and may provide incentives for innovation.

To control the solid waste, recycling is the important option for reducing environmental pressures. The 74<sup>th</sup> constitutional amendment conferred the responsibility for collection, treatment, and disposal of MSW from state government to urban local bodies (ULBs). They have made responsible for compliance. Under JNURM, around Rs 900 crores were released to ULBs for upgrading MSW facilities.

### **4. National Water Mission**

The motive is to ensure integrated water resource management to conserve water, minimise wastage and ensure more equitable distribution both across and within states. In accordance with the National Water Policy, mission aims to develop a framework to optimise water use by increasing water use efficiency by 20 % through regulatory mechanisms with differential entitlements and pricing. This includes:

- Management and regulation of ground water resources.
- Upgrading storage structures for fresh water and drainage systems for waste water.
- Conservation of wetlands

### **5. National Mission for Sustaining the Himalayan Ecosystem**

Concerns have been expressed that glaciers may lose significant ice-mass and thereby endanger river flows especially in the lean season. Hence the need here is for continuous and enhanced monitoring of the Himalayan ecosystem and impact of change in glacial mass on river flows.

There is also a need to empower local communities, to assume greater responsibility for management of ecological resources. The mission aims to maintain two third of the area under forest cover in order to prevent soil erosion and land degradation and ensure the stability of fragile eco-system.

## **6. National Mission for a Green India**

Forests meet 80% of the needs of the rural poor are the back bone of the forest based communities in terms of livelihood and sustenance. Green India campaign would deal with afforestation of 6 million hectare of land. The mission will focus on two objectives:

- Increasing the forest cover and density as a whole
- Conserving bio diversity

## **7. National Mission for Sustainable Agriculture**

The mission will work on improving the productivity of rain fed agriculture. It would device strategies to make Indian agriculture more resilient to climate change. The mission focus would be on:

- Dry land agriculture
- Risk management
- Access to information
- Use of biotechnology

## **8. National Mission on Strategic Knowledge for Climate Change**

This mission would focus on dedicated research into various aspects of climate change. The research agenda will include the socio economic aspects of climate change including impact on health, demography, migration patterns and livelihood of coastal communities.

- GHG mitigation in Power Generation
- This includes using energy saving and low emission technologies in power generation like supercritical technologies etc.
- Other Renewable Energy Technologies Programmes
- Disaster management response to extreme climate events



- Protection of coastal areas
- Enhancing public health care services
- Creating Appropriate capacity at different levels of government
- In order to implement new initiatives, creative knowledge and suitable capacity at each level of government assumes greater importance.

At the level of central government, there is need of support to relevant policy research to ensure that adaptation and mitigation takes place in the manner that enhances human wellbeing simultaneously minimising societal costs. Appropriate capacity for implementing R&D activities and promoting large scale public awareness is required.

At the level of state government, several agencies need to enlarge and redefine their goals and areas of operation. Commissions like state electricity regulatory commission would need to concern themselves with regulatory decisions that ensure higher energy efficiency, greater use of renewable energies and low carbon activities.

The local bodies need to create capacity on regulatory measures particularly for ensuring energy efficient in new building as well as through programme of retrofits. In respect of adaptation measures, Local capacity and the involvement of communities in actions to adapt the impact of climate change would be crucial. Public awareness on climate change would have to be spearheaded and driven by govt. at all levels. Emphasis on schools and colleges are essential.

The objective of NAPCC is to establish an effective, cooperative and equitable global approach based on principle of common but differentiated responsibilities and respective capabilities as in the United Nations Framework Convention on Climate Change (UNFCCC). The convention specifically notes that “per capita emissions in developing countries are still relatively low and the share of global emissions originating in developing countries will rise to meet their social and development needs.”

The Global Environmental Facility (GEF) finances implementation on projects in developing countries under the convention. Kyoto protocol created the Clean Development Mechanism (CDM) that allows developed countries to meet part of their emission reduction projects in developing countries thus serving dual objective of facilitating compliance by developed countries and assisting developing countries to achieve sustainable development.

The major barrier for technology transfers into developing countries is their low absorptive capacity. The need here is to develop newer models of technology transfers following the rapid changes in global economic and technology environment. New models would need appropriate funding modalities and approaches, a facilitative IPR environment and enhancing absorptive capacity within developing countries.

India has given host country approval for 969 CDM projects as of June 2008. Out of them, 533 projects include renewable energy followed by 303 projects for energy efficiency. Few of them in the forestry, MSW were included. However, India faces certain challenges in a cross country comparison.

1. The projects from India are generally small. As of 2007, out of the projects registered with the CDM, 63% were small scale projects.
2. The investors used local based technologies and use domestic financial resources. CDM has not led technology transfer from industrialised to developing countries.
3. Industrialised countries have not actively participated in the project financing and the risks are mostly taken up by the host countries.
4. Insurance companies have taken less interest in CDM as they could help to catalyse to carbon trading.
5. High transaction costs have also prevented the small-scale sector from participating in CDM.

Still with some improvements in the framework of CDMs, there is an encouraging response from Indian entrepreneurs. India looks forward to enhance cooperation under the UNFCCC. In order to minimise the impacts of climate change, there are broadly, two policy responses to achieve the missions:

The adaptative measures to Climate Change are those measures that help to minimise the harm from occurring impacts of climate change. As the impacts are projected to be more severe in future, the government needs to undertake adaptative measures to help overcome the impact on it are very near. The adaptative measures help to minimise the consequences of climate change impacts. The adaptation measures may be planned in advance or put in place spontaneously in response to a local pressure. For e.g.: relocating the communities living close to sea shore or switching to crops that withstand high temperature. Other measures could be disaster management, risk financing programmes like crop insurance or credit support mechanism facilities. This also includes large-scale infrastructure changes – such as building defences to protect against sea-level rise or improving the quality of road surfaces to withstand hotter temperatures as well behavioural shifts such as individuals using less water, farmers planting different crops and more households and businesses buying flood insurance. Other measures can be disaster management or developing more drought resistant crops. Adaptation measures – such as increasing access to education and health facilities can also help to reduce the consequences.

The mitigation measures are the ones that reduce the greenhouse gases emissions driving climate change. The mitigation addresses the root causes of climate change. Measures to reduce the energy required per unit of output and income include altering the mix of economic activities and promoting energy efficiency, reducing carbon per unit of energy by switching to renewable sources of energy, clean air initiatives and extensive R&D for development of energy saving technologies are, to name a few. Other examples can be switching to renewable sources of energy, extensive public transport facilities, star based

labelling for appliances, energy audits, clean air initiatives, promoting energy saving devices like CFLs.

Innovative strategies to build such techniques are crucial to curb the consequences of climate change (Stern,2006). Both the approaches form an imperative part to lower the climate change impacts. Low-income countries tend to be more vulnerable to climate risks. Hence, there is a need for both the measures to help fight the global problem. While mitigation measures may take a long time to overcome the climate change impacts and serve as a long term shield, adaptive measures, on the other hand, will serve as an immediate answer to the occurring impacts of climate change. In India, the states have broadly followed, the PRECIS model, Providing Regional Climate for Impact Studies developed by UK Met Office Hadley Centre. The model developed by the office provides guidance on the science of climate change and projects the scenarios in times to come and maps are presented in figures 1,2 and 3.

**Figure 1: The Geographic Regions and Biodiversity Variation within India**



Geographically, India can be divided by the great Mountain Walls, the great Indo-Gangetic plain, the great Deccan Plateau, and the Coastal Ghats. On the basis of macro-variations, India can be divided into The Northern & North-eastern Mountains, the Northern Plains, the Peninsular Plateau, the Indian Desert, the Coastal Plains and the Islands. An attempt has been made to locate the states falling under these regions and thereby assess

the priority sectors of the respective states. The state action plans have been taken as a policy document defining the strategies to counteract with the climate change impacts and the rough estimates intended to be invested.

Figure 2: The geographic variations of India

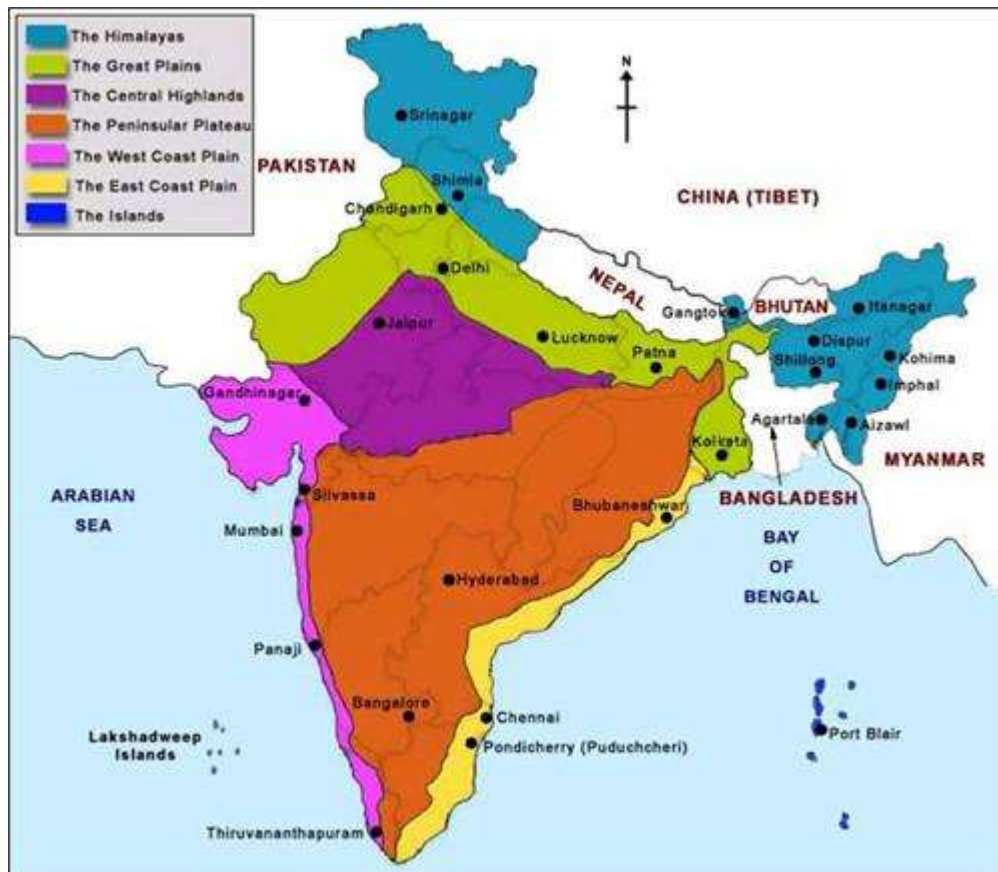
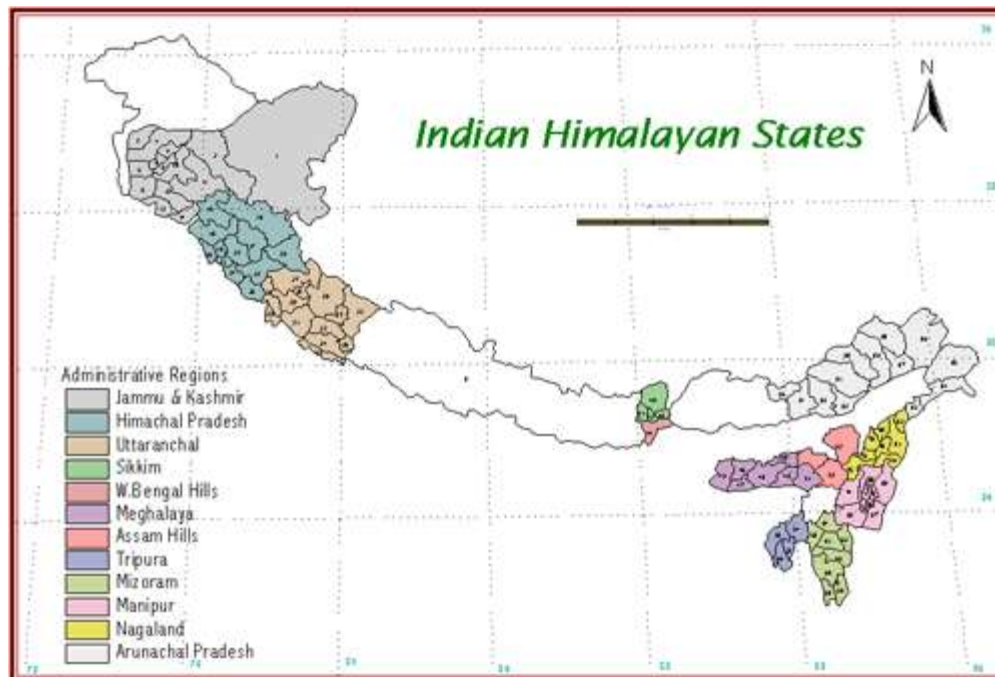


Figure 3: The Himalayan region



Analysing over the north and north-eastern Himalayan region, it can be divided further into Kashmir Himalayas, Himachal and Uttarakhand Himalayas, Darjeeling and Sikkim Himalayas, Arunachal Himalayas and Eastern Hills and mountains (figure 3).

#### Section IV: Interpreting Climate Change-related Expenditure in India

The environment protection as a subject has been in the federalism structure of India since a long time. The forty second Amendment Act of 1976 incorporates environment protection into the constitution of India. Also, Article 48a gives the power to states to protect the environment and safeguard the forests and wildlife of the country. In addition to this, Article 51a endeavours that it is the duty of every citizen to preserve the natural environment including forests, lake, wildlife, rivers and have compassion for the living creatures. Having addressed these articles, one understands that environment protection and issues of Climate Change demands coordination, execution and effective implementation of the objectives directed from the centre and followed by the states. This means that the centre, states and the local bodies have to adopt measures to curb the effects of climate change more assiduously. Hence, the shared powers of the union and the states include forests, protection of wildlife and birds on its list. However, there is a continuous debate to include environment protection on the list of shared powers as it is a matter of concern amidst the growth of any country. The two popular actions to climate change are Adaptive and Mitigation measures as discussed above in detail. Adaptive measures are



ones to minimise or prevent the climate change impacts while Mitigation measures work for exploring energy saving techniques and minimising the emissions of greenhouse gases.

The expenditure budget for 2016-17 has been looked over and an attempt has been made to locate the different expenditure under different ministries of the government exclusively spent either on adaptation and mitigation. There have been certain expenditures in the budget which though, may not be directly towards one of these measures but indirectly work to reduce the climate change impacts. In Nepal, the climate change expenditure amounts to around 2 % of the GDP of the country and 6 % of the total expenditure of the government itself. Major part of source of funding comes through donors (around 55%) in the form of unconditional capital grants. Two-thirds of such expenditure is dedicated to adaptation activities in the country. However the assistance been given to the country have not come on accounting records and has mostly been off-budget.

In India, there are 51 Ministries under the central government and namely 98 Demand for Grants by the respective ministries. Each ministry's demand for grant has been analysed and effort has been made to locate the expenditures dedicated towards adaptation, mitigation, institutional and capacity-building measures. Table 1 show the aggregate amount spent on Climate change over the total budget. It also gives the percentage of the expenditure on Climate Change for Actual Budget 2014-15, Budgeted and Revised Budget 2015-16 and Budget estimates for 2016-17. The table displays that, approximately, 4.71 % was spent on climate change for 2014-15. While, for the budgeted and revised estimates 2015-16, it is 3.95 & 4.55 % respectively. However the budget estimates for 2016-17 give a figure of 6.25 % that is ought to be spent or directed towards these categories (Table 1).

**Table 1: Percentage Of Climate Change expenditure (CCE) in Total Budget**

	(In crores of Rupees)			
	Actual 2014-2015	Budget 2015-2016	Revised 2015-2016	Budget 2016-2017
<b>Total Climate Change Expenditure</b>	77049.51	68751.54	79942.98	120925.85
<b>Total Budget</b>	1633551.89	1737477.04	1753391.02	1933060.45
<b>%</b>	<b>4.717</b>	<b>3.957</b>	<b>4.559</b>	<b>6.256</b>

*Source:* Government of India, Budget documents (various years).

The next analysis has been to check the ministry wise expenditure on climate change over the total budget. Here, expenditure by each ministry is scrutinised in order to locate the expenditure dedicated for the same. They are then taken up as a ratio over Actual budget 2014-15, Budgeted and Revised Budget 2015-16 and Budget estimates for 2016-17. Table 2 presents percentage of total expenditure by respective ministries on climate change. There are few ministries whose expenditures are totally committed towards climate change namely Ministry of Drinking Water and Sanitation, Ministry of Earth Sciences, Ministry of

Environment, Forests and Climate Change, Ministry of New and Renewable Energy and Ministry of Water Resources, River Development and Ganga Rejuvenation. Other Ministries like Ministry of Agriculture and Farmers Welfare, Ministry of Health and Family Welfare, Ministry of Mines, Ministry of Science and Technology are spending more than 50 percent the expenditure either, on adaptative, mitigation or on institutional and capacity building measures.

For the Budget estimates for 2016, the percentage shares of many ministries have taken up a rise. Ministry of Panchayati Raj has committed around 94.36% of its total budget to be spent on capacity building measures and other measures as compared to the previous year revised estimates for 2015. This is indeed sobering as there is a need to strengthen the local bodies to work more effectively on projects on climate change especially in rural areas. There are few ministries whose allocations as percentage of total budget have been much less than 50. There seems the need for expenditure dedicated for research and development in the fields of agriculture, fisheries and other ministries to curb the effects of climate change. Hardly 10 % of the total budget, of department of animal husbandry and fisheries, has been allotted out of the total budget 2016. Preserving the aquatic and marine animals is most essential as the unpalatable situation of the rivers in India is deteriorating their existence.

**Table 2: Climate Change Expenditure (CCE) as a Percentage of Total Sector Budgets**

No.	Ministry	Percentage			
		CCE/AE 2014	CCE/BE 2015	CCE/RE 2015	CCE/ BE 2016
<b>1.</b>	Ministry of Agriculture and Farmers Welfare				
	Department of Agriculture, Cooperation and Farmers Welfare	80.62	75.35	75.30	89.72
	Department of Agricultural Research and Education	10.67	11.18	11.99	11.73
	Department of Animal Husbandry, Dairying and Fisheries	7.55	13.80	13.43	10.21
	Total	62.42	55.16	55.69	74.75
<b>2.</b>	Department of Atomic Energy				
	Atomic Energy	0.57	0.72	0.52	0.91
<b>3.</b>	Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)				
		12.21	26.19	29.43	30.16
<b>4.</b>	Ministry of Coal				
		29.00	31.10	31.24	44.46
<b>5.</b>	Ministry of Commerce and industry				
	Department of Industrial Policy and Promotion	5.05	3.15	2.46	3.63
	Total	1.29	1.07	0.89	1.49

<b>6.</b>	Ministry of Communications and Information Technology				
	Department of Electronics and Information Technology	3.92	0.02	0.02	3.66
		0.66	0.00	0.00	0.40
<b>7.</b>	Ministry of Development of North Eastern Region	9.65	2.58	6.55	12.26
<b>8.</b>	Ministry of Drinking Water and Sanitation	100	100	100	100
<b>9.</b>	Ministry of Earth Sciences	100	100	100	100
<b>10</b>	Ministry of Environment, Forests and Climate Change	100	100	100	100
<b>11.</b>	Ministry of Finance				
	Transfers to States	0	0	2.51	0
<b>12.</b>	Ministry of Health and Family Welfare				
	Department of Health and Family Welfare	61.81	59.03	55.85	51.37
	Department of Health Research	4.72	4.86	4.81	6.27
		60.16	57.31	54.32	50.01
<b>13.</b>	Ministry of Heavy Industries and Public Enterprises				
	Department of Heavy Industry	21.98	7.57	13.36	21.70
	Total	21.73	7.48	13.10	21.36
<b>14.</b>	Ministry of Home Affairs				
	Ministry of Home Affairs	17.87	22.23	16.46	34.11
	Transfers to Union Territories with Legislature	11.06	0.00	0.00	0.00
		1.14	1.34	0.93	2.04
<b>15.</b>	Ministry of Human Resource Development				
	Department of Higher Education	1.01	1.06	0.93	1.50
	Department of School Education and Literacy	0.35	0.53	0.44	0.52
	Total	0.57	0.73	0.63	0.91
<b>16.</b>	Ministry of Information and Broadcasting				
	Ministry of Information and Broadcasting	0.83	1.21	0.73	1.27
<b>17.</b>	Ministry of Mines	98.12	95.42	95.00	97.86
<b>18.</b>	Ministry of Micro, Small and Medium Enterprises	0	0	0	1.53



<b>19.</b>	Ministry of New and Renewable Energy	100	100	100	100.00
<b>20.</b>	Ministry of Panchayati Raj	15.50	52.77	76.30	94.36
<b>21.</b>	Ministry of Petroleum and Natural Gas	0	0	0	6.86
<b>22.</b>	Ministry of Planning	0.50	0	0	51.17
<b>23.</b>	Ministry of Power	6.40	14.75	15.53	48.36
<b>24.</b>	Ministry of Road Transport and Highways	0.37	0.33	0.32	0.34
<b>25.</b>	Ministry of Rural Development				
	Department of Rural Development	0.25	0.28	0.26	0.38
	Department of Land Resources	99.67	99.41	99.47	23.80
	Total	3.82	2.49	2.23	0.83
<b>26.</b>	Ministry of Science and Technology				
	Department of Science and Technology	95.54	95.13	95.53	98.23
	Department of Scientific and Industrial Research	99.84	98.24	100.05	100.05
	Total	80.58	80.16	81.10	81.67
<b>27.</b>	Department of Space	27.74	31.75	30.93	33.88
<b>28.</b>	Ministry of Home Affairs				
	Union Territories Without Legislature (Andaman and Nicobar Islands)	27.81	25.10	26.76	28.12
	Union Territories Without Legislature (Chandigarh)	31.94	32.96	34.86	32.34
	Union Territories Without Legislature (Dadra and Nagar Haveli)	33.52	28.66	26.07	28.18
	Union Territories Without Legislature (Daman and Diu)	23.60	20.71	21.51	19.72
	Union Territories Without Legislature (Lakshadweep)	18.03	12.23	11.73	14.23
	Total	28.37	26.38	27.27	27.32
<b>29.</b>	Ministry of Water Resources, River Development and Ganga Rejuvenation	100	100	100	100

**Source:** Government of India, Budget documents (various years).

Table 3 provides the Fiscal Marksmanship for 2015-16, budgeted and revised estimates (0.43 (lowest) to 2.87 (highest)). The analysis shows that India expenditure on reducing the climate change impacts has been in the bracket of 4 to 5 %. The actual budget estimates for 2014-15 show that only 4 % of the total budget was spent on these measures. The budget estimates for 2016-17 are around 6%. This reflects the increased concern towards the environment all around the world and India itself. India, being 2<sup>nd</sup> largest country in terms population after china and witnessing the era of development and economic growth, the concern towards the environment has become necessary. The rapidly growing economy is witnessing the effect of large greenhouse gases and emissions in the air, making air pollution the sixth biggest cause of death in India (WHO report).

**Table 3: Fiscal Marksmanship for 2015-16 for All Ministries**

No.	Ministry	Budget 2015-2016	Revised 2015-2016	BE/RE
<b>1.</b>	<b>Ministry of Agriculture and Farmers Welfare</b>			
	Department of Agriculture, Cooperation and Farmers Welfare	17004.35	15809.54	1.08
	Department of Agricultural Research and Education	6320	5586	1.13
	Department of Animal Husbandry, Dairying and Fisheries	1585.43	1562.66	1.01
	<b>Total</b>	<b>24909.78</b>	<b>22958.2</b>	<b>1.09</b>
<b>2.</b>	<b>Department of Atomic Energy</b>			
	Atomic Energy	10912	11383.54	0.96
<b>3.</b>	<b>Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)</b>			
		1214	1125	1.08
<b>4.</b>	<b>Ministry of Chemicals and Fertilisers</b>			
	Department of Chemicals and Petrochemicals	255.18	214.77	1.19
	Department of Fertilisers	73047.8	73465.27	0.99
	Department of Pharmaceuticals	259.02	219.39	1.18
<b>5.</b>	<b>Ministry of Civil Aviation</b>			
		3341.5	4198.21	0.80
<b>6.</b>	<b>Ministry of Coal</b>			
		606	603.3	1.00
<b>7.</b>	<b>Ministry of Commerce and industry</b>			
	Department of Commerce	5091.51	4338.65	1.17
	Department of Industrial Policy and Promotion	2616.19	2435.75	1.07
	<b>Total</b>	<b>7707.7</b>	<b>6774.4</b>	<b>1.14</b>

<b>8.</b>	<b>Ministry of Communications and Information Technology</b>			
	Department of Posts	7138.7	7273.81	0.98
	Department of Telecommunications	13474.6	20278.66	0.66
	Department of Electronics and Information Technology	2630	2759	0.95
		23243.3	30311.47	0.77
<b>9.</b>	<b>Ministry of Consumer Affairs, Food and Public Distribution</b>			
	Department of Consumer Affairs	261.77	306.13	0.86
	Department of Food and Public Distribution	125212	140565	0.89
<b>10.</b>	<b>Ministry of Corporate Affairs</b>	271.88	411.53	0.66
<b>11.</b>	<b>Ministry of Culture</b>	2169	2131	1.02
<b>12.</b>	<b>Ministry of Defence</b>			
	Ministry of Defence (Misc)	37144.55	33233.32	1.12
	Defence Pensions	54500	60238	0.90
	Defence Services (Revenue)	132540.61	125808.67	1.05
	Capital Outlay on Defence Services	85894.44	74299.61	1.16
<b>13.</b>	<b>Ministry of Development of North Eastern Region</b>	2362.74	2000.14	1.18
<b>14.</b>	<b>Ministry of Drinking Water and Sanitation</b>	6243.87	10906.53	0.57
<b>15.</b>	<b>Ministry of Earth Sciences</b>	1619.7	1418	1.14
<b>16.</b>	<b>Ministry of Environment, Forests and Climate Change</b>	1681.6	1668.6	1.01
<b>17.</b>	<b>Ministry of External Affairs</b>	15085	15041.08	1.00
<b>18.</b>	<b>Ministry of Finance</b>			
	Transfers to States	125189.52	119178.52	1.05
	Department of Economic Affairs	17064.56	13445.85	1.27
	Department of Financial Services	24866.8	43061.25	0.58
	Interest Payments	456145.05	442620.31	1.03
	Repayment of Debt	-9.31323E-10	9.45874E-11	-9.85
	Department of Expenditure	156.84	196.03	0.80
	Pensions	26285	26785	0.98

	Indian Audit and Accounts Department	3429.05	3203.5	1.07
	Department of Revenue	15709	16714.98	0.94
	Direct Taxes	5406.56	4750	1.14
	Indirect Taxes	5664.6	4600	1.23
	Department of Disinvestment	44	35	1.26
<b>19.</b>	<b>Ministry of Food Processing Industries</b>	<b>505.51</b>	<b>524.61</b>	<b>0.96</b>
<b>20.</b>	<b>Ministry of Health and Family Welfare</b>			
	Department of Health and Family Welfare	31050	32819	0.95
	Department of Health Research	1018.17	1012.6	1.01
		32068.17	33831.6	0.95
<b>21.</b>	<b>Ministry of Heavy Industries and Public Enterprises</b>			
	Department of Heavy Industry	1624.73	921	1.76
	Department of Public Enterprises	19	18.18	1.05
		1643.73	939.18	1.75
<b>22.</b>	<b>Ministry of Home Affairs</b>			
	Ministry of Home Affairs	4134.59	3955.65	1.05
	Transfers to Union Territories with Legislature	1768	1826.9	0.97
	Cabinet	416.99	713.27	0.58
	Police	62124.52	63613.13	0.98
		68444.1	70108.95	0.98
<b>23.</b>	<b>Ministry of Housing and Urban Poverty Alleviation</b>	<b>5634.47</b>	<b>1961.17</b>	<b>2.87</b>
<b>24.</b>	<b>Ministry of Human Resource Development</b>			
	Department of Higher Education	26855.26	25399	1.06
	Department of School Education and Literacy	42219.5	42186.5	1.00
	<b>Total</b>	<b>69074.76</b>	<b>67585.5</b>	<b>1.02</b>
<b>25.</b>	<b>Ministry of Information and Broadcasting</b>			
	Ministry of Information and Broadcasting	3711.11	3588.58	1.03
<b>26.</b>	<b>Ministry of Labour and Employment</b>			
	Ministry of Labour and Employment	5361.37	4835.08	1.11
<b>27.</b>	<b>Ministry of Law and Justice</b>			
	Election Commission	80	85.29	0.94
	Law and Justice	3523.65	3418.85	1.03
	Supreme Court of India	155	171.02	0.91

<b>28.</b>	Ministry of Mines	1155.71	997.61	1.16
<b>29.</b>	Ministry of Micro, Small and Medium Enterprises	3007.42	3020.88	1.00
<b>30.</b>	Ministry of Minority Affairs	3738.11	3735.98	1.00
<b>31.</b>	Ministry of New and Renewable Energy	303.21	262.07	1.16
<b>32.</b>	Ministry of Panchayati Raj	94.75	221.5	0.43
<b>33.</b>	Ministry of Parliamentary Affairs	15.57	15.75	0.99
<b>34.</b>	Ministry of Personnel, Public Grievances and Pensions			
	Ministry of Personnel, Public Grievances and Pensions	1153.9	1134.59	1.02
	Central Vigilance Commission	27.68	24.26	1.14
<b>35.</b>	Ministry of Petroleum and Natural Gas	30125.55	31349.35	0.96
<b>36.</b>	Ministry of Planning	2211.63	2040.69	1.08
<b>37.</b>	Ministry of Power	6725.93	8005.1	0.84
<b>38.</b>	The President, Parliament, Union Public Service Commission and the Secretariat of the Vice President	46	49.38	0.93
	Lok Sabha	599.6	579.17	1.04
	Rajya Sabha	336.39	338.05	1.00
	Union Public Service Commission	200	213	0.94
	Secretariat of the Vice-President	4.05	7.75	0.52
<b>39.</b>	Ministry of Road Transport and Highways	45751.65	47107	0.97
<b>40.</b>	Ministry of Rural Development			
	Department of Rural Development	71695.08	77700.35	0.92
	Department of Land Resources	1637.5	1578.32	1.04
	<b>Total</b>	73332.58	79278.67	0.92
<b>41.</b>	Ministry of Science and Technology			
	Department of Science and Technology	3835.7	3828.68	1.00
	Department of Scientific and Industrial Research	4031	4036.7	1.00

	Department of Biotechnology	1625.14	1624.35	1.00
	<b>Total</b>	<b>9491.84</b>	<b>9489.73</b>	<b>1.00</b>
<b>42.</b>	Ministry of Shipping			
	Ministry of Shipping	1439.79	1407	1.02
<b>43.</b>	Ministry of Skill Development and Entrepreneurship			
	Ministry of Skill Development and Entrepreneurship	1543.46	1037.59	1.49
<b>44.</b>	Ministry of Social Justice and Empowerment			
	Department of Social Justice and Empowerment	6524.82	5969.45	1.09
	Department of Empowerment of Persons with Disabilities	636.94	610.95	1.04
<b>45.</b>	Department of Space	7388.19	6959.44	1.06
<b>46.</b>	Ministry of Statistics and Programme Implementation			
	Ministry of Statistics and Programme Implementation	4826.87	4631.07	1.04
<b>48.</b>	Ministry of Steel			
	Ministry of Steel	82.95	38.48	2.16
<b>49.</b>	Ministry of Textiles	4274.8	4326.44	0.99
<b>50.</b>	Ministry of Tourism			
	Ministry of Tourism	1573.07	932.15	1.69
<b>52.</b>	Ministry of Tribal Affairs			
	Ministry of Tribal Affairs	4819.21	4573.8	1.05
<b>53.</b>	Ministry of Home Affairs			
	Union Territories Without Legislature (Andaman and Nicobar Islands)	3741.38	3957.83	0.95
	Union Territories Without Legislature (Chandigarh)	3454.5	3221.04	1.07
	Union Territories Without Legislature (Dadra and Nagar Haveli)	891.56	1039.18	0.86
	Union Territories Without Legislature (Daman and Diu)	878.82	689.22	1.28
	Union Territories Without Legislature (Lakshadweep)	1059.99	1109.99	0.95
	<b>Total</b>	<b>10026.25</b>	<b>10017.26</b>	<b>1.00</b>
<b>54.</b>	Ministry of Urban Development			

	Ministry of Urban Development	19216.87	18340.11	1.05
55.	Ministry of Water Resources, River Development and Ganga Rejuvenation	4232.43	7032.43	0.60
56.	Ministry of Women and Child Development			
	Ministry of Women and Child Development	10382.4	17351.89	0.60
57.	Ministry of Youth Affairs and Sports			
	Ministry of Youth Affairs and Sports	1541.13	1371	1.12

**Source:** Government of India, Budget documents (various years).

It has now become a public health concern especially for India. Therefore, the government at the centre, state and by the local governments needs to ensure that the amount dedicated towards such measures are effectively spent, the policies are taken forward with full heart and soul and commitment by the local governments. The concern about climate change should be dealt at all levels of government with more expenditure on the measures and on the examination of the outcomes as well. The mitigation measures may take a longer time but making the government at the lower more adaptive to climate change is much needed. The impact assessment has to come from people working the closest with such resources. However, at an individual level, the climate change concern demands them to be dutiful by keeping their surroundings neat and healthy. The solution to the environmental problems demands a humanistic approach towards environment by every individual.

## V. Conclusion

The paper examines the links between the national plan on climate change expenditure and fiscal stance across sectors in the context of Union government in India, against the analytical backdrop of environmental federalism. Using the Demand for Grants analyzed for adaptation and mitigation spending and the regulatory schemes on climate change, we arrived at a preliminary estimate on how much India spends on climate change. The mapping of National Action Plan on Climate Change to the budgetary allocations across sectors undertaken in this paper is illustrative and open-ended. Given the data constraints, we identified that specifically targeted expenditure on climate change related programmes is around 5-6 per cent of total expenditure in the national budgets. However, there is significant deviation between the budget estimates and the actual spending. The fiscal slippage is analyzed to understand the Climate Change budget credibility. The sustainability of the link between fiscal stance and climate change depends on integrating budget codes in the classification of budgetary transactions, through a clear road map by the Ministry of Finance. As such, the financing of climate change is highly fragmented in India at sectoral levels and calls for a macroeconomic policy framework. This paper is first in the Climate Change series, and the following research papers will look into the revised classification of

budgetary transactions and how budget codes can be incorporated in the Expenditure Budgets, with methodological advancements, at national level and also at the (selected) subnational levels.



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## Appendix 1: Climate Change –related Spending across Ministries/Departments

The detailed expenditure on Adaptative, mitigation, institutional and capacity building measures have been put in tables 4 to 7 with their allocations for respective ministries. Other than this, a detailed table on measures by respective ministries is provided that portrays the ratio of actual budget 2014, budgeted and revised estimates for 2015 and budget estimates for 2016. This is given by table 8.

Table 4: Expenditure on Adaptative Measures by Ministry (In crores of Rupees)						
No.	Ministry	Major Head	Actual 2014-15	Budget 2015-16	Revised 2015-16	Budget 2016-17
<b>1.</b>	<b>Ministry of Rural Development</b>					
<b>A.</b>	<b>Department of Land Resources</b>					
2	<i>Pradhan Mantri Krishi Sinchayee Yojana (Watershed Development Component) erstwhile Integrated Watershed Management Programme</i>					
2.01	Programme Component	2501	3.72	30.00	30.00	23.25
		2552	0.00	0.00	0.00	150.00
7.01	Provision for projects/schemes for the benefit of the North Eastern Region and Sikkim	2552	0.00	150.00	150.00	
		3601	0.00	0.00	0.00	1321.75
7.02	Programme Component - State Plan	3601	2312.69	1350.00	1350.00	
		<b>Total</b>	<b>2316.41</b>	<b>1530.00</b>	<b>1530.00</b>	<b>1495.00</b>
2.02	EAP Component	2501	2.34	0.00	0.00	10.00
		3601	0.00	0.00	0.00	45.00
		<b>Total</b>	<b>2318.75</b>	<b>1530.00</b>	<b>1530.00</b>	<b>55.00</b>
	<i>Total-Pradhan Mantri Krishi Sinchayee Yojana (Watershed Development Component) erstwhile Integrated Watershed Management Programme</i>		<b>2318.75</b>	<b>1530</b>	<b>1530</b>	<b>1550.00</b>
<b>2.</b>	<b>Department of Space</b>					
1	<b>ISRO Space Applications Programmes</b>					
15.	ISRO Space Applications Programmes	<b>3402</b>				55.00
63.	National Natural Resources Management System(NNRMS)	3402	19.95	56.70	50.10	
64.	Earth Observation Application Mission(EOAM)	3402	2.71	5.20	3.70	
67.	Disaster Management Support (DMS)	3402	12.79	11.50	12.38	
		<b>5402</b>				7.00
67.	Disaster Management Support (DMS)	5402	10.51	18.50	22.74	
		<b>Total</b>	<b>45.96</b>	<b>91.90</b>	<b>88.92</b>	<b>62.00</b>
2	<b>ISRO Space Science Programmes</b>					

18.	ISRO Space Science Programmes	<b>3402</b>				<b>64.75</b>
71.	RESPOND	3402	18.50	25.15	24.85	
72.	Sensor Payload Development / Planetary Science Programme	3402	0.96	2.50	0.90	
78.	ISRO Geosphere Biosphere Programme (ISRO GBP)	3402	11.11	20.00	17.30	
79.	Atmospheric Science Programmes	3402	11.51	11.50	12.38	
81.	Other Schemes	3402	2.47	5.50	20.03	
		<b>5402</b>				<b>3.10</b>
80.	Small Satellites for Atmospheric Studies and Astronomy	5402	0.45	2.40	0.68	
		<i>Total</i>	<b>45.00</b>	<b>67.05</b>	<b>76.14</b>	<b>67.85</b>
<b>3</b>	<b>ISRO Satellite Centre (ISAC &amp; its Projects</b>					
	ISRO Satellite Centre (ISAC & its Projects	<b>3402</b>				<b>351.51</b>
	Resourcesat-2 and 3	3402	0.00	0.00	0.00	
	ISRO Satellite Centre (ISAC)	3402	271.88	258.00	280.97	
	Navigational Satellite System (NSS)	3402	28.19	35.00	32.00	
	Geo-Imaging Satellite (GISAT)	3402	3.99	2.00	3.18	
	Resourcesat-2A	3402	1.60	3.00	2.50	
	Cartosat-3	3402	0.00	4.00	0.88	
	Scattsat	3402	0.00	1.50	1.38	
	Risat-1A	3402	0.00	0.50	0.00	
	Oceansat-3	3402	0.00	3.00	0.20	
	Cartosat-2E	3402	0.50	2.00	1.03	
	Risat-3	3402	0.00	0.50	0.00	
	NASA ISRO Synthetic Aperature Radar Mission (NISAR)	3402	0.00	10.00	0.68	
	Development of Space Materials and Components	3402	12.18	26.00	12.00	
		<b>5402</b>				<b>596.59</b>
	ISRO Satellite Centre (ISAC)	5402	94.87	128.00	101.58	
	Navigational Satellite System (NSS)	5402	67.19	85.00	75.30	
	Geo-Imaging Satellite (GISAT)	5402	38.08	78.00	47.61	
	Resourcesat-2A	5402	29.05	47.00	47.38	
	Cartosat-4	5402	0.00	46.00	17.42	
	Scattsat	5402	0.00	28.50	9.62	
	Risat-1A	5402	0.00	1.50	10.20	
	Oceansat-4	5402	0.00	22.00	14.50	
	Cartosat-2E	5402	4.28	43.00	21.50	
	Risat-4	5402	0.00	1.50	0.00	
	NASA ISRO Synthetic Aperature Radar Mission (NISAR)	5402	0.00	40.00	25.30	
		<i>Total</i>	<b>551.81</b>	<b>866.00</b>	<b>705.23</b>	<b>948.10</b>
	<i>TOTAL EXPENDITURE BY MINISTRY</i>		<b>642.77</b>	<b>1024.95</b>	<b>870.29</b>	<b>1077.95</b>
<b>3.</b>	<b>Ministry of Water Resources, River Development and Ganga Rejuvenation</b>		<b>5480.05</b>	<b>4232.43</b>	<b>7032.43</b>	<b>6201.21</b>

<b>4. Ministry of Agriculture and Farmers Welfare</b>						
<b>A. Department of Agriculture, Cooperation and Farmers Welfare</b>						
<b>1</b>	<b>Pradhan Mantri Fasal Bima Yojna</b>	<b>2401</b>				
	National Agricultural Insurance Scheme (NAIS)	2401	1543.56	1457.32	2052.65	0.00
	Weather - based Crop Insurance Scheme	2401	470.00	432.19	600.00	0.00
	Modified National Agricultural Insurance Scheme (MNAIS).	2401	584.79	697.99	301.00	0.00
	National Crop Income Insurance Scheme	2401	0.00	0.10	0.00	0.00
	Coconut Palm Insurance Scheme	2401	0.00	1.00	1.00	0.00
	<b>Total-Crop Insurance</b>		<b>2598.35</b>	<b>2588.60</b>	<b>2954.65</b>	<b>5025.05</b>
		<b>2552</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>476.10</b>
	<i>Total</i>		<b>2598.35</b>	<b>2588.60</b>	<b>2954.65</b>	<b>5501.15</b>
<b>2</b>	<b>Interest Subsidy for Short Term Credit to Farmers</b>	2416	0.00	0.00	0.00	<b>15000.00</b>
<b>3</b>	<b>Rashtriya Krishi Vikas Yojana</b>					
	State Plan	3601	79.33	450.00	40.00	54.00
	State Plan (Implementing Agencies and Administrative Expenses)	2401	8363.88	4050.00	3857.00	5343.00
	UT Plan	3602	0.00	0.00	3.00	3.00
	<i>Total-Rashtriya Krishi Vikas Yojana (RKVY)</i>		<b>8443.21</b>	<b>4500.00</b>	<b>3900.00</b>	<b>5400.00</b>
<b>4</b>	<b>Pradhan Mantri Krishi Sinchai Yojna (PMKSY)</b>					
	State Plan	<b>2401</b>				<b>11.00</b>
	Per Drop More Crop (micro irrigation)	2401	0.00	10.00	<b>1.25</b>	
	Other Interventions	2401	0.00	0.00	<b>90.00</b>	
	Per Drop More Crop (micro irrigation)	2552	0.00	102.37	2.14	0.00
	Other Interventions	2552	0.00	81.88	4.89	
	State Plan	3601				<b>2324.00</b>
	Per Drop More Crop (micro irrigation)	3601	0.00	882.08	865.65	
	Other Interventions	3601	0.00	713.67	581.63	
	State Plan	3602				<b>5.00</b>
	Per Drop More Crop (micro irrigation)	3602	0.00	5.55	0.00	
	Other Interventions	3602	0.00	4.45	4.45	
	<i>Total</i>		<b>0.00</b>	<b>1800.00</b>	<b>1550.01</b>	<b>2340.00</b>
<b>5</b>	<b>National Mission on Sustainable Agriculture</b>					
<b>1</b>	<b>National Project on Agro Forestry</b>					
<b>1.1</b>	State Plan	2401	0.00	0.00	0.10	1.00
		3601				74.00
	<i>Total</i>					<b>75.00</b>
<b>2</b>	<b>National Project on Organic Farming / Value Chain Development for North East Region</b>	<b>2401</b>	0.00	0.00	0.00	13.76
		2552	0.00	0.00	125.00	100.00
		4401	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	1.00

		<i>Total</i>				<b>114.76</b>
3	Paramparagat Krishi Vikas Yojana - State Plan	<b>2401</b>	0.00	0.00	3.00	3.00
		3601	0.00	268.60	212.60	289.00
		3602	0.00	0.00	2.50	5.00
		2552	0.00	31.40	31.50	0.00
		<i>Total</i>				<b>297.00</b>
4	National Project on Soil Health & Fertility					
4.1	Central Plan	<b>2401</b>	0.00	0.00	0.00	<b>6.30</b>
	Soil Health Card and Grants for States and UTs	2401	4.88	5.50	5.71	
	Soil Health Card	2401	0.00	0.00	0.00	0.00
		2552	0.00	20.00	3.61	0.00
	Soil Health Card and Grants for States and UTs	<b>4401</b>	0.00	2.00	3.00	<b>2.00</b>
		<i>Total</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<b>8.30</b>
4.2	State Plan	<b>3601</b>	87.88	172.50	129.50	<b>360.00</b>
	Total-National Project on Soil Health & Fertility					<b>368.30</b>
5	Soil and Land Use Survey of India	<b>2402</b>				<b>20.46</b>
	All India Soil and Land Use Survey and Application of Remote Sensing Technology for Soil Survey	2402	18.32	20.38	19.38	
		4402	0.00	0.30	0.00	0.00
6	Grants to Damodar Valley Corporation	2402	0.45	0.45	0.45	<b>0.50</b>
7	NMSA - Rainfed Area Development and Climate Change	2401	1.76	18.00	4.00	5.00
		3601	1266.66	251.95	177.02	220.00
		2552	0.00	30.05	22.18	0.00
		<b>Total</b>	<b>1379.95</b>	<b>821.13</b>	<b>739.55</b>	<b>225.00</b>
	<b>Total-National Mission on Sustainable Agriculture</b>		<b>1379.95</b>	<b>821.13</b>	<b>739.55</b>	<b>1101.02</b>
6	<b>National Mission on Agriculture Extension and Technology</b>					
6.1	Sub-Mission on Seed and Planting Material	2401	17.82	100.10	66.50	88.80
		2552	0.00	0.00	0.00	18.00
		3601	89.21	49.00	60.41	78.00
		3602	0.42	7.30	0.50	1.00
		4401	0.00	0.00	0.30	0.30
		<i>Total</i>				<b>186.10</b>
6.2	Sub-Mission on Plant Protection & Plant Quarantine	2401	50.46	67.50	74.74	143.56
		2552	0.00	0.00	0.00	2.50
		3601	1.52	2.00	2.00	2.00
		4401	3.50	4.50	4.50	6.00
		<i>Total</i>				<b>154.06</b>
6.3	Sub-Mission on Agricultural Extension					

6.3.1	Central Plan	2401				185.36
	Sub-Mission on Agriculture Extension (CS)	2401	213.55	175.00	173.30	
	Sub-Mission on Agriculture Extension (CSS)	2401	0.64	45.00	4.00	
		2552	0.00	50.00	40.35	30.00
	<i>Total</i>					<b>215.36</b>
6.3.2	State Plan	2401	0.64	45.00	4.00	4.00
		3601	521.20	355.00	350.00	445.00
	<i>Total</i>					<b>449.00</b>
6.3.3	UT Plan	3602	0.50	0.50	1.00	<b>1.00</b>
	<i>Total</i>					<b>665.36</b>
6.4	Information Technology					
6.4.1	Central Plan	2401				40
	Strengthening/Promoting Agricultural Information System	2401	24.35	25	30	
	National E-Governance Plan-Agriculture	2401	14.45	0	0	
6.4.2	State Plan	2401				7.1
	National E-Governance Plan-Agriculture,Grants to State and Uts		0	10	28.07	
	Grants to State and UTs	3601	28.03	35	30	32
		2552	0	5	1.5	0
	<i>Total</i>					39.1
6.4.3	UT Plan	3602	0	0	0	0.9
	<i>Total-Information Technology</i>					<b>80</b>
6.5	Sub-Mission on Agriculture Mechanisation					
6.5.1	Central Plan	2401	7.36	7	4.89	30.06
		2552	0	5	2.77	2
		3601	164.85	82.25	7.26	6
		4401	8.06	18.6	13.72	15.56
	<i>Total</i>					53.62
6.5.2	State Plan	3601	0	45	117.25	155
	<i>Total-Sub-Mission on Agriculture Mechanisation</i>					<b>208.62</b>
	<i>Total-National Mission on Agriculture Extension and Technology</i>		<b>1146.56</b>	<b>1133.75</b>	<b>1017.06</b>	<b>1294.14</b>
7	National Mission on Horticulture					
7.1		2401				<b>378.27</b>
	MIDH (CS)	2401	329.44	450.00	428.28	
	MIDH (CSS)	2401	79.07	103.50	76.01	
		2552	0.00	160.00	72.90	<b>36.00</b>
		4552	0.00	0.00	0.00	<b>5.00</b>
	<i>Total</i>					
7.2	State Plan	2401	0.00	0.00	0.00	<b>90.00</b>
		3601	1546.22	1236.50	1159.40	<b>1120.00</b>
	<i>Total</i>		<b>1954.73</b>	<b>1950.00</b>	<b>1736.59</b>	<b>1629.27</b>
	<i>TOTAL EXPENDITURE BY MINISTRY</i>		<b>15522.8</b>	<b>12793.4</b>	<b>11897.8</b>	<b>32265.5</b>
			<b>0</b>	<b>8</b>	<b>6</b>	<b>8</b>

	<i>Department of Agricultural Research and Education</i>					
<b>8</b>	<b>Natural Resource Management &amp; Climate Resilient Agriculture</b>					
8.1	Natural Resource Management Institutes including Agro-Forestry Research	2415	0.00	603.83	579.80	626.37
		2552				40.00
		<i>Total</i>				666.37
8.2	Climate Resilient Agriculture Initiative	2415	516.57	103.00	90.00	103.00
		2552				7.00
		<i>Total</i>				110.00
	<i>Total-Natural Resource Management &amp; Climate Resilient Agriculture</i>		<b>516.57</b>	<b>706.83</b>	<b>669.8</b>	<b>776.37</b>
<b>5.</b>	<b>Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)</b>					
1	National Health Mission:AYUSH	2210				<b>23.60</b>
		<b>2552</b>				<b>42.00</b>
	National Mission on AYUSH (Including Mission on Medicinal Plants)	2552	0.00	0.00	0.00	
	AYUSH Promotion (States) : National AYUSH Mission (NAM)	2552	0.00	36.40	55.14	
		<b>3601</b>				<b>328.40</b>
	National Mission on AYUSH (Including Mission on Medicinal Plants)		9.30	0.00	0.00	
	AYUSH Promotion (States) : National AYUSH Mission (NAM)		64.06	263.60	265.21	
		<b>3602</b>				<b>6.00</b>
	National Mission on AYUSH (Including Mission on Medicinal Plants)		0.60	0.00	0.00	
	AYUSH Promotion (States) : National AYUSH Mission (NAM)		1.33	18.00	10.79	
		<i>Total</i>	<b>75.29</b>	<b>318.00</b>	<b>331.14</b>	<b>400.00</b>
<b>6.</b>	<b>Ministry of Earth Sciences</b>	<i>Total</i>	<b>1293.87</b>	<b>1619.70</b>	<b>1418.00</b>	<b>1672.45</b>
<b>7.</b>	<b>Ministry of Environment, Forests and Climate Change</b>	<i>Total</i>	<b>1599.24</b>	<b>1681.60</b>	<b>1668.60</b>	<b>2250.34</b>
<b>8.</b>	<b>Ministry of Health and Family Welfare</b>					
<b>A.</b>	<b>Department of Health and Family Welfare</b>					
1	National Health Mission (State Plan)					
	Programme Component	2210				145.34
	EAP Component	2210				39.88
			109.14	183.80	155.53	
	Programme Component	2211				127.44
	EAP Component	2211				0.68
			46.85	120.34	91.55	
	Programme Component	2552				1817.17

	EAP Component	2552				82.83
			0.00	1797.10	1797.10	
	Programme Component	3601				15964.07
	EAP Component	3601				642.71
			17693.65	15898.76	16075.81	
	Programme Component	3602				158.81
	EAP Component	3602				21.07
			189.62	295.00	175.01	
2	Total-National Health Mission (State Plan)					
	National Health Mission (Non-Plan)	2210	1071.96	1352.74	1077.67	1333.58
		2211	929.73	671.79	671.79	1374.00
	<i>Total</i>					<i>2707.58</i>
	Deduct Recoveries	2210	-237.23	-1341.07	-1066.00	-1320.58
		2211	-874.30	-650.00	-650.00	-1350.00
	<i>Total</i>					<i>-2670.58</i>
	Total-National Health Mission (Non-Plan)					-1337.00
3	Aid Material & Equipment	3606	158.04	724.60	724.60	629.07
	Deduct Recoveries	3606	-158.04	-724.60	-724.60	-629.07
	Total-Aid Material & Equipment					0.00
	<i>Total-National Health Mission</i>		<b>18929.4</b>	<b>18328.4</b>	<b>18328.4</b>	<b>19037.0</b>
			<b>2</b>	<b>6</b>	<b>6</b>	<b>0</b>
<b>9.</b>	<b>Ministry of Drinking Water and Sanitation</b>		<b>12090.8</b>	<b>6243.87</b>	<b>10906.5</b>	<b>14009.7</b>
			<b>3</b>		<b>3</b>	<b>0</b>
<b>10.</b>	<b>Ministry of Finance</b>					
	Transfers to States					
	<b>Loans and Advances to State and U.T. Governments</b>					
	<b>Non-Plan Grants</b>					
1	Transfer to National Calamity Contingency Fund/ Transfer to National Disaster Response Fund (NDRF)	2245	3460.88	5690.00	8899.00	6450.00
4.01	Less-National Calamity Contingent Duty (Customs)	0037	-976.83	-1640.00	-1410.00	-1550.00
4.02	Less-National Calamity Contingent Duty (Union Excise)	0038	-2484.05	-4050.00	-4500.00	-4900.00
	<i>Total-Transfer to National Calamity Contingency Fund/ Transfer to National Disaster Response Fund (NDRF)</i>		<i>0.00</i>	<i>0.00</i>	<i>2989.00</i>	<i>0.00</i>
5.	Assistance to States from National Calamity Contingency Fund/ Assistance to States from National Disaster Response Fund (NDRF)	2245	3460.88	5690.00	5910.00	6450.00
5.01	Less-Amount met by transfer from NCCF/NDRF	2245	-3460.88	-5690.00	-5910.00	-6450.00
	<i>Net</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
	<b>Total-Relief on account of National Calamities</b>		<b>0.00</b>	<b>0.00</b>	<b>2989.00</b>	<b>0.00</b>



<b>11. Ministry of Home Affairs</b>						
<i>A. Disaster Management</i>						
10.01	National Disaster Management Authority	2245	470.79	560.76	564.24	<b>30.91</b>
10.02	NDRF and Other Disaster related Programmes	2245				<b>623.04</b>
		3601	0.00	0.00	5.00	<b>23.11</b>
		3602				<b>0.64</b>
		<i>Total</i>				
10.03	National Cyclone Risk Mitigation Project-EAP Component	2245	0.00	0.00	0.00	<b>11.92</b>
		3601				<b>630.00</b>
		<i>Total</i>				
10.04	Capital Outlay on Disaster Management	4250	38.49	358.53	81.75	<b>260.13</b>
	<i>Total-Disaster Management</i>		<b>509.28</b>	<b>919.29</b>	<b>650.99</b>	<b>1579.75</b>
<b>B. Transfers to Union Territories with Legislature</b>						
<i>4. Assistance for U.T. Plans</i>						
4.01	Puducherry					
2.01.02	EAP for Coastal Disaster Risk Reduction Project	3602	<b>188.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
<b>C. Union Territories Without Legislature (Andaman and Nicobar Islands)</b>						
<b>Forestry and Wildlife</b>						
	Revenue	3710	155.46	153.72	167.03	177.81
	Capital	5710	22.47	29.24	31.15	29.35
	Loans and Advances	7710	17.00	17.00	26.00	24.00
	<b>Total</b>		<b>194.93</b>	<b>199.96</b>	<b>224.18</b>	<b>231.16</b>
<b>Health</b>						
	Revenue	3710	192.36	231.18	272.47	280.80
	Capital	5710	7.14	7.85	7.85	10.55
	Loans and Advances	7710	0.00	0.00	0.00	0.00
			<b>199.50</b>	<b>239.03</b>	<b>280.32</b>	<b>291.35</b>
<b>Irrigation &amp; Flood Control</b>						
	Revenue	3710	3.15	3.82	3.55	4.20
	Capital	5710	4.50	5.12	5.51	4.93
	Loans and Advances	7710	0.00	0.00	0.00	0.00
	<b>Total</b>		<b>7.65</b>	<b>8.94</b>	<b>9.06</b>	<b>9.13</b>
			<b>402.08</b>	<b>447.93</b>	<b>513.56</b>	<b>531.64</b>
<b>D. Union Territories Without Legislature (Chandigarh)</b>						
<b>Forestry and Wildlife</b>						
	Revenue	3710	17.76	16.55	18.26	20.21
	Capital	5710	1.45	1.50	1.45	1.59
	Loans and Advances	7710	0.00	0.00	0.00	0.00
	<b>Total</b>		<b>19.21</b>	<b>18.05</b>	<b>19.71</b>	<b>21.80</b>
<b>Health</b>						
	Revenue	3710	243.97	247.81	272.20	301.94

Capital	5710	43.20	118.18	87.94	48.95
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>287.17</b>	<b>365.99</b>	<b>360.14</b>	<b>350.89</b>
<b>Irrigation &amp; Flood Control</b>					
Revenue	3710	0.00	0.00	0.00	0.00
Capital	5710	0.21	0.30	0.30	0.80
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.21</b>	<b>0.30</b>	<b>0.30</b>	<b>0.80</b>
		<b>306.59</b>	<b>384.34</b>	<b>380.15</b>	<b>373.49</b>
<b>Union Territories Without Legislature (Dadra and Nagar Haveli)</b>					
<b>Forestry and Wildlife</b>					
Revenue	3710	27.03	24.43	23.75	23.08
Capital	5710	10.00	9.30	8.30	7.16
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>37.03</b>	<b>33.73</b>	<b>32.05</b>	<b>30.24</b>
<b>Health</b>					
Revenue	3710	52.83	61.41	69.41	71.43
Capital	5710	39.43	31.91	27.91	49.96
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>92.26</b>	<b>93.32</b>	<b>97.32</b>	<b>121.39</b>
<b>Irrigation &amp; Flood Control</b>					
Revenue	3710	48.87	50.48	72.08	63.03
Capital	5710	3.09	3.55	2.55	3.55
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>51.96</b>	<b>54.03</b>	<b>74.63</b>	<b>66.58</b>
		<b>181.25</b>	<b>181.08</b>	<b>204.00</b>	<b>218.21</b>
<b>Union Territories Without Legislature (Daman and Diu)</b>					
<b>Forestry and Wildlife</b>					
Revenue	3710	3.46	3.71	3.41	4.15
Capital	5710	2.57	6.28	2.78	3.78
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>6.03</b>	<b>9.99</b>	<b>6.19</b>	<b>7.93</b>
<b>Health</b>					
Revenue	3710	41.47	46.21	43.68	48.38
Capital	5710	0.00	0.00	0.00	0.00
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>41.47</b>	<b>46.21</b>	<b>43.68</b>	<b>48.38</b>
<b>Irrigation &amp; Flood Control</b>					
Revenue	3710	2.24	2.41	0.31	0.23
Capital	5710	3.77	5.22	3.41	3.15
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>6.01</b>	<b>7.63</b>	<b>3.72</b>	<b>3.38</b>
		<b>53.51</b>	<b>63.83</b>	<b>53.59</b>	<b>59.69</b>
<b>Union Territories Without Legislature (Lakshadweep)</b>					
<b>Forestry and Wildlife</b>					
Revenue	3710	2.41	5.23	5.23	4.7

Capital	5710	0	0	0	0
Loans and Advances	7710	0	0	0	0
<b>Total</b>		<b>2.41</b>	<b>5.23</b>	<b>5.23</b>	<b>4.7</b>
<b>Health</b>					
Revenue	3710	42.54	49.47	49.93	56.16
Capital	5710	2.25	3	3	4
Loans and Advances	7710	0	0	0	0
<b>Total</b>		<b>44.79</b>	<b>52.47</b>	<b>52.93</b>	<b>60.16</b>
<b>Irrigation &amp; Flood Control</b>					
Revenue	3710	0.05	0.05	0.05	0
Capital	5710	0	0	0	0
Loans and Advances	7710	0	0	0	0
<b>Total</b>		<b>0.05</b>	<b>0.05</b>	<b>0.05</b>	<b>0</b>
		<b>47.25</b>	<b>57.75</b>	<b>58.21</b>	<b>64.86</b>
		<b>60157.5</b>	<b>50533.5</b>	<b>59502.6</b>	<b>82068.2</b>
<b>Total Expenditure on Adaptative measures</b>		<b>5</b>	<b>5</b>	<b>2</b>	<b>5</b>

**Table5 : Expenditure on Mitigation Measures by Ministry (In crores of Rupees)**

No.	Ministry	Major Head	Actual 2014-15	Budget 2015-16	Revised 2015-16	Budget 2016-17
<b>1.</b>	<b>Ministry of Human Resource Development</b>					
A.	Department of Higher Education					
	<i>Research &amp; Innovation</i>					
1	Training & Research in Frontier Areas	2203	34.63	50.00	15.00	15.00
2	National Initiative for Design Innovation	2203	11.16	35.00	33.00	35.00
3	Uchhatar Avishkar Abhiyan	2203				75
4	Implementation of the IMPRINT Research Initiative (Impacting Research Innovation & Technology)	2203				50.00
5	National Initiative for Technology Transfer	2203	14.65	25.00	14.50	50.00
			<b>60.44</b>	<b>110.00</b>	<b>62.50</b>	<b>225.00</b>
<b>2.</b>	<b>Ministry of Micro, Small and Medium Enterprises</b>					
	National Manufacturing Competitiveness Programme (NMCP)	2552	0.00	0.00	0.00	<b>52.90</b>
<b>3.</b>	<b>Ministry of Petroleum and Natural Gas</b>					
	Scheme for LPG connection to Poor Households	2802	0.00	0.00	0.00	<b>2000.00</b>
<b>4.</b>	<b>Ministry of Power</b>					
A.	Central Power Research Institute, Bengaluru					
		2801	<b>79.82</b>	<b>125.00</b>	<b>42.00</b>	<b>125.00</b>
<b>B.</b>	Bureau of Energy Efficiency					
1	Programme Component	2801	9.00	48.00	43.00	63.29
2	EAP Component	2801	0.00	2.00	2.00	0.71
	Total-Bureau of Energy Efficiency					64.00
3	Energy Conservation	2801	32.73	60.00	55.00	100.00
	<i>Total-Conservation and Energy Efficiency</i>		<b>41.73</b>	<b>110.00</b>	<b>100.00</b>	<b>164.00</b>

<i>Total</i>						
C.	Green Energy Corridor	4801	0.00	1.00	1.00	0.10
D.	Funds for Evaluation Studies and Consultancy	2801	0.05	0.30	0.30	0.01
E.	Smart Grid	2801	0.00	40.00	2.25	30.00
F.	<i>Integrated Power Development Scheme</i>					
1	<b>IPDS-Grant</b>					
39.	Integrated Power Development Scheme	2801	50.00	191.00	266.64	
25.	APDRP	2801	16.78	0.00	0.00	
	<b>Total IPDS Grant</b>	<b>2801</b>	<b>66.78</b>	<b>191</b>	<b>266.64</b>	<b>2761.96</b>
2	<b>IPDS Loans</b>					
29.	Loan to PFC for APDRP	6801	578.47	0.00	0.00	
30.	Loan to PFC for IPDS	6801	0.00	384.00	534.65	
	<b>Total IPDS Loans</b>	<b>6801</b>	<b>578.47</b>	<b>384.00</b>	<b>534.65</b>	<b>2384.19</b>
3	<b>Provision for North East and Sikkim</b>					
		2552	0.00	9.00	67.59	156.76
		6552	0.00	16.00	133.17	197.09
	<b>Total-Integrated Power Development Scheme</b>		<b>645.25</b>	<b>600.00</b>	<b>1002.05</b>	<b>5500.00</b>
	Total Expenditure by Ministry		766.85	876.30	1147.60	5819.11
5.	<b>Ministry of Science and Technology</b>					
A.	<b>Department of Science and Technology</b>					
1	<b>Research and Development</b>					
20.	Science and Engineering Research Board	3425	535	660	660	
23.	Alliance and R&D Mission	3425	417.46	544.5	560	
18.	National Mission on Nano Science & Nano Technology	3425	64.92	85	85	
24.	Super Computing Facility and Capacity Building	3425	0	84	84	
16	Total-Synergy Projects (O/o Pr. Scientific Adviser)		23.23	26	26	
12.	International Cooperation	3425	86.42	108.95	107.95	
	<b>Total R &amp; D</b>		<b>1127.03</b>	<b>1508.45</b>	<b>1522.95</b>	<b>1314.40</b>

2	Innovation, Technology Development and Deployment				
27.	Technical Research Centres	3425	1	137.5	100
9.	Technology Development Programme	3425	130.59	154	152.16
10.	S & T Programmes for Socio-Economic Development	3425	100.57	154	178
14.	Information Technology	3425	0.36	5	5
15.	Other Programmes	3425	0.39	0.4	0.66
17.	Drugs and Pharmaceutical Research	3425	16.2	16.67	14.67
	<b>Total</b>		<b>249.11</b>	<b>467.57</b>	<b>450.49</b>
	<b>Total Expenditure By Department</b>		<b>1376.14</b>	<b>1976.02</b>	<b>1973.44</b>
<b>B.</b>	<b>Department of Scientific and Industrial Research</b>				
1	National Laboratories	3425			
9.	National Laboratories	3425	2203.63	2745.00	2805.14
13.	New Millenium Indian Technology Leadership Initiative	3425	20.00	30.00	10.00
15.	CSIR-800 Scheme	3425	0.00	0.00	0.00
16.	CSIR Scheme for Open Innovation	3425	0.25	10.00	0.00
17.	CSIR Initiative for Inclusive, Participative and Collaborative Research & Development	3425	0.00	0.00	0.00
18.	National Civil Aircraft Development	3425	0.00	0.00	0.00
12.	Intellectual Property & Technology Management	3425	35.00	40.00	40.00
8.	Administration	3425	770.00	793.70	830.00
	<b>Total</b>		<b>3028.88</b>	<b>3618.70</b>	<b>3685.14</b>
<b>6.</b>	<b>Ministry of Coal</b>				
3.	<i>Coal and Lignite</i>				
3.01	Research & Development Programme	2552			<b>1.00</b>
		2803			<b>9.00</b>
	Research & Development Programme	2803	17.95	18.00	18.00
	<i>Total</i>				

3.02	Conservation Safety and Infrastructure Development in Coal Mines	2552				<b>0.05</b>
		2803				<b>150.45</b>
	Conservation and Safety in Coal Mines (Met out of cess collections)	2803	185.00	170.00	170.00	
	Environmental Measures & Subsidence control	2803	0.00	0.45	0.45	
		<i>Total</i>	<b>202.95</b>	<b>188.45</b>	<b>188.45</b>	<b>160.5</b>
<b>7.</b>	<b>Ministry of Heavy Industries and Public Enterprises</b>					
	Department of Heavy Industry					
2.	Development of Automobile Industry	2852				<b>282.05</b>
	Grant to Development Council for Automobile and Allied Industries (DCAAI)	2852	21.24	48.00	48.00	
	National Automotive Testing and R&D Infrastructure Project	2852	241.91	0.00	0.00	
	Scheme in Automotive Sector - Testing Infrastructure and R & D Projects for Electric Vehicles	2852	0.00	75.00	75.00	
		6858	0.00	0.00	0.00	0.01
		<i>Total</i>	<b>263.15</b>	<b>123.00</b>	<b>123.00</b>	<b>282.06</b>
<b>8.</b>	<b>Ministry of Communications and Information Technology</b>					
	Department of Electronics and Information Technology					
5.07	R&D in IT/Electronics/CCBT	2552				<b>11.00</b>
		2852				<b>111.00</b>
11.	Components & Material Development Programme	2852	27.60	0.60	0.60	
12.	Micro - Electronics and Nano-Technology Development Programme – NMC	2852	74.40	0.00	0.00	
18.	Convergence, Communication & Strategic Electronics	2852	26.00	0.00	0.00	
19.	R&D in Medical Electronics and Health Informatics (erstwhile Electronics in Health & Telemedicine)	2852	9.00	0.00	0.00	

	<i>Total</i>	<b>137.00</b>	<b>0.60</b>	<b>0.60</b>	<b>122.00</b>
<b>9. Ministry of Home Affairs</b>					
<b>Union Territories Without Legislature (Andaman and Nicobar Islands)</b>					
<b>8 Energy</b>					
Revenue	3710	460.58	481.16	535.31	598.09
Capital	5710	58.07	10.13	10.13	7.64
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>518.65</b>	<b>491.29</b>	<b>545.44</b>	<b>605.73</b>
<b>Union Territories Without Legislature (Chandigarh)</b>					
<b>8 Energy</b>					
Revenue	3710	661.05	736.15	735.59	757.53
Capital	5710	10.80	18.21	7.27	12.04
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>671.85</b>	<b>754.36</b>	<b>742.86</b>	<b>769.57</b>
<b>Union Territories Without Legislature (Dadra and Nagar Haveli)</b>					
<b>8 Energy</b>					
Revenue	3710	18.46	17.46	17.46	23.29
Capital	5710	58.64	57.00	49.50	56.00
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>77.10</b>	<b>74.46</b>	<b>66.96</b>	<b>79.29</b>
<b>Union Territories Without Legislature (Daman and Diu)</b>					
<b>8 Energy</b>					
Revenue	3710	20.42	23.14	22.39	24.71
Capital	5710	85.46	95.00	72.28	66.00
Loans and Advances	7710	0.00	0.00	0.00	0.00
<b>Total</b>		<b>105.88</b>	<b>118.14</b>	<b>94.67</b>	<b>90.71</b>
<b>Union Territories Without Legislature (Lakshadweep)</b>					



<b>8 Energy</b>					
Revenue	3710	116.07	58.28	58.36	99.42
Capital	5710	8.75	13.6	13.6	10
Loans and Advances	7710	0	0	0	0
<b>Total</b>		<b>124.82</b>	<b>71.88</b>	<b>71.96</b>	<b>109.42</b>
<b>10. Ministry of New and Renewable Energy</b>		3792.86	3660.73	5677.46	14192.83
<b>Total Expenditure on Mitigation measures</b>		<b>11126.57</b>	<b>12063.93</b>	<b>14380.08</b>	<b>30147.52</b>

**Table 6: Expenditure on Institutional Measures by Ministry (In crores of Rupees)**

No.	Ministry	Major Head	Actual 201415	Budget 201516	Revised 2015-16	Budget 2016-17
<b>1. Ministry of Human Resource Development</b>						
Department of School Education and Literacy						
1	Grants to Autonomous Bodies:					
	National Council of Educational Research & Training (NCERT)	2202	160.32	222.50	187.02	228.00
Department of Higher Education						
1	National Initiative to Foster Social Responsibility	2202				1.00
2	Indian School of Mines, Dhanbad	2203	172.49	174.50	174.50	185.20
3	Establishment of Multi-Disciplinary Research Universities including Central University of Himalayan Studies (CUHS), creation of Centres of Excellence & National Centre for Excellence in Humanities	2202				10.00
4	Unnat Bharat Abhiyan	2203				10.00
			172.49	174.50	174.50	206.20
<b>2. Ministry of Information and Broadcasting</b>						
	Kisan Channel & Grants-in-aid to Prasar Bharati for Kisan Channel	2221	26.00	45.00	26.25	52.00
<b>3. Ministry of Mines</b>						
A.	Indian Bureau of Mines	2552				1.20
		2853	77.66	101.67	81.40	95.44
		4552				3.53
		4853	0.25	0.86	0.92	1.06
	<b>Total</b>		<b>77.91</b>	<b>102.53</b>	<b>82.32</b>	<b>101.23</b>
B.	Geological Survey of India					
2.		2552				24.08
		2853	693.19	882.45	746.12	849.56
		4552				1.50
		4853	32.24	47.92	46.80	152.30
	<b>Total</b>		<b>725.43</b>	<b>930.37</b>	<b>792.92</b>	<b>1027.44</b>
C.	<i>Total-Research and Exploration</i>					
1	Bharat Gold Mine Ltd. (BGML)	2853	4.36	2.70	9.45	3.00
2	Grants to Mineral Exploration Corporation Ltd.	2853	11.00	40.00	36.26	29.15
3	Other Programme / Bodies	2853	32.69	27.15	26.80	26.67

<b>Total-Research and Exploration</b>		<b>48.05</b>	<b>69.85</b>	<b>72.51</b>	<b>58.82</b>
		851.39	1102.75	947.75	1187.49
<b>4.</b>	<b>Ministry of Planning</b>				
	Atal Innovation Mission (AIM) including Self Employment and Talent Utilization (SETU)	3475	0.00	0.00	0.00
					150.00
	National Rainfed Area Authority	2401	3.99	0.00	0.00
		4059	5.00	0.00	0.00
	<i>Total</i>		<i>8.99</i>	<i>0.00</i>	<i>0.00</i>
<b>5.</b>	<b>Ministry of Power</b>		<b>8.99</b>	<b>0.00</b>	<b>0.00</b>
1	Central Electricity Authority				
		2801	72.88	108.11	88.73
		4801	0.00	1.30	1.00
	<b>Total</b>		<b>72.88</b>	<b>109.41</b>	<b>89.73</b>
2	<b>Setting up of Joint JERC for UTs and Goa</b>	2801	5.42	6.33	5.84
			78.30	115.74	95.57
<b>6.</b>	<b>Ministry of Road Transport and Highways</b>				
	Research, Training and Other Road Safety Schemes	3055	121.88	150.00	150.00
<b>7.</b>	<b>Ministry of Rural Development</b>				
<b>A.</b>	Department of Rural Development				
1	Management support to Rural Development Programme and strengthening of District Planning Process				
		2515	125.84	118.80	118.80
		2552	0.00	13.00	13.00
	<b>Total</b>		<b>125.84</b>	<b>131.80</b>	<b>131.80</b>
<b>B.</b>	Department of Land Resources				
	Digital India: Land Records Modernisation Programme (Central Sector) erstwhile NLRMP				
		2506	0.76	20.00	5.42
		2552	0.00	7.28	4.00
		3601	178.53	65.49	30.57
		3602	0.00	5.00	0.01
	<i>Total</i>		<i>179.29</i>	<i>97.77</i>	<i>40.00</i>
<b>8.</b>	<b>Ministry of Science and Technology</b>				
	<b>Department of Scientific and Industrial Research</b>				

	Industrial Research and Development					
23.	Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM)	3425	2.20	7.00	3.00	
24.	Patent Acquisition and Collaborative Research and Technology Development (PACE)	<i>Total</i>	<i>2.03</i>	<i>7.00</i>	<i>5.00</i>	
25.	Building Industrial R&D and Common Research Facilities (BIRD)	<i>Total</i>	<i>5.89</i>	<i>9.00</i>	<i>6.30</i>	
26.	Access to Knowledge for Technology Development and Dissemination (A2K)	3425	9.08	11.00	8.70	
	<b>Total</b>		<b>19.20</b>	<b>34.00</b>	<b>23.00</b>	<b>24.50</b>
<b>9.</b>	<b>Department of Space</b>					
1	Space Applications Centre (SAC)					
		3402	309.53	329.00	386.73	413.39
		5402	67.64	123.00	137.29	165.00
		<i>Total</i>	<i>377.17</i>	<i>452.00</i>	<i>524.02</i>	<i>578.39</i>
2	National Remote Sensing Centre (NRSC)					
		3402	192.59	211.00	207.00	222.00
		5402	52.16	94.00	78.00	90.00
	<b>Total</b>		<b>244.75</b>	<b>305.00</b>	<b>285.00</b>	<b>312.00</b>
3	Indian Institute of Remote Sensing					
		3402	22.79	25.00	25.93	27.00
		5402	7.75	19.00	15.54	18.00
	<b>Total</b>		<b>30.54</b>	<b>44.00</b>	<b>41.47</b>	<b>45.00</b>
			<b>652.46</b>	<b>801.00</b>	<b>850.49</b>	<b>935.39</b>
<b>10.</b>	<b>Ministry of Agriculture and Farmers Welfare</b>					
	<b>Department of Agriculture, Cooperation and Farmers Welfare</b>					
	National Rainfed Area Authority	2401	0.00	20.00	6.75	17.42
	<b>Department of Animal Husbandry, Dairying and Fisheries</b>					
3.	<i>Blue Revolution - Integrated Development &amp; Management of Fisheries</i>					
3.01	National Fisheries Development Board	2405	137.50	114.61	112.31	147.26
		2552				

24.	Lumpsum provision for Project/Schemes for the benefit of the North Eastern Region and Sikkim	2552	0.00	104.16	97.59	44.86
	<i>Total</i>		137.50	218.77	209.90	<b>192.12</b>
<b>11.</b>	<b>Department of Atomic Energy</b>					
	<i>Atomic Energy</i>					
2.	Atomic Energy Regulatory Board	3401	46.97	48.99	49.20	58.50
		5401	4.17	30.01	9.80	47.51
	<i>Total</i>		51.14	79.00	59.00	106.01
<b>12.</b>	<b>Ministry of Commerce and industry</b>					
	A.Department of Industrial Policy and Promotion					
4.	Indian Leather Development Programme	2852	270.00	150.00	235.00	300.00
	Project based Support to Autonomous Institutions	2552	0.00	21.50	0.81	32.00
		2852	94.29	61.00	59.19	78.00
	<i>Total</i>		<b>94.29</b>	<b>82.50</b>	<b>60.00</b>	<b>110.00</b>
<b>13.</b>	<b>Ministry of Development of North Eastern Region</b>					
	NE Development Finance Corporation	6885	60.00	30.00	30.00	75.00
<b>14.</b>	<b>Ministry of Health and Family Welfare</b>					
	Department of Health Research					
3.	Infrastructure Development for Health Research	2210				
	Model Rural Health Research Units in the States	2210	13.00	9.00	6.00	64.50
	Matters Relating to Epidemics, Natural Calamities and Development of Tools to Prevent Outbreaks	2210	30.00	40.50	42.71	
		2552	0.00	0.00	0.00	7.25
	<i>Total</i>		43	49.5	48.71	<b>71.75</b>
	<b>Total Expenditure on Institutional measures</b>		<b>3052.09</b>	<b>3504.83</b>	<b>3275.74</b>	<b>4369.53</b>

**Table 7: Expenditure on Capacity- Building Measures by Ministry (In crores of Rupees)**

No.	Ministry	Major Head	Actual 2014-15	Budget 2015-16	Revised 2015-16	Budget 2016-17
<b>1.</b>	<b>Ministry of Panchayati Raj</b>					
A.	<i>Digital India Initiative: e-Panchayat</i>					
1	Mission mode Project on e-Panchayats	2515	0.00	0.00	0.00	22.00
2	Incentivization of Panchayats	2515	0.00	0.00	0.00	38.00
3.03	ATM services in Panchayat Bhawans	2515	0.00	0.00	0.00	10.00
	<i>Total-Digital India Initiative: e-Panchayat</i>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>70.00</b>
B.	<i>Capacity Building: Panchayat Sashaktikaran Abhiyan</i>					
	Capacity Building: Panchayat Sashaktikaran Abhiyan					
		2552				75.00
		2515	43.11	50.00	169.00	580.00
		3601	482.54	0.00	0.00	
		3602	0.00	0.00	0.00	
	<b>Total</b>		<b>525.65</b>	<b>50.00</b>	<b>169.00</b>	<b>655.00</b>
			<b>525.65</b>	<b>50.00</b>	<b>169.00</b>	<b>725.00</b>
<b>2.</b>	<b>Ministry of Rural Development</b>					
A.	Department of Rural Development					
	National Institute of Rural Development					
		2515	43.93	63.25	62.80	64.00
		2552	0.00	5.00	5.00	5.00
	<b>Total</b>		<b>43.93</b>	<b>68.25</b>	<b>67.80</b>	<b>69.00</b>
<b>3.</b>	<b>Ministry of Science and Technology</b>					
A.	<b>Department of Science and Technology</b>					
1	S&T Institutional and Human Capacity Building					
6	Modernisation of Mapping Organizations (SOI and NATMO)		331.27	364.59	343.91	
7.	Autonomous Institutions & Professional Bodies	3425	709.10	872.50	899.50	
8.	Research and Development Support -Multi-Disciplinary Research in Science and Technology	3425	260.21	330.75	330.75	
11.	State Science & Technology Programme	3425	32.32	35	45	
21.	Policy Research Cell	3425	7.94	17	7	
22.	Disha Programme for women in Science	3425	43.85	53	58	

26.	Fund for Inclusive Innovations for Common Man	3425	0	0	0	
		<b>Total</b>	<b>1384.69</b>	<b>1672.84</b>	<b>1684.16</b>	<b>2462.68</b>
<b>B. Department of Scientific and Industrial Research</b>						
3.	Assistance to Autonomous Bodies, PSEs and International Bodies	<b>3425</b>				<b>13.75</b>
19.	<i>Assistance to Other Scientific Bodies</i>					
19.01	Support for R&D Schemes to Central Electronics Limited	3425	6.00	3.00	8.00	
19.02	National Research Development Corporation	3425	7.96	1.00	4.60	
	<i>Total-Assistance to Other Scientific Bodies</i>		<i>13.96</i>	<i>4.00</i>	<i>12.60</i>	
22.	Consultancy Development Centre (CDC)	3425	2.00	0.50	1.40	
		<b>4859</b>				<b>0.75</b>
20.	Investment in Public Enterprises - Central Electronics Limited	4859	7.00	1.00	1.00	
		6859	7.00	0.00	0.00	
		<i>Total</i>				<i>0.50</i>
		5425				<i>15.00</i>
		<i>Total</i>				<i>15.00</i>
2	Capacity Building and Human Resource Development	<b>3425</b>				<b>300.00</b>
10.	Scientist's Pool	3425	8.00	10.00	8.00	
11.	Research Schemes, Scholarships and Fellowships	3425	288.00	288.00	295.00	
	<b>Total</b>		<b>339.92</b>	<b>307.50</b>	<b>330.60</b>	<b>330.00</b>
<b>4. Department of Space</b>						
	Assistance to Autonomous Bodies	<b>3402</b>				
37.	Indian Institute of Space Science & Technology	3402	80.00	151.00	76.50	
45.	Semi-Conductor Laboratory (SCL)	<i>Net</i>	<i>88.91</i>	<i>179.44</i>	<i>194.00</i>	
68.	North Eastern Space Applications Centre (NE-SAC)	3402	18.90	25.00	14.02	
69.	Physical Research Laboratory (PRL)	3402	105.33	141.00	124.26	
70.	National Atmospheric Research Laboratory (NARL)	3402	20.00	23.20	23.20	
	<b>Total</b>		<b>313.14</b>	<b>519.64</b>	<b>431.98</b>	<b>530.87</b>
<b>5. Ministry of Development of North Eastern Region</b>						
4.	<i>Livelihood, Skill and Capacity Building</i>					
4.01	Capacity Building & Publicity	2250	15.97	16.00	11.00	73.00





3.	Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)	75.29	318	331.14	400	616.77	1214	1125	1326.2	0.12	0.26	0.29	0.30	12.21	26.19	29.43	30.16
4.	Ministry of Coal	202.95	188.45	188.45	160.5	699.79	606	603.3	361	0.29	0.31	0.31	0.44	29.00	31.10	32.44	44.64
5.	Ministry of Commerce and industry																
	Department of Industrial Policy and Promotion	94.29	82.5	60	110	1866.7	2616.19	2435.75	3026.55	0.05	0.03	0.02	0.04	5.05	3.15	2.46	3.63
	Total	94.29	82.5	60	110	7327.97	7707.7	6774.4	7389.35	0.01	0.01	0.01	0.01	1.29	1.07	0.89	1.49
6.	Ministry of Communications and Information Technology																
	Department of Electronics and Information Technology	137	0.6	0.6	122	3498.16	2630	2759	3328.82	0.04	0.00	0.00	0.04	3.92	0.02	0.02	3.66
	Total	137	0.6	0.6	122	2086.844	2324.3	3031.147	30768.22	0.01	0.00	0.00	0.00	0.66	0.00	0.00	0.40
7.	Ministry of Development of North Eastern Region	165.97	61	131	298	1719.44	2362.74	2000.14	2430.01	0.10	0.03	0.07	0.12	9.65	2.58	6.55	12.26
8.	Ministry of Drinking Water and Sanitation	12090.83	6243.87	10906.53	14009.7	12090.83	6243.87	10906.53	14009.7	1	1	1	1	10	100	100	100
9.	Ministry of Earth Sciences	1293.87	1619.7	1418	1672.45	1293.87	1619.7	1418	1672.45	1	1	1	1	10	100	100	100

<b>10.</b>	Ministry of Environment, Forests and Climate Change	1599.24	1681.6	1668.6	2250.34	1599.24	1681.6	1668.6	2250.34	1	1	1	1	100	100	10	10
<b>11.</b>	Ministry of Finance																
	Transfers to States	0	0	2989	0	128107.15	125189.52	119178.52	125496.36	0	0	0.025	0	0	0	2.51	0
<b>12.</b>	Ministry of Health and Family Welfare																
	Department of Health and Family Welfare	18929.42	18328.46	18328.46	19037	30626.39	31050	32819	37061.55	0.62	0.59	0.56	0.51	61.8	59.03	5.87	51.3
	Department of Health Research	43	49.5	48.71	71.75	910.78	1018.17	1012.6	1144.8	0.05	0.05	0.06	0.072	4.72	4.86	4.8	6.27
	total	18972.42	18377.96	18377.17	19108.75	31537.17	32068.17	33831.6	38206.35	0.60	0.57	0.54	0.50	60.16	57.31	5.3	50.1
<b>13.</b>	Ministry of Heavy Industries and Public Enterprises																
	Department of Heavy Industry	263.15	123	123	282.06	1197.34	1624.73	921	1300	0.22	0.08	0.13	0.22	21.98	7.57	1.3	21.7
	total	263.15	123	123	282.06	1211.06	1643.73	939.18	1320.42	0.22	0.07	0.13	0.21	21.73	7.48	1.3	21.6
<b>14.</b>	Ministry of Home Affairs																
	Ministry of Home Affairs	509.28	919.29	650.99	1579.75	2849.65	4134.59	3955.65	4630.9	0.18	0.22	0.16	0.34	17.87	22.23	1.4	34.1
	Transfers to Union Territories with Legislature	188	0.01	0.01	0.01	1700	1768	1826.9	2148	0.11	0.00	0.00	0.00	11.6	0.00	0.00	0.00
	total	697.28	919.3	651	1579.7	6124	6844	7010	77383.1	0.0	0.01	0.0	0.0	1.1	1.34	0.0	2.0

				6	3.72	4.1	8.95	2	1		1	2	14		9	04	
															3		
<b>1</b>	Ministry of																
<b>5.</b>	Human Resource Development																
	Department	232.93	284.5	237	431.2	2315	2685	2539	28840	0.0	0.01	0.0	0.0	1.	1.06	0.	1.
	of Higher					2.48	5.26	9		1		1	1	01		9	50
	Education															3	
	Department	160.32	222.5	187.02	228	4572	4221	4218	43554	0.0	0.01	0.0	0.0	0.	0.53	0.	0.
	of School					2.41	9.5	6.5		0		0	1	35		4	52
	Education and Literacy															4	
	Total	393.25	507	424.02	659.2	6887	6907	6758	72394	0.0	0.01	0.0	0.0	0.	0.73	0.	0.
						4.89	4.76	5.5		1		1	1	57		6	91
																3	
<b>1</b>	Ministry of																
<b>6.</b>	Information and Broadcasting																
	Ministry of	26	45	26.25	52	3136	3711	3588	4083.63	0.0	0.01	0.0	0.0	0.	1.21	0.	1.
	Information and Broadcasting					.45	.11	.58		1		1	1	83		7	27
																3	
<b>1</b>	Ministry of	851.39	1102.	947.75	1187.4	867.	1155	997.	1213.49	0.9	0.95	0.9	0.9	98	95.4	9	97
<b>7.</b>	Mines		75		9	68	.71	61		8		5	8	.1	2	5.	.8
														2		0	6
																0	0
<b>1</b>	Ministry of	0	0	0	52.9	2766	3007	3020	3464.77	0	0	0	0.0	0	0	0	1.
<b>8.</b>	Micro, Small and Medium Enterprises					.6	.42	.88				2					53
<b>1</b>	Ministry of	515.18	303.2	262.07	5035.7	515.	303.	262.	5035.79	1	1	1	1.0	10	100	1	10
<b>9.</b>	New and Renewable Energy		1		9	18	21	07				0	0			0	0.
																0	00
<b>2</b>	Ministry of	525.65	50	169	725	3390	94.7	221.	768.33	0.1	0.53	0.7	0.9	15	52.7	7	94
<b>0.</b>	Panchayati Raj					.55	5	5		6		6	4	.5	7	6.	.3
														0		3	6
																0	0
<b>2</b>	Ministry of	0	0	0	2000	6031	3012	3134	29160.6	0	0	0	0.0	0	0	0	6.
<b>1.</b>	Petroleum and Natural Gas					0.18	5.55	9.35	2			7					86
<b>2</b>	Ministry of	8.99	0	0	150	1805	2211	2040	293.14	0.0	0	0	0.5	0.	0	0	51

2.	Planning					.58	.63	.69		0			1	50			.17
2	Ministry of	845.15	992.0	1243.1	5925.9	1320	6725	8005	12252.7	0.0	0.15	0.1	0.4	6.	14.7	1	48
3.	Power		4	7	6	4.85	.93	.1	1	6		6	8	40	5	5.	.36
																	3
2	Ministry of	121.88	150	150	200	3304	4575	4710	57976	0.0	0.00	0.0	0.0	0.	0.33	0.	0.
4.	Road					8.49	1.65	7		0		0	0	37		3	34
	Transport and Highways															2	
2	Ministry of																
5.	Rural Development																
	Department of Rural Development	169.77	200.0	199.6	325.8	6731	7169	7770	86055.8	0.0	0.00	0.0	0.0	0.	0.28	0.	0.
			5			0.61	5.08	0.35		0		0	0	25		2	38
	Department of Land Resources	2498.0	1627.	1570	406.85	2506	1637	1578	1709.36	1.0	0.99	0.9	0.2	99	99.4	9	23
		4	77			.41	.5	.32		0		9	4	.6	1	9.	.8
														7		4	0
																7	
	Total	2667.8	1827.	1769.6	732.65	6981	7333	7927	87765.1	0.0	0.02	0.0	0.0	3.	2.49	2.	0.
		1	82			7.02	2.58	8.67	6	4		2	1	82		2	83
																3	
2	Ministry of																
6.	Science and Technology																
	Department of Science and Technology	2760.8	3648.	3657.6	4390.8	2889	3835	3828	4470.2	0.9	0.95	0.9	0.9	95	95.1	9	98
		3	86		8	.84	.7	.68		6		6	8	.5	3	5.	.2
														4		5	3
	Department of Scientific and Industrial Research	3388	3960.	4038.7	4064.7	3393	4031	4036	4062.8	1.0	0.98	1.0	1.0	99	98.2	1	10
			2	4		.53		.7		0		0	0	.8	4	0	0.
														4		0	05
																5	
	Total	6148.8	7609.	7696.3	8455.5	7630	9491	9489	10353	0.8	0.80	0.8	0.8	80	80.1	8	81
		3	06	4	8	.34	.84	.73		1		1	2	.5	6	1.	.6
														8		1	7
																0	
2	Ministry of	1608.3	2345.	2152.7	2544.2	5798	7388	6959	7509.14	0.2	0.32	0.3	0.3	27	31.7	3	33
7.	Statistics and Programme Implementation	7	59	6	1	.81	.19	.44		8		1	4	.7	5	0.	.8
														4		9	8
																3	
2	Ministry of																
8.	Home Affairs																

	Union Territories Without Legislature (Andaman and Nicobar Islands)	920.73	939.2	1059	1137.3	3310	3741	3957	4045.02	0.2	0.25	0.2	0.2	27	25.1	2	28
	Union Territories Without Legislature (Chandigarh)		2		7	.65	.38	.83		8		7	8	.8	0	6.	.1
	Union Territories Without Legislature (Dadra and Nagar Haveli)	258.35	255.5	270.96	297.5	770.	891.	1039	1055.84	0.3	0.29	0.2	0.2	33	28.6	2	28
	Union Territories Without Legislature (Daman and Diu)	159.39	181.9	148.26	150.4	675.	878.	689.	762.72	0.2	0.21	0.2	0.2	23	20.7	2	19
	Union Territories Without Legislature (Lakshadweep)	172.07	129.6	130.17	174.28	954.	1059	1109	1224.54	0.1	0.12	0.1	0.1	18	12.2	1	14
	Total	2488.9	2645.06	2731.4	2902.6	8773	1002	1001	10622.6	0.2	0.26	0.2	0.2	28	26.3	2	27
		8		1	.81	6.25	7.26	6	8		7	7	.3	8	7.	.3	
													7		2	2	7
<b>29.</b>	Ministry of Water Resources, River Development and Ganga Rejuvenation	5480.0	4232.43	7032.4	6201.2	5480	4232	7032	6201.21	1	1	1	1	10	100	1	10
		5		3	1	.05	.43	.43					0		0	0	0

## Appendix 2: Climate Change related Adaptative Expenditure

### A. Ministry of Rural Development (Department of Land Resources)

1. **Pradhan Mantri Krishi Sinchayee Yojana (Watershed Development Component) erstwhile Integrated Watershed Management Programme (IWMP)** : The Department of Land Resources has been implementing Integrated Watershed Management Programme (IWMP) w.e.f. 2009- 10 as per the Common Guidelines for Watershed Development Projects, 2008 (Revised 2011). The cost norm is 12000/ per hectare for the plains, 15000/ per hectare for the hilly and difficult areas and up to 15000/ per ha, for IWMP projects in Integrated Action Plan (IAP) Districts. New components for dedicated institutions at State, District, Projects and village levels, Production Systems and micro enterprises for small and marginal farmers and livelihood activities for landless people in addition to core watershed activities like soil and water conservation, drainage line treatment, afforestation, horticulture, pasture development, etc. have been incorporated in IWMP programme. From 2015-16 the IWMP has been made as the Watershed Development Component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). The funding pattern of the Watershed Development Component of PMKSY is 60:40 between Centre and State for all States except North Eastern States and Hill States (Jammu and Kashmir, Himachal Pradesh and Uttarakhand) wherein the funding pattern between Centre and State is 90:10. The Government has approved implementation of the World Bank Assisted National Watershed Management Project, Neeranchal with a total outlay of Rs.2142.30 crores (US Dollar 357 million,(Rs. 60 Equal to US Dollar 1).

### B. Department of Space

1. **ISRO Space Application Programmes:** Under this, provision has been included for the expenses of Space Application Programmes undertaken by ISRO which include:
  - a) **National Natural Resources Management System (NNRMS):** The National Natural Resources Management System (NNRMS) has the objective of ensuring optimal management/utilization of natural resources by integrating information derived from remote sensing data with conventional techniques.
  - b) **Earth Observation Applications Mission (EOAM):** The main goal of the Earth Observation Application Mission (EOAM) are to (i) evolve newer application/R&D programmes based on 402 Notes on Demands for Grants, 2016-2017 No. 84/Department of Space technology trends leading to operational applications programmes; (ii) guiding total remote sensing applications programmes towards implementation of remote-sensing based solutions and (iii) steering remote sensing applications with value-added services to the users.

- c) **Disaster Management Support (DMS):** The main objective of Disaster Management Support Programme is to provide Space inputs & services on a timely & reliable basis for the Disaster Management System in the country.
2. **ISRO Space Science Programmes:** Under this, provision has been included for the expenses of Space Science Programmes undertaken by ISRO which include:
- a) **The RESPOND Programme** of ISRO supports sponsored research activity in Space Science, Space Applications and Space Technology in various national academic, research institutions and Space Technology Cells in premier technological institutes of the country through grants in aid.
- b) **Sensor Payload Development, Planetary Science Programme** It includes funding requirement for advance action for activities related to scientific payload developments for space science and planetary exploration studies in different institutions and universities.
- c) **ISRO Geosphere Biosphere Programme** encompasses the study of land and ocean interaction, past climate, changes in atmospheric composition, aerosols, carbon cycle, bio mass estimation, bio diversity and other related areas of scientific investigation.
- d) **Atmospheric Science Programmes** Atmospheric Science Programmes is intended to develop advanced observation tools and techniques of atmospheric modeling, leading to operational end user products in different domains of atmospheric science.
- e) **Small Satellite for Atmospheric Studies and Astronomy** envisages development of small satellites for study of Earth's near space environment, magnetometer studies, study of aerosol and gases, tropical weather and climate studies.
- f) **Other Schemes** includes Microgravity Research, Space Science promotion, Multi institutional research programs, Space Station experiment etc.
3. **ISRO Satellite Centre (ISAC) & Its Projects:** ISAC is the lead Center for the design, fabrication, testing and management of satellite systems for scientific, technological and application missions. The Projects under ISAC include:
- a) **Navigation Satellite System (NSS):** The Indian Regional Navigation Satellite System (IRNSS), is planned to be a constellation of 7 satellites aimed at providing position accuracies similar to Global Positioning System (GPS) in a region centered around India with a coverage extending up to 1500 km from India.
- b) **Geo-Imaging Satellite (GISAT):** Geo-Imaging satellite (GISAT) is conceived as a multi-spectral, multi-resolution advanced remote sensing satellite capable of imaging from geo-stationary orbit.
- c) **Resourcesat-2A:** Resourcesat-2A is planned as a follow-on mission to Resourcesat-2 satellite. Apart from providing continuity of already established services, it will also provide opportunity to explore newer application areas in Land and Water resources management.

- d) Cartosat-3: Cartosat-3 is an advanced remote sensing satellite with enhanced resolution of 0.25m for cartographic applications and high resolution mapping.
- e) Scatsat: Scatsat is a remote sensing satellite which will carry a pencil beam Ku band scatterometer to provide measurement of wind vector and a millimeter wave sounder to provide data on vertical temperature profile of the atmosphere. This will be mainly used for atmospheric and oceanographic studies.
- f) Risat-1A: Risat-1A is a follow-on mission to RISAT-1 with C-band multi-polarized Synthetic Aperture Radar having capability of imaging under all weather conditions.
- g) Oceansat-3 & 3A: Oceansat-3 is an advanced remote sensing satellite with for oceanographic applications. This will carry an Ocean Color Monitor (OCM-3) with 13 bands and a Ku band pencil beam scatterometer.
- h) Cartosat-2E: Cartosat-2E is a high resolution cartographic satellite with improved resolution of 0.65m in panchromatic band along with imaging capability in multi-spectral bands. The satellite will provide value added products and services to the user community especially for large scale mapping and monitoring requirements.
- i) Risat-3: Risat-3 is an advanced remote sensing satellite with a Synthetic Aperture Radar for all weather day night imaging.
- j) NASA-ISRO Synthetic Aperture Radar Mission (NISAR): NISAR is a dual frequency radar imaging satellite to be jointly developed by NASA and ISRO to study surface deformation, terrestrial biomass structure, natural resources mapping & monitoring and studies related to dynamics of ice sheets, glaciers, forest fire, oil slick etc.
- k) Development of Space Components: Development of Space components is an effort to indigenously develop space grade components with the help of Indian Industry for Indian Space Programme in order to reduce dependency on foreign sources.
- l) Resourcesat-3S/3SA: Resourcesat-3S & 3SA are two high resolution remote sensing satellites with improved resolution for advanced land, water resources and large scale stereo mapping applications with two Panchromatic cameras.

**C. Ministry Of Agriculture and Farmers Welfare (under Department of Agriculture, Cooperation and Farmers Welfare)**

1. **Pradhan Mantri Fasal Bima Yojna** : The provision is for Pradhan Mantri Fasal Bima Yojna - National Crop Insurance Scheme which includes existing National Agriculture Insurance Scheme (NAIS), Weather-based crop insurance scheme, Modified National Agricultural Insurance Scheme (MNAIS) being implemented through Agriculture Insurance Corporation and Coconut Palm Insurance Scheme.
2. **Interest Subsidy for Short Term Credit to Farmers**: The provision is for interest subsidy to NABARD, Regional Rural Banks, Cooperative Banks, Public Sector Banks and scheduled Private Sector Banks for providing Short Term Credit to farmers at subsidized rate of interest.
3. **Rashtriya Krishi Vikas Yojana (RKVY)** : RKVY is designed as a programme for achieving high growth in agricultural sector and for integrated development by



focussing on food security, sustainable agriculture, production of oil seeds, oil palm and through agricultural extension, as a part of Krishonnati Yojana (State).

4. **Pradhan Mantri Krishi Sinchai Yojana (PMKSY)** : PMKSY will provide end to end solutions in irrigation supply chain, viz. water sources, distribution network and farm level application. This programme will mainly focus and ensuring access to water to every agriculture farm (Har Khet Ko Pani) and increasing agricultural production and productivity by increasing availability and efficient use of water.
  - i. **National Project on Agro Forestry:** The provision is for National Project on Agro Forestry under National Mission on Sustainable Agriculture (NMSA) to give specific focus on Development of Agro-Forestry. National Agro-Forestry Policy was brought out in 2014 to bring about coordination, convergence and synergy among various elements of Agro-Forestry.
  - ii. **National Project on Organic Farming / Value Chain Development for North East Region:** Provision under National Project on Promotion of Organic Farming is for promotion and capitalization of vast potential of organic farming at National level. Provision is to capitalize the vast potential of Organic Farming in the North East region. A new Central Sector Scheme ' Organic Value Chain Development for North East Region' has been launched for its implementation in NE State.
  - iii. **Paramparagat Krishi Vikas Yojana:** Provision is for Parampragat Krishi Vikas Yojna
  - iv. **National Project on Soil Health & Fertility:** Provision is for National Project on Management of Soil Health and Fertility.
  - v. **Soil and Land Use Survey of India:** Provision is for Soil and Land Use Survey of India.
  - vi. **Grants to Damodar Valley Corporation:** The provision is for Grants to Damodar Valley Corporation for conducting field level trainings in areas of Soil and Water Conservation, Rain Water Harvesting, Climate Change Adaption and mitigation in Agriculture and allied sectors.
  - vii. **NMSA - Rainfed Area Development and Climate Change:** The provison is for National Mission on Sustainable Agriculture (Rainfed Area Development & Climate Change).
5. **National Mission on Agriculture Extension and Technology**
  - i. **Sub-Mission on Seed and Planting Material:** For addressing national priorities and objectives of adequate production of seed and planting material, hybrids, promotion of new technologies like tissue culture etc. restructured scheme Sub-Mission on Seeds

and Planting Material has been launched. Existing schemes of seed division will be subsumed in it. This includes provision for Protection of Plant Varieties of Farmers Rights legislation and National Seeds Research Training Centre.

- ii. **Sub-Mission on Plant Protection & Plant Quarantine:** The provision is for restructured scheme Sub-Mission on Plant Protection and Plant Quarantine. Existing schemes of Plant Protection and Plant Quarantine have been subsumed in it. The provision is for National Institute Plant Health Management to promote environmentally sustainable Plant Health Management practices in diverse and changing agro-climatic conditions and Bio-Security & Incursion Management besides extending policy support to Central and State Government.
- iii. **Sub-Mission on Agricultural Extension:** The goal of the mission is extension for all and reaching the unreached to improve the income and livelihoods of farming community especially the small and marginal farmers and contribute to the achievement of faster, sustainable and more inclusive growth.
- iv. **Information Technology:** The provision is for Strengthening/ promoting Agriculture Information System and National E-Governance Plan Agriculture relating to Information & Technology.
- v. **Sub-Mission on Agriculture Mechanisation:** The provision is for sub-mission on Agriculture Mechanisation which is for Farm Machinery Training and Testing Institutes. They provide training to the progressive farmers technicians, nominees of State Governments and Agro Industries Corporations, farming institutions and engineering entrepreneurs. The provision is also for demonstration of newly developed agricultural equipment including horticultural equipment at farmers field and post harvest technology and management.
6. **Natural Resource Management & Climate Resilient Agriculture (under Department of Agricultural Research and Education):** The project aims to enhance resilience of Indian agriculture to climate change and climate variability through strategic research and technology demonstration. Strategic research on adaptation to progressive climate change covers crops, livestock, fisheries and natural resource management. Technology demonstration focuses on participatory evaluation of location specific interventions in vulnerable districts of India to enable farmers cope with current climate variability.

#### **D. Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)**

1. **National Health Mission: AYUSH:** Provision is for components of AYUSH services, AYUSH Educational Institutions, Quality Control of ASU&H Drugs and Medicinal Plant.

**The basic objective** of NAM is to promote AYUSH medical systems through cost effective AYUSH services, strengthening of educational systems, facilitate the

enforcement of quality control of Ayurveda, Siddha and Unani & Homoeopathy (ASU &H) drugs and sustainable availability of ASU & H raw materials. It envisages flexibility of implementation of the programmes which will lead to substantial participation of the State Governments/UT. The NAM contemplates establishment of a National Mission as well as corresponding Missions in the State level. NAM is likely to improve significantly the Department's outreach in terms of planning, supervision and monitoring of the schemes.

#### **E. Ministry of Health and Family Welfare (under Department of Health and Family Welfare)**

1. **National Health Mission:** The activities under the Mission provides for health needs of rural and urban population including control of Vector Borne Diseases, TB, and Leprosy etc. It supports decentralized planning and flexible programming by the States including development of State and district level Project Implementation Plans (PIPs) with a focus on outcomes particularly relating to vulnerable sections, and community based monitoring & evaluation.

#### **F. Ministry of Finance (Under Transfer to states)**

1. **Transfer to National Calamity Contingency Fund/ Transfer to National Disaster Response Fund (NDRF)**

Assistance to States from National Disaster Response Fund: The erstwhile National Calamity Contingency Fund (NCCF) which was constituted as per the recommendations of the Eleventh Finance Commission has been merged into National Disaster Response Fund (NDRF) in line with the recommendation of the Thirteenth Finance Commission. The amount collected from National Calamity Contingent Duty (NCCD) is transferred to the NDRF and assistance to States is provided to supplement funds from the State Disaster Response Fund (SDRF) of a State, to facilitate immediate relief in case of calamities beyond the coping capacity of the States.

#### **G. Ministry of Home Affairs (under Ministry of Home Affairs)**

1. **Disaster Management:** The provision is for expenditure on
  - (i) National Disaster Management Programmes (both natural disaster and man-made disasters)
  - (ii) For providing grant-in-aid to various institutions / universities for disaster related IEC and Training,
  - (iii) USAID Disaster Management, National Disaster Management Authority,
  - (iv) National Institute of Disaster Management New Delhi & Andhra Pradesh
  - (v) NDRF.

## 2. Assistance for U.T. Plans

(under Transfers to Union Territories with Legislature): Provision is made to provide Normal Central Assistance for financing the plan schemes of Govt. of Puducherry and Govt. of National Capital Territory of Delhi. This includes EAP projects on Coastal Disaster Risk Reduction Project.

## H. Union Territories without Legislature

UT's namely Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Lakshadweep are included. Expenditures by Departments of forests and wildlife, Health, Irrigation & Flood Control are included under every UT.

### Notes on Mitigation Measures

#### A. Ministry of Human Resource Development

##### a. Department of Higher Education

##### 1. Research & Innovation:

- I. **Training and Research in Frontier Areas:** It is proposed to establish centers of excellence for advanced training and research in the frontier areas including biotechnology, bioinformatics, nano-materials, nano-technologies, mechatronics, higher performance computing engineering/industrial design, professional/business ethics, and skills development.
- II. **Setting up of Inter Institutional Centres, Creation of Excellence Clusters and Network, Establishing Alliances across Institutions:** This includes provision for Setting up of Inter Institutional Centers, Creation of Excellence Clusters and Network, Establishing Alliances Across Institutions.
- III. **National Initiative for Design Innovation:** Setting up of 20 new Design Innovation Centres, One Open Design School and National Design Innovation Network and linking them together. ODS would ensure maximum reach through collaborative education programmes. NDIN would be network of design schools to further reach and access of design education and raise standards of design education and innovation in the country. 262 Notes on Demands for Grants, 2016-2017 No. 52/Department of Higher Education.
- IV. **National Initiative for Technology Transfer:** Under this initiative, special efforts would be made to strengthen international research linkages and involve a larger number of Indian institutions in forging such links with industry through a framework of research parks for collaborative and joint research programmes.
- V. **Unnat Bharat Abhiyan:** The Mission of Unnat Bharat Abhiyan is to enable higher educational institutions to work with the people in rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. It also aims to create a virtuous cycle between society and an inclusive academic system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors in responding to the development needs of rural India.
- VI. **Uchhatar Avishkar Abhiyan:** For promotion of innovation, All the IITs have been encouraged to work with the industry to identify areas where innovation is

required and come up with solutions that could be brought up to the commercialization level. For this purpose, it is proposed to launch a scheme Uchhatar Aavishkar Abhiyan by investing on identified projects proposed by IITs and NITs. Participation of industry in part-funding the project would be mandatory.

- VII. **Implementation of the IMPRINT Research Initiative:** IMPRINT i.e. Impacting Research Innovation and Technology or IMPRINT is meant for adopting engineering and technology as the vehicle to addressing the societal needs and achieving national prosperity.

### B. Ministry of Micro, Small and Medium Enterprises

- I. **National Manufacturing Competitiveness Programme (NMCP):** The programme covers Credit Linked Capital Subsidy Schemes, ISO 9000/14001 reimbursement schemes, ZED Maturity Model (ZMM), schemes of National Manufacturing Competitiveness Programme (six Schemes) viz. Lean Manufacturing Scheme, Promotion of ICT Tools, Quality Management Standards and Quality Technology Tools, Technology Upgradation Quality Certification (TEQUP), Incubation Centre, Intellectual Property Rights (IPR) and Bar Code.

### C. Ministry of Power

- I. **Central Power Research Institute, Bengaluru:** Central Power Research Institute, Bengaluru serves as a National Laboratory for applied research in the field of electrical power and also functions as an independent authority for testing, evaluation and certification of electrical equipment and components.
- II. **Conservation and Energy Efficiency:**  
**Bureau of Energy Efficiency (BEE):** Funds are provided to Bureau of Energy Efficiency (BEE) for implementation of various energy efficiency initiatives in the areas of household lighting, commercial buildings, Standards & Labeling appliances, Demand Side Management in Agriculture or Municipalities, SMEs and large industries including the initiation of the process for development of Energy Consumption norms for industrial sub-sectors, capacity building of SDAs, DisComs etc. These initiatives by the Government will enhance efficiency of energy consumption and reduce the rate of growth of energy consumption.  
**Energy Conservation:** The funds would be utilized for  
 (i) Carrying out awareness creation on Energy Conservation through print, electronic and other media for general public,  
 (ii) Continuation of EC awards and painting competition on Energy Conservation,  
 (iii) Implementation of the National Mission for Enhanced Energy Efficiency (NMEEE)  
 (iv) The up scaling of the efforts to create and sustain market for energy efficiency to unlock investments.
- III. **Green Energy Corridor:** The scheme is proposed for maximization of renewable energy generation and integration with the main grid without compromising on the security and stability of power system.

- IV. **Smart Grid:** The scheme envisages setting up of an institutional mechanism by launching 'National Smart Grid Mission' which would serve the need of an electrical grid with automation, communication and IT systems that can monitor power flows from points of generation to points of consumption and ensure control of power flow or curtailment of loads matching generation on real time basis.
- V. **Funds for Evaluation Studies and Consultancy:** This provision is for conducting evaluation studies of various projects/programmes/ schemes.
- VI. **Intregated Power Development Scheme:**  
 Sub-Transmisison and distribution system improvement in urban areas, metering & IT enablement in distribution sector:..The objective of the scheme is 24x7 power supply for consumers, reduction of AT&C losses and providing access to all households. The scheme has three major components namely improvement of sub-transmisison and distribution system in urban areas, metering & IT enablement in distribution sector under ongoing R-APDRP scheme, which has been subsumed under Integrated Power Development Scheme (IPDS). R-APDRP has two major components: Part-A includes projects for establishment of information technology-based energy accounting and audit system leading to finalization of verifiable base-line AT&C loss levels in the project areas; Part-B envisages distribution network strengthening investments leading to reduction in loss level. The scheme has both Grant and loan components.
- VII. **North Eastern Electric Power Corporation (NEEPCO):** The North Eastern Electric Power Corporation Limited (NEEPCO), a Schedule A Mini Ratna company under Ministry of Power, set up on 2nd April, 1976, carries the objective of developing the power potential in India and abroad with special emphasis on the NE Region of the country through planned development and commissioning of power projects, which in turn would promote the overall development of the country and NE region in particular. The capital outlay is for meeting part of the expenditure on Kameng HEP as per the requirement.

#### **D. Ministry of Science and Technology**

##### **1. Department of Science and Technology**

- I. **Research & Development:** This includes allocation for the Science & Engineering Research Board (SERB), International Cooperation, National Mission on Nano Science and Nano Technology, Super Computing Facility & Capacity Building, Synergy Projects (O/o the Principal Scientific Adviser) and Climate Change Program.
- II. **Innovation, Technology Development and Deployment:** This includes allocation for the Technology Development Programme, Technical Research Centres, S&T Programmes for SocioEconomic Development, Technology Development Board (TDB), Information Technology and Exhibition and Fairs.

##### **2. Department of Scientific and Industrial Research**

- I. **National Laboratories:** This includes provision for the Council of Scientific & Industrial Research schemes:
- National Laboratories, Administration,



- CSIR 800 schemes: CSIR-800 has been launched with the aspiration of improving the lives of 800 million fellow Indians through S&T interventions. The objective is to enhance income through value added agriculture, energy efficiency, improve quality of life through sustainable energy, low cost housing, potable water and affordable health.
- CSIR Initiative for Inclusive, Participative and Collaborative Research and Development,
- Intellectual Property and Technology Management: ICAR endeavours to contribute towards technology-led growth of Indian agriculture through greater partnerships with different stakeholders. The Intellectual Property and Technology Management Unit in ICAR, oversees all matters related to intellectual properties and technology transfer/commercialization.
- New Millennium Indian Technology Leadership Initiative: The New Millennium Indian Technology Leadership Initiative (NMITLI) is the largest public-private-partnership effort within the R&D domain in the country. NMITLI seeks to catalyze innovation centered scientific and technological developments as a vehicle to attain for Indian industry a global leadership position, in selected niche areas in a true 'Team India' spirit, by synergising the best competencies of publicly funded R&D institutions, academia and private industry.
- National Civil Aircraft Development,
- CSIR Scheme for Open Innovation.

### 3. Ministry of Coal

- a) Research and Development: It includes provision for anticipated research and development programmes in the coal industry. The main thrust area is promotion of clean coal technology and to identify coal blocks for coal to liquid project.
- b) Conservation, Safety and Infrastructure Development in Coal Mine: Provision is for the various stowing and conservation measures to stabilize the mines after extraction of coal and development of road and rail transport infrastructure in the coal field areas. Expenditure is met from the cess (excise duty) on coal dispatched at the rate of Rs.10 per tonne on non-coking and coking coal under the Coal Mines (Conservation and Development) Act, 1974. It also includes Provision for carrying out environmental protection measures including land reclamation and subsidence control in the coalfield areas.

### 4. Ministry of Heavy Industries and Public Enterprises

#### 1. Department of Heavy Industry

I. Development of Automobile Industry: Funds have been allocated to the following sub-schemes/Programmes:

- (i) **National Automotive Testing R & D Infrastructure Project (NATRIP)** : The aim of NATRIP is to create world-class automotive testing, validation, R & D and

homologation facilities in line with emerging requirements of the National Automotive Safety and Emission roadmap. These are being created in the three principal hubs of North, West and South India. The Government of India has majority funding of the project and also granted full customs exemption duty to all project imports while the State Governments have offered land at concessional rates. Plan provision has been kept for NATRIP for the installation and commissioning of the equipments in various ongoing projects.

- (ii) **Scheme for Faster Adoption and Manufacturing of (Hybrid &) 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. Plan provision has been kept for the implementation of this Scheme.
- (iii) **Grant to Development Council for Automobile and Allied Industries:** Non-Plan provision has been kept in the form of grant to Development Council for Automobile and Allied Industries for the completion of electric mobility project and for the new & ongoing Research and Development projects related to setting up facilities for testing the vehicles as per changing safety and emission standards at the research institutes i.e. ARAI, Pune, VRDE, Ahmednagar and CIRT, Pune and other R&D institutes in the country.
- (iv) **Fluid Control Research Institute (FCRI):** FCRI was established in 1987 as a UNDP project for undertaking activities connected with flow measuring and control devices and to provide the basic framework for technology development and flow products, for India and South-Asia. Plan provision has been kept for FCRI.

## 5. Ministry of Communications and Information Technology

### 1. Department of Electronics and Information Technology

- I. R&D in IT/Electronics/CCBT: The value addition in manufacturing has been systematically can be enhanced by increasing the Intellectual Property (IP) content and also undertaking translational research and development. Proliferation and absorption of emerging technology by supporting R&D is one of the important objectives of this program apart from creating essential R&D infrastructure and scientific & technical human capital. The outcome of these endeavours is expected to increase the start-up base in the country, enhance the IP portfolio, development of indigenous technology and know-how and its transfer to Indian companies for manufacturing. The focussed R&D being supported by the department are classified as R&D in Electronics (Electronics System Design & Application; Electronic Component & Material Technology including technology for e-waste processing; Nano and Microelectronics including Semiconductor Integrated Circuit Layout Design Registry (SICLDR); Medical Electronics & Health Informatics; and Innovation Promotion & start-ups); R&D in IT (High Performance Computing (HPC) including National Supercomputing Mission, Perception Engineering, Bioinformatics; Free & Open Source Software; Green and Ubiquitous Computing; Digital Preservation) and R&D in CC&BT (Next Generation Communication-5G & beyond, Cognitive &



Software Defined Radio and Networks, Cloud Communications, IoT, Big Data Analytics, Broadband Wireless Technology and Strategic Electronics).

## 6. Union Territories without Legislature

UT's namely Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Lakshadweep are included. Expenditures by Departments of Energy are included for all the UTs.

### Notes on Institutional Measures

#### A. Ministry of Human Resource Development

##### 1. Department of School Education and Literacy

- i. Grants to Autonomous Bodies: This includes Schemes of NCERT, KVS, NVS, CTSA and National Bal Bhawan.
  - **National Council of Educational Research & Training (NCERT):** NCERT was set up in 1961 by the Government of India as an autonomous organization to advise and assist the Ministry of Human Resource Development, Government of India and Departments of Education in States/UTs in formulation and implementation of their policies and major programmes including finalization of National Curriculum Framework (NCF) in the field of Education particularly for qualitative improvement in School Education. From the year 2006-07, the scheme of Quality Improvement in Schools having the components of National Population Education Programme (NPEP), Environment Orientation to Schools, Introduction to Yoga in Schools and International Science Olympiad have been transferred to NCERT for implementation.
- ii. **National Initiative to Foster Social Responsibility:** A provision of ₹1.00 Cr. has been made for National Initiative to Foster Social Responsibility.
- iii. **Indian School of Mines, Dhanbad:** ISM, Dhanbad was established in 1926 for providing trained manpower for the Mining Industry. In 1967, ISM was converted as an autonomous institution with the Deemed-to-be University status. The School caters to the human resource needs of the nation in the areas of Mining, Petroleum, Mining Machinery, Mineral Engineering and Earth Sciences besides training manpower in the related disciplines of Management, Electronics Engineering.
- iv. **Establishment of Multi disciplinary Research Universities Including Central University of Himalayan Studies (CUHS), Creation of Centre of Excellence and National Centre for Excellence in Humanities:** This includes provision for Establishment of Multi disciplinary Research Universities Including Central University of Himalayan Studies (CUHS), Creation of Centre of Excellence and National Centre for Excellence in Humanities.
- v. **Unnat Bharat Abhiyan:** The Mission of Unnat Bharat Abhiyan is to enable higher educational institutions to work with the people in rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. It also aims to create a virtuous cycle between society and an

inclusive academic system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors in responding to the development needs of rural India.

## B. Ministry of Mines

1. **Indian Bureau of Mines** : The provision covers the requirements of the Indian Bureau of Mines for inspection and study of mines and research on (i) the beneficiation of low grade ores and minerals and (ii) special mining problems with a view to promote conservation and scientific development of mineral resources. It also includes amount of Computerised Online Register of Mining Tenement System and provision for Capacity Building of State Government-Development and implementation of Ore Accounting Software by NIC.
2. **Geological Survey of India**: The Provision is for geological mapping and regional mineral assessment of the country including off-shore areas and covers the requirements of remote sensing through satellite imaging and airborne surveys.
3. **Research and Exploration**:
  - 3.01: **Grants to Bharat Gold Mines Ltd.**: The provision is for meeting expenses on maintenance of essential services and others etc.
  - 3.02: **Grants to Mineral Exploration Corporation Ltd.**: Exploration projects assigned by the Central Government to the Corporation on a promotional basis are funded by the Government.
  - 3.03: **Other Programmes/Bodies**: These include provisions for grants-in-aid to various autonomous and scientific bodies for specific research projects. Salary Components to three Autonomous Bodies, Information, Education, Communication Schemes and provision for one time grants to three Autonomous Bodies. It also includes provision for promoting regulated growth in mining sector.

## C. Ministry of Planning

1. **Atal Innovation Mission (AIM) including SETU**: The Atal Innovation Mission (AIM) will be an Innovation promotion platform involving academics, entrepreneurs and researchers and draw upon national and international experiences to foster a culture of innovation, R&D and Scientific research in India. AIM will create mechanisms to incentivize innovators through grants, awards and challenge programmes. Self Employment and Talent Utilisation (SETU) will be a Techno-Financial, Incubation and Facilitation Programme to support all aspects of start-up businesses, and other selfemployment activities, particularly in technology-driven areas.

#### D. Ministry of Power

1. **Central Electricity Authority:** The Central Electricity Authority (CEA) as a statutory organization is responsible for overall powering sector planning, coordination, according concurrence to hydro-electric schemes, promoting and assisting the timely completion of projects, specifying technical standards and safety requirements, Grid Standards and conditions for installation of meters applicable to the Power Sector of the country. CEA advises the Central Government on the National Electricity Policy and formulates short term Prospective Plans for development of the electricity system. It also has the mandate to collect, record and make public, data related to all segments of the electricity sector, carry out investigations and promote research.
2. **Setting up of Joint JERC for UTs and Goa:** The Central Government has set up a Joint Electricity Regulatory Commission (JERC) for Goa and all Union Territories except Delhi. Expenditure of the Joint Commission is borne by the Central Government and the Government of Goa in the ratio of 6:1.

#### E. Ministry of Road Transport and Highways

1. **Research, Training and Other Road Safety Schemes:** The provision is mainly for research and development, training, studies on transport industry, pollution checking equipments, road safety programmes, setting up of facilities on National Highways for extending relief to victims accidents consisting of provision for first aid to the victims and removal of the damaged vehicles for restoration of the traffic, development of National Database Network, creation of National Road Safety Board, strengthening of Public Transport, etc.

#### F. Ministry of Rural Development (Under Department of Land Resources)

1. **Digital India - Land Records Modernization Programme:** As part of Land reforms, financial assistance is being provided to the States/UTs under the Digital India Land Records Modernization Programme (DILRMP), inter alia for computerization of the Records of Rights (RoRs), Digitization of maps, survey/resurvey using modern technology. Computerization of registration, training and capacity building of the concerned officials and functionaries, connectivity amongst the land records and registration offices and establishment of modern record rooms and records management center at tehsil/taluk/circle/block level. The activities to be undertaken under the DILRMP are to converge in the district as the unit of implantation. The ultimate goal on the programme is to usher in the system of conclusive titling to replace the current system of presumptive titles in the country. A National-level Project/Proposal Sanctioning and Monitoring Committee has been constituted under the Programme to sanction the projects/proposal.
2. **Management Support to Rural Development Programmes and Strengthening of District Planning Process** Includes provision to cater to various aspects of Training activities, awareness generation (IEC), strengthening Monitoring Mechanism, Information Technology and International Cooperation.

## G. Ministry of Science and Technology

### (Under Department of Scientific and Industrial Research)

1. **Industrial Research and Development:** This includes provision for the
  - i. PRISM: PRISM (Promoting Innovations in Individuals, Start-ups and MSMEs) scheme aims at to support individual innovators which will enable to achieve the agenda of inclusive development - one of the thrust areas of XIIth five year plan (2012-2017). It would also provide support to institutions or organizations set up as Autonomous Organization under a specific statute or as a society registered under the Societies Registration Act, 1860 or Indian Trusts Act, 1882 leading to development of state-of-art new technology solutions aimed at helping MSME clusters.
  - ii. PACE (Revenue and Capital): **Patent Acquisition and Collaborative Research and Technology Development (PACE): Under the scheme PACE**, it is proposed to support Indian industries to acquire patented technology at an early stage from within the country or overseas on an exclusive as well as non-exclusive basis, add value to the acquired technology (either independently or in collaboration with public funded research institutions in India or abroad) for exploitation in Indian/foreign markets and develop “Made in India” innovative and socially relevant products for public consumption in India and abroad.
  - iii. BIRD: Building Industrial R&D and Common Research Facilities: Under the scheme, R&D in Industry shall be encouraged and supported; and support shall be provided for creation of Common Research Facilities for Small and Micro Industries.
  - iv. A2K plus programs: **Access to Knowledge for Technology Development and Dissemination (A2K+)** : Access to Knowledge for Technology Development and Dissemination (A2K+) is a scheme targeted towards developing mechanisms to disseminate science, technology and innovation related information to industries, research and academic institutions, in-house R&D units of industry, Scientific & Industrial Research Organizations (SIROs), consultants, industry associations, techno-entrepreneurs, government departments and others.

## H. Department of Space

1. **Space Applications Centre (SAC):** SAC is the lead Center for the development of communication, meteorological and remote sensing payloads besides R&D in space applications.
2. **National Remote Sensing Centre (NRSC):** NRSC is responsible for acquisition, processing, distribution and archiving of data from remote sensing satellites and is continuously exploring the practical uses of remote sensing technology for multilevel (global to local applications).

3. **Indian Institute of Remote Sensing (IIRS):** Indian Institute of Remote Sensing (IIRS), located at Dehradun, is a premier training and educational institute set up for developing trained professional in the field of Remote Sensing, Geo-informatics and GPS Technology for Natural Resources, Environmental and Disaster Management.

#### I. Ministry of Agriculture and Farmers Welfare

1. Department of Agriculture, Cooperation and Farmers Welfare
  - i. **National Rainfed Area Authority**  
it focuses on net-working and coordination with the Key Ministries of Agriculture & Farmers Welfare, Rural Development, Water Resources, Environment & Forests and Panchayati Raj, Focus on convergence, coordination, value addition, capacity building and monitoring & Evaluation, Meeting challenges of emerging policies, technologies, marketing, social and economic changes, IT enabled project planning and management, Enabling institutions for effective governance and service delivery, pilot projects for upgrading rainfed system in selected high priority areas.
2. **Department of Animal Husbandry, Dairying and Fisheries Blue Revolution -Integrated Development and Management of Fisheries:** The provision is for different schemes under Blue Revolution, viz Integrated Development and Management of Fisheries, Assistance to Fisheries Institute, Coastal Aquaculture Authority and Package for Replacement of Fishing Vessels Seized by Pakistan.

#### J. Department of Atomic Energy

**Atomic Energy Regulatory Board:** Atomic Energy Regulatory Board (AERB) enforces radiological safety stipulations. It is assisted by Safety Review Committee for Operating Plants (SARCOP), Safety Review Committee (SRC) for applications for radiation and other committees in carrying out its mandate in prescribing radiological, nuclear and industrial safety regulations.

#### K. Ministry of Commerce and industry

##### 1. Department of Industrial Policy and Promotion

- i. **Indian Leather Development Programme:** The main objectives of the Indian Leather Development Programme is to augment raw material base through modernisation and technology upgradation of leather units, address environmental concerns, human resource development, support traditional leather artisans, address infrastructure constraints and establish institutional facilities.

#### L. Ministry of Development of North Eastern Region

- i. **NE Development Finance Corporation:** North Eastern Development Finance Corporation Limited (NEDFi) was incorporated under the Companies Act, 1956 on 9th August, 1995 with its registered office at Guwahati. NEDFi aims to catalyse economic development of the North Eastern Region by identifying, financing and nurturing ecofriendly and commercially viable

industrial, infrastructure and agro-horticultural projects in the region. The provision is for extending long term soft loan to NEDFi.

## J. Ministry of Health and Family Welfare

### 1. Department of Health Research

- i. **Infrastructure Development for Health Research:** The scheme involves (i) Setting up of Nation Wide Network of Laboratories for Managing Epidemics & Natural Calamities (ii) Development of tools/support to prevent outbreaks of epidemics (iii) Development of Infrastructure for Promotion of Health Research by way of establishment of Multi-Disciplinary Research Units in Govt. Medical Colleges and Model Rural Health Research Units in States.

## Notes on Capacity- Building Measures

### A. Ministry of Panchayati Raj

#### 1. Digital India Initiative : e - Panchayat :

- **Mission Mode Project on ePanchayats:** Mission Mode Project on e-Panchayats is one of the projects under the digital India Programme. Under this project, provision has been made to implement the on-going approved activities and to launch new initiatives to further leverage the Information and Communication Technology (ICT) tools and applications which can dramatically reshape the governance and improve the lives of millions of the rural Indians.
- **Incentivization of Panchayats:** Provision has been made to incentivize best performing Panchayats and Gram Sabhas in the States. This is intended to encourage Panchayat representatives to make special efforts, create models for the Panchayats and Gram Sabhas to follow and focus public attention on good performance which create an eco-system for overall good governance at the local level.
- **ATM Services in Panchayat Bhavans:** ATM Services in Panchayat Bhavans is being introduced as a step towards financial inclusion.

**2. Capacity Building: Panchayat Sashaktikaran Abhiyan:** Provision is made for strengthening Panchayats to function as institution of local governance through support for capacity building and systems development including e-governance and revenue generation and for building the institutional capacity for training in view of huge transfer of funds to Panchayats under the 14th Finance Commission Award.

### B. Ministry of Rural Development

(Under Department of Rural Development)

**The National Institute of Rural Development (NIRD)** is an apex institute for training and research in rural development in India. Besides, organizing courses on developmental issues, capacity building of rural development and Panchayati Raj functionaries is key concern of NIRD.



**C. Ministry of Science and Technology****1. Under Department of Science and Technology**

- i. **S & T Institutional and Human Capacity Building:** This includes allocations for the Autonomous Institutions and Professional Bodies, Survey of India, National Atlas and Thematic Mapping Organization, Research and Development Support : Multi-Disciplinary Research in Science and Technology, State S and T Programme, Disha Programme for Women in Science, Policy Research Cell, INSPIRE and Swaran Jayanti Scholarship for Outstanding Scientists

**2. Under Department of Scientific and Industrial Research**

- i. **Autonomous Bodies, Public Sector Enterprises and International Bodies:** This includes provision for the Consultancy Development Centre (CDC), the Revenue and Capital allocations for the Central Electronics Limited (CEL), the National Research Development Corporation (NRDC) and the Revenue and Capital allocations for the Asian and Pacific Centre for Transfer of Technology (APCTT)
- ii. **Capacity Building and Human Resource Development:** This includes provision for the CSIR schemes: Research Schemes, Scholarships and Fellowships and for the Scientists Pool

**D. Department of Space**

1. **Assistance to Autonomous Bodies:** This includes the Budgetary support extended by ISRO to its five Autonomous Bodies by way of Grant-in-Aid as is detailed below:

a) **Indian Institute of Space Science & Technology:** Indian Institute of Space Science & Technology is an autonomous body under DOS with the primary objective of creating world class Institution in the area of advanced Space Science & Technology education and generating high quality human resources requirement of DOS/ISRO. The Institute has undergraduate, post-graduate and doctoral programme in the area of space science, technology and applications.

b) **Semi-conductor Laboratory:** SCL is engaged in the Design, Development and Manufacture of Very Large Scale Integrated (VLSIs) devices and Board Level Products to meet the stringent quality requirement of strategic sectors. SCL is to undertake radiation hardened devices and about more than 60 types of ASICs have been identified for development by SCL for Space Programme.

c) **North Eastern-Space Applications Centres (NE-SAC):** NE-SAC set up as an autonomous society jointly with North Eastern Council, is supporting the North Eastern region by providing information on natural resources utilization and monitoring, infrastructure developmental planning and interactive training using space technology inputs of remote sensing and satellite communication.

d) **Physical Research Laboratory (PRL):** PRL, an autonomous institution funded by the Department of Space through grant-in-aid, is one of the premier research institutions in the country carrying out basic research in several areas

of experimental & theoretical physics and earth sciences. PRL is also responsible for the administration of Udaipur Solar observatory.

e) **National Atmospheric Research Laboratory (NARL):** NARL, a registered Society, is responsible for carrying out advanced research in atmospheric and space sciences and related disciplines.

#### **E. Ministry of Development of North Eastern Region**

1. **Capacity Building & Publicity:** The Capacity Building of the officials and youth of the North Eastern States is a pre-requisite for project formulation, implementation and good governance which is being attempted to be met through long lasting collaboration with the Centres of Excellence under this Scheme. The scheme also includes the activities of NER and its mainstreaming with other parts of the country through Trade Expos, Seminars etc., in collaboration with trade bodies and other agencies to harness the immense potential of the Region.
2. **NE Region Livelihood Project:** North Eastern Region Livelihood Project (NERLP) is a major initiative for addressing the needs of employment, income and natural resource sustainability of the rural population of the NE Region. The Project is proposed to be funded through the World Bank. The provision is for facilitating the implementation of the Project.



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