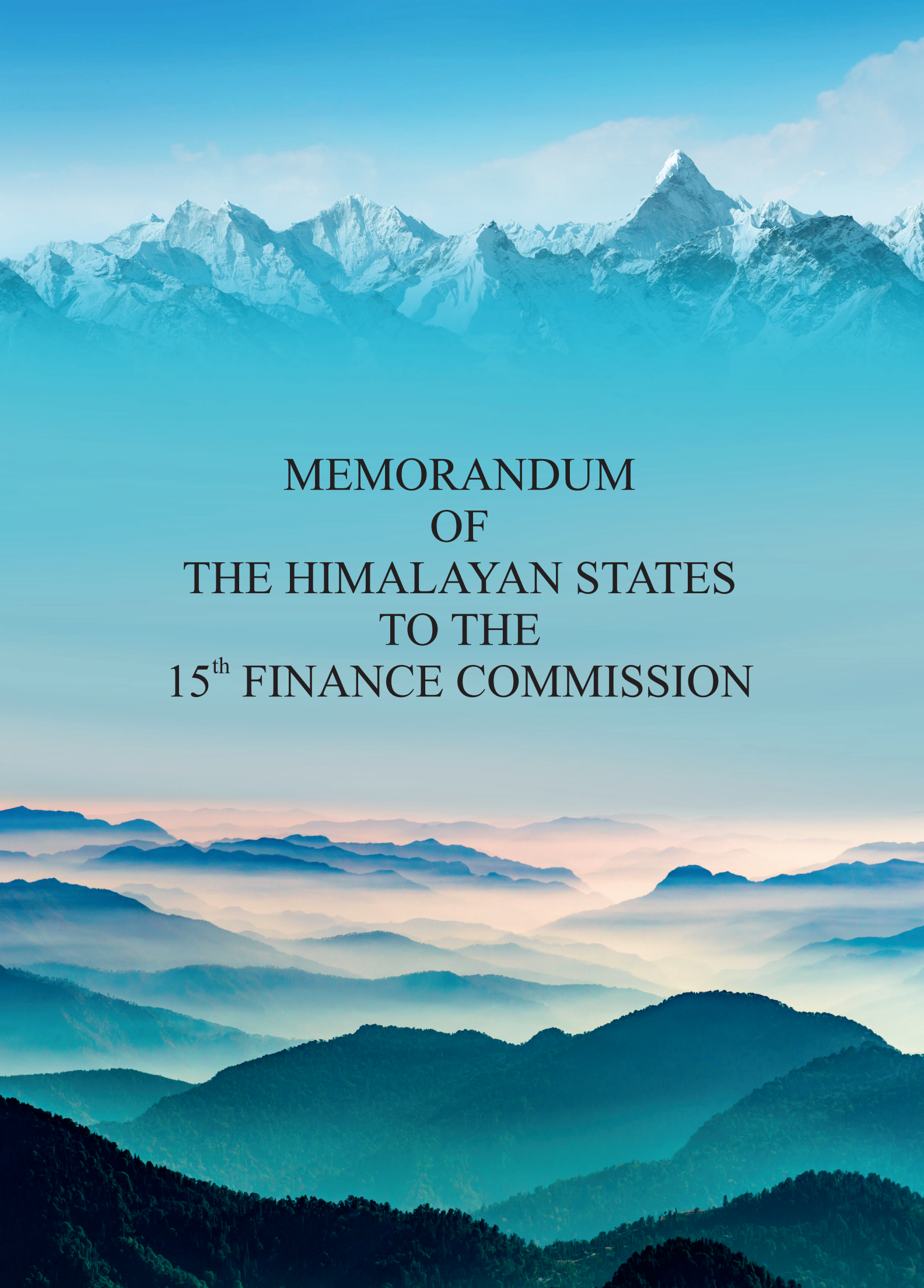

MEMORANDUM OF THE HIMALAYAN STATES TO THE 15th FINANCE COMMISSION

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ABBREVIATION

15th FC	Fifteenth Finance Commission
CD Ratio	Credit Deposit Ratio
CPWD	Central Public Works Department
Cr	Crores
EIA	Environment Impact Assessment
FC	Finance Commission
FY	Financial Year
GDP	Gross Domestic Product
GoI	Government of India
GSDP	Gross State Domestic Product
GST	Goods & Service Tax
ICIMOD	International Centre for Integrated Mountain Development
IHR	Indian Himalayan Region
INDC	Intended Nationally Determined Contribution
INR	Indian Rupees
J&K	Jammu & Kashmir
Mw	Moment Magnitude Scale
NDRF	National Disaster Response Fund
NCA	Normal Central Assistance
NDC	National Development Council
NPV	Net Present Value
Rs.	Indian Rupees
SAM	Social Accounting Matrix
SCA	Special Central Assistance
SDGs	Sustainable Development Goals
SDRF	State Disaster Response Fund
SEEA	System of Environmental and Economic Accounting
SFDRR	Sendai Framework for Disaster Risk Reduction
SPA	Special Plan Assistance
SCS	Special Category States
UNCED	United Nation Conference on Environment & Development

EXECUTIVE SUMMARY

Background

The Indian Himalayan Region (IHR), with geographical coverage of over 5.3 lakh kilometer square, extends over 2,500 kilometres in length between the Indus and the Brahmaputra river systems. The IHR physiographically, starting from the foothills in the south (Siwaliks), extends up to Tibetan plateau in the north (Trans-Himalaya). Three major geographical entities:- the Himadri (Greater Himalaya), the Himanchal (Lesser Himalaya) and the Siwaliks (Outer Himalaya) extending almost uninterrupted throughout its length, are separated by major geological fault lines. The region caters to the water needs of a large part of the Indian subcontinent and is considered as “water tower” of the nation.

The Himalayan states include 10 hill states- Arunachal Pradesh, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttarakhand and two partial hill states, namely Assam and West Bengal. The geology of Himalayan Region has a direct impact in its vicinity on the creation and maintenance of infrastructure, provisioning of essential citizen centric services, cost disabilities associated with the terrain and results in low revenue generation due to the scattered nature of habitation and low level of economic development.

Role of Ecosystem Services

All Himalayan States provide invaluable eco-system services to the nation. The Himalayas are the water tower of the country and provide innumerable ecosystem services like climate regulation, carbon sequestration etc. But due to anthropogenic activities and climate change, the sensitive ecosystem of the Himalayas is under threat. Thus to protect the sensitive ecosystem and to maintain the flow of ecosystem services, it is requested that the 15th FC make suitable provision in the devolution criterion by accounting for the eco-system services. This will also be in the spirit of maintaining the environment for the future generations & sustainable development of the country and will also compensate Himalayan States for preserving environment which is in line with the INDC’s of the country as per Paris Agreement.

Natural Calamities

All Himalayan States, due to their geological terrain, are very sensitive to natural calamities like earthquakes, flash floods, floods, forest fire, landslides etc. These calamities devastate the lives and livelihoods of the people and also damage the infrastructure thereby adversely affecting the development process. Similarly, there are many highly vulnerable villages which need to be immediately rehabilitated to avoid future disasters, and for this support should be provided by Government of India or these occurrences should be included in the admissible norms under SDRF & NDRF. The climate change world over has intensified the severity of the disasters in the Himalayas.

Development Disability

Development Disabilities in all Himalayan States are mainly due to following reasons:

1. High cost of material transportation, maintenance and service delivery.
2. Low density of population and innumerable number of habitations necessitating increased cost of service provision.
3. Higher per capita forest cover and villages being interspersed with forest cause increased man-animal conflict leading to loss of life & livelihood (damage to crop & horticultural products). The situation has led to people abandoning agriculture as a source of livelihood and migrating to plain areas working in low paying jobs.
4. Limitations of agricultural mechanization puts extra pressure on farmers in terms of drudgery and results in low labour productivity. In addition limitations of physical (road, rail and air) & digital connectivity leads to poor market access for farmers.
5. In addition to high cost of infrastructure development, frequent repair & maintenance has also to be carried out due to heavy rains, snow fall, frequent landslides and flash floods leading to much higher maintenance cost as compared to other states.
6. Since, major area of the Himalayan states is notified as Forest, almost all development activities need forest land diversion. This requires civil land twice the amount of forest land diverted and payment of NPV of the forest land. This is like double jeopardy for mountain people. On one hand, they protect natural ecosystem which provides ecosystem services to the whole nation and on the other hand they get penalized for their own development. Requirement of NPV

causes **cost disability** for state and requirement of double civil land causes **Use Disability** as it deprives the state from its precious scarce civil land which could be used for infrastructure development or for upliftment of people's livelihood.

7. **Three dimensionality of** the area whereby circuitous roads and other critical infrastructure have to be built which leads to extra capital cost as well as maintenance costs.
8. Apart from the increased distance, the basic cost of construction in hills is much higher than the plain region.
9. Cost of site development and slope stabilization.

Recognising these aspects and the uniqueness of the Himalayas along with the challenges for sustainable development, NITI Aayog had set five (5) working groups, to prepare a road map for actions in five(5) thematic areas.

Thus, due to constraints in harnessing its resource base resulting from policy restrictions, low economic potentials, remote mountainous terrain, high cost of providing services, international border, low level of development & consumption, and other cost disabilities arising from facts that are exogenous to state control**, the various Finance Commissions and Government of India have always given a special category status to the Himalayan states. Hence we all humbly request the 15th FC to give a preferential status to the Indian Himalayan states for their unique conditions and contributions to the eco-system.**

The Fiscal resources of the Himalayan States are very limited but revenue expenditure incurred on providing basic amenities and services to its citizens is much higher mainly due to scattered population, difficult terrain and high transportation cost and so we appeal to 15th FC to provide these States with Revenue Deficit Grant to bridge the gap between revenue and expenditure.

As the Indian Himalayan states have very weak resource base and low fiscal capacity, **we suggest that a total of 30% of the total horizontal devolution should be earmarked for the Indian Himalayan Region States.**

Given the large volume of ecological services provided by Himalayan States as these are forest rich states, we request for an increased weightage for the eco-services provided by the individual states.

The Himalayas are the highest mountain chain in the world. They provide invaluable services to the country; hence we need to protect these sacred mountain chains for posterity and to preserve inter-generational equity.

CHAPTER 1: OVERVIEW

1.1 Mountains are nature's repository of the best and the beautiful. Himalayas is one such nature's gift to mankind. It is indelibly inscribed in the material and metaphysical realms of humanity. It's the symbol of nature's beauty in true sense. Himalayas being the world's highest mountain chain is a collage of nature's charm. It portrays different facets of nature like the snowcapped mountain peaks, valleys, glaciers, rivers, and varied and rich vegetation. Its slopes have riches to sustain humanity for several millennia; and its peaks are global store houses of life-saving water. For mankind, Himalaya has always been a mystery and so the people have tried to explore it again and again. The ancient pilgrims who have travelled the vast glaciated heights of these mountains, since time immemorial coined a Sanskrit word for the mountains as "Himalaya" meaning "Abode of Snow". For thousands of years, the Himalayas have held a profound significance for the people of South Asia, as their literature, mythologies and culture reflect the mysterious nature of these mountains. In contemporary times, the Himalayas have offered the greatest attraction and the greatest challenge to people, irrespective of their pursuit, throughout the world.

"Great things are done when men and mountains meet; This is not done by jostling in the street." *(William Blake)*

1.2 The most characteristic features of the Himalayas are their soaring heights, steep-sided jagged peaks, valleys and alpine glaciers often of stupendous size, topography deeply cut by erosion, seemingly unfathomable river gorges, complex geologic structure, and series of elevational belts (or zones) that display different ecological associations of flora, fauna, and climate. Viewed from the south, the Himalayas appear as a gigantic crescent with the main axis rising above the snowline, where snowfields, alpine glaciers, and avalanches all feed lower-valley glaciers that in turn constitute the sources of most of the Himalayan rivers. The greater part of the Himalayas, however, lies below the snow line. The mountain-building process that created the range is still active.

1.3 The Indian Himalayan Region (IHR) spreads across 10 states (administrative regions) namely, Arunachal Pradesh, Himachal Pradesh, Jammu and Kashmir,

Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttarakhand and two partial hill states, namely Assam and West Bengal. The Himalayan ecosystem is fragile and diverse and is also home to over 50 million people. The Himalayan ecosystem is vital to the ecological security of the Indian landmass. It provides forest cover, picturesque landscape, forms the largest resources of snow, ice & glaciers, feeds perennial rivers that are the source of drinking water, irrigation, hydropower and providing a rich base for high value agriculture to the significant part of the country.

1.4 The benefits to the Indian Subcontinent from the Himalayas are not limited to the rivers emanating from the Himalayas. In fact, the entire ecology of the subcontinent has evolved around the existence of the Himalayas. The Himalayas, as a great climatic divide affecting large systems of air and water circulation, help determine meteorological conditions in the Indian subcontinent to the south and in the Central Asian highlands to the north. By virtue of its location and stupendous height, the Great Himalaya obstructs the passage of cold continental air from the north into India in winter and also forces the southwesterly monsoon (rain-bearing) winds to give up most of their moisture before crossing the range northward. The result is heavy precipitation (both rain and snow) on the Indian side but arid conditions in Tibet. Thus, the Himalayas have a great impact on the rainfall pattern in the entire country. The combined effect of rainfall, latitude and altitude largely influences the forests belts, wetlands and the eco system in a far reaching manner.

1.5 But, the Himalayan ecosystem is also comparatively far more vulnerable and susceptible to impacts of climate change and natural disasters than the rest of the country. Though the immediate impact would be in the surrounding region, the effects of glacial melt and long-term lean season flows would have adverse impacts on the climate across the country and also on the economy in terms of water availability, growth and sustenance. Hence, it is imperative that the states in the Himalayan Region come together to preserve the ecosystem for human welfare and for the benefit of the nation.

1.6 Though everyone acknowledges the ecoservices provided and the significance of the Himalayan Region in the economy and well-being of the country, this has never been translated in economic terms and incorporated in any policy formulation hitherto at the national level for lack of appropriate measures to account for these

services. A large number of environmental services that a society enjoys, come from environmental functions like clean air (e.g., through carbon sequestration), ecological balance (e.g., balancing the dependency between bacterial, animal, plant and aquatic life systems), nutritional recycling (e.g., natural assimilation of waste, nitrogen cycle), security (e.g., assuring non-diminishing future consumption rates), aesthetic beauty (e.g., flora and fauna of forests, water bodies, snow-bound mountains), etc. These are in addition to the known economic functions such as water supply, energy supply, timber and non-timber products from forests and so on. It's accounting however, both as a stock and flows (i.e., use or non-use benefits from it) are not yet within the framework of income accounting. Now, the world of income and resource accounting has graduated quite a lot (Stone, 1961; Hicks; 1941, 1946). The 'Tableau de economie' by Quesney in the seventeenth century, the Input-Output Transactions Table by Leontief (1966), Social Accounting Matrix (SAM) by Taylor (1983) and more recently the System of Environmental and Economic Accounting (SEEA) as developed by the United Nations (1993) are some landmarks in the course of this development. But in the process of developing such income accounting methods, accounting for natural resources was not given a priority. It was perhaps by the United Nations Conference on Environment and Development (UNCED) in 1992 which, centuries after Kautilya, reopened the issue of natural resource accounting as a basic indicator both for better management of natural resources and understanding of welfare at the global level. In the Indian context, the issue of accounting is much more complicated, due to absence of a market for many of those resources.

1.7 For this, the states in The Indian Himalayan Region have to come together, to bring to the fore the criticality of accounting for the real services provided by these states, and to emphasize and ensure that it becomes a part of the accounting system, lest we collectively ignore, over a period of time, the life-giving sources at our own peril. This is important not only for the survival of IHR States but also for the well-being of the entire nation. Currently, any developmental discourse on mountains over-emphasises the debility of the region, and the resources required to overcome them. But, the issue of paramount importance is to shift the focus to preserving the eco-services provided by these mountains and this can be achieved only when we account for these services in every aspect of the policy formulation. We have already started facing the adverse effects of climate change and environmental impacts in the forms of acute water stress, droughts, heatwaves etc. Even in pure

economic terms, the additional investments done by individuals and the government to prevent hazards like degrading air/water quality, resultant medical expenses, civil structures to counter disasters, flood prevention, mitigation, rehabilitation and reconstruction would far outweigh the investments required to preserve the eco-system, and avoid ecological imbalance/catastrophe.

1.8 Equally important is the fact that, in our efforts to preserve the environment, we ignore the economic distress imposed by these eco-preserving policies to the people living in these very areas, who were predominantly responsible for the preservation of the existing resources. In addition to this, the environmental regulations further constrict those very regions from development which is the bane of preserving natural resources. This differential treatment of natural resource rich regions is the main cause of stagnation in development in these areas. Any development is anthropocentric, including the intention behind the preservation of eco-systems. Hence, we cannot compromise the livelihood and development of people living in the Himalayas for the benefit of the larger good without duly compensating them. It is against logic and natural justice, to penalise a population who have traditionally preserved their natural environment with forethought and discipline. By not recompensating them for their contribution to these eco-services and on the contrary imposing further policy mandated restrictions on them would only aggravate the current situation and accelerate the pace of degradation.

1.9 Besides, the Himalayan Region suffers from repetitive multi-hazard natural disasters, exacerbated by human induced developmental activities in the large populated areas. The meager resource of IHR is spent in bracing itself against the immediate impacts of the cloud bursts, glacial lake bursts, landslides and floods induced partly due to the growth path followed all around the world. But, the national policy on disaster is more focused on rescue and relief and keeps out of its mandate the incessant requirements for mitigation, reconstruction, rehabilitation etc. Seeing only the most proximal cause of disaster and not appreciating the problem in its entirety, and not comprehending the interconnectivity, will make us pay a very heavy price later on.

1.10 Due to the geographical terrain the IHR States face developmental disability and cost disability, the schemes formulated by the Central Government generally do not take into consideration the uniqueness of Himalayas and thus puts it in a

disadvantageous position to utilize all the schemes. It takes 2.5 times the cost to provide the same services in education, health and infrastructure in these areas, when compared to other places.

1.11 Recognising these aspects and the uniqueness of the Himalayas along with the challenges for sustainable development, NITI Aayog had set 5 working groups, to prepare a road map for actions in 5 thematic areas. The themes include: Inventory and Revival of Springs in Himalayas for water security, Sustainable Tourism in Indian Himalayan Region, Transformative Approach to Shifting cultivation, Strengthening Skill and Entrepreneurship Landscape in Himalayas and Data/Information for informed decision making. The report lists challenges in all 5 thematic areas. We need to take this forward, and incorporate the aforesaid concerns and address them in all policy decisions taken by the Central Government, as the Himalayas belong to the entire country.

CHAPTER 2 : ECO SYSTEM SERVICES

"We won't have a society if we destroy the environment."

- *Margaret Mead*

2.1 The Indian Himalayan Mountains with 14 of the world's highest peaks and stretching 1,500 miles, across 11 states of India, create a natural barrier between the lowlands of the Indian subcontinent and the Tibetan Plateau. The mountainous landscape of Himalayas has four out of the 36 global biodiversity hotspots. According to the report published by ICIMOD in 2019, the mountain ecosystems of the Hindu Kush Himalaya (HKH) is a cradle for 35,000+ species of plants and 200+ species of animals. Beginning from the foot-hills in the south (Siwaliks), the Himalayan region extends to Tibetan plateau in the north (trans-Himalaya) covering 95 districts of the country.

2.2 The IHR states contribute about 16.2% of India's total geographical area. Most of the area is covered by snow-clad peaks, glaciers of higher Himalaya and dense forest cover of mid-Himalaya. No doubt they are called as the '**Water Towers'** of the country. Recognizing the ecological importance of the Himalayan landscape, India has already declared 135 Protected Areas in the Himalaya region, covering approximately 62000 sq. km of the forest area across 11 Himalayan states, which accounts for 9% of the total Protected Area in the country.

2.3 The Himalaya contain over half the permanent snow and ice fields outside the polar regions. Consequently, the '*Water Tower of the Earth*', is having more than 33,000 square km of glaciated basins that store approximately 12,000 cu. Km of fresh water (Hua et al, 2009) sustaining around 1.5 billion people of India, China, Nepal, Pakistan, Bhutan and Myanmar[1]. Around 16% of the total area of Hindu-Kush Himalaya is having fresh water wetlands, and more than 9000 glaciers could be found in the Indian Himalayan region along with numerous springs, streams and seepages serving as primary sources of fresh water that supports some of the unique and fragile bio-diversity hotspots of the world.

2.4 Glaciers along with glaciated catchments have great regional importance as they sustain stream flow in major Himalayan rivers during the dry summer season. Indus, Ganges and Brahmputra are the three major rivers in Himalayan region which directly

[1] Source: (Nandargi and Dhar, 2011).

impact lives of a large population living in northern and northeast India, and even beyond the national boundaries. Indus basin has around 7997 glaciers with total glacier cover area of 33,679 km^2 and total ice volume of 363.10 km^3, while the Ganges basin has 968 glaciers with total glacier cover area of 2,857 km^2 and total ice volume of 209.37 km^3 [2]

2.5 It is not easy to calculate the worth of an ecosystem. The National Accounting system does not have any standards to capture the value provided by ecosystems. From agriculture to health & well-being, ecosystems provide crucial resources and services that underpin the economic life of people worldwide. The ecosystems in these mountains have economic benefits at the local, national, regional and international level. Unfortunately, we have not incorporated the value of these services in policy making for lack of measuring tools, and thereby, our policies lack the comprehensive understanding and solutions for part of the pertaining issues. The current national policies regard ecosystem conservation as an aspirational statement, and make financial allowances as a gesture of goodwill rather than as a matter of rightful compensation for the tangible & intangible eco services being rendered. If we do not start incorporating the value of these services in our National Accounting Procedure, we will continue to under value them and this will lead to irretrievable damage to these invaluable ecosystems. We thus need to find ways to evaluate the services and incorporate them in national policy and planning processes. The valuation of the ecosystem services provided by the Himalayan states, would give an idea of the true scale of contribution of this region to the entire country.

2.6 Numerous studies have been carried out to ascertain the actual contribution of the mountainous region of India and their linkages with the Sustainable Development Goals. In order to quantify the extent of ecosystem services (in economic terms) provided by Himalayan ecosystem, the Indian Institute of Forest Management (IIFM), Bhopal has done studies in Himachal Pradesh and Uttarakhand and has quantified the ecosystem services from forest areas of both the states. The recent studies indicate that the **flow value of forest ecosystem services** from mountain states like Himachal Pradesh (2016) and Uttarakhand (2019) ranges from 53,000 cr to 95,000 cr (conservative estimates) (IIFM 2016 & 2018). Based on another study by ISFR-2017, the estimated Net Present Value (NPV) of Mizoram forest is Rs. 1.40 lakh crores. These studies have also constructed '**Green Accounts'** for forests and developed

[2] Source: Raina and Srivastava(2008).

framework for such work for other natural resources in line with the System of Environmental-Economic Accounting (SEEA) framework of United Nations Statistical Division (UNSD) which can be applied to all other **Himalayan states of the country and thus develop joint values and green accounts for strengthening their case of 'Green Bonus' from the central government and the 15th Finance Commission.**

2.7 The United Nations 2004 Millennium Ecosystem Assessment (MEA) and The Economics of Ecosystems and Biodiversity (TEEB) has grouped ecosystem services into four broad categories:

- Provisioning services which include food, timber, water, aromatic and medicinal herbs etc.
- Regulating services which lead to climate control, carbon sequestration, air quality, moderation of extreme events etc.
- Habitat and supporting services like maintenance of biodiversity and gene diversity etc.
- Cultural services like recreation, tourism etc.

2.8 IHR represents 26% of India's forest types, 47% of angiosperms, 81% of gymnosperms, 59% of pteridophytes, 61% of bryophytes, 59% of lichens and 63% of fungi. Likewise, in faunal groups, IHR represents about 69% of known mammals in India, 79% of birds, 38% of reptiles, 34% of amphibians and 10% of fishes. Uniqueness (endemism) is yet another important attribute of the region. Amongst floristic elements, nearly 32% of species being endemic, IHR represents 71 endemic genera and 5 endemic families.

2.9 In addition to rich biodiversity profile, the mountainous landscape of Himalayas also provides life sustaining ecosystem services like water provisioning & water regulation, carbon capture & sequestration, oxygen production, nutrient cycling, timber, gene pool protection, soil conservation etc. These life sustaining services are not valued in the current methodology and need to be factored in any kind of financial devolution for these states.

2.10 Maintaining such large natural resource rich landscapes benefits not only these Himalayan states but also results in significant quantum of positive externalities (benefits which accrue to the populations outside these landscapes), such as, benefits

related to agriculture/livestock and general livelihood itself to the downstream states. Further, on account of directives through the National Forest Policy, 1988 to maintain two third of these states area under forest cover and ban on green felling for areas above 1,000 meters altitude have created colossal fiscal disabilities amongst Himalayan states despite their resource richness. These benefits are provided by the Himalayan states through costs borne in terms of opportunity cost for not being able to use their natural resource like forest land for developmental purposes leading to huge loss of revenue. Thus, public investment by Himalayan states in maintaining large areas under forests benefits several downstream states and the Himalayan states do not receive any compensation in exchange from the recipient states. Though endowed with rich natural resources, not being able to harness it for development makes a strong case for **"Green Bonus"** to the Himalayan states. This is very important for addressing the developmental needs of the states.

2.11 The contribution of the conservation efforts of these states in economic terms should be highlighted & awareness in policy level should be created. Efforts should be made towards developing green accounts and creating adequate incentives for such efforts. Despite the fact that the Himalayas play a vital role, being a biodiversity hotspot, and providing a number of life sustaining ecosystem services, the registered contribution of these landscape in the country's and states' GDP is a meager 1-3 percent. This underrepresentation of the efforts and success in conserving natural resources in the state's and country's economy is mainly because of the limitation of the current accounting system. In the national and global interest, and in the interests of the generations to come, it is important to account for these vital attributes, and see them reflected in the states'/country's GDP.

2.12 Furthermore, as these aspects were long neglected, we find the ecosystems of Himalayas endangered under the anthropogenically accelerated climate change. The water resources of the highest Water Tower of the earth, viz., the Himalayas are under deep stress and consequently, the hydrological cycle in the region has been perturbed alarmingly, leading to the process of desertification. The sharp hydrological indicators of the beginning of desertification in Himalaya are:

a. Fast diminishing regulatory effect of glaciers.

b. Transformation of glacial fed river to non-glacial rivers.

c. Very high overland flows on hill slopes.

d. Alarmingly accelerated floods.

e. Drastic reduction in groundwater recharge.

f. Disappearance and fast drying of natural springs.

g. Disappearance of perennial streams from their headwater regions.

h. Fast dwindling in base flow of rivers.

i. Transformation of perennial rivers into non-perennial rivers.

j. Dwindling capacity of lakes.

2.13 There is an imperative to maintain and improve the carbon stock in the country in line with India's Nationally Determined Contributions as committed by India at the Paris Agreement (COP21). These commitments include an increase in carbon sink of 2.5-3 billion tons of CO_2 equivalent through additional forest and tree cover by 2030. As per the State of Forest Report 2017,10 mountain states of the Indian Himalayan region comprise 33% of the total carbon stock in the country. (For example, Arunachal Pradesh has 994.5 Million tons of carbon stock)Thus, if properly incentivized, Himalayan states can help the country meet its INDC as per Paris Agreement.

2.14 Taking cognizance of these aspects, NITI Aayog has constituted the **'Himalayan State Regional Council'** in November 2018 to ensure sustainable development of the Indian Himalayan Region. The council shall review and implement identified action points based on the Reports of five Working Groups, which were established along thematic areas to prepare a roadmap for action.

2.13 Hence, it is important to recognize that the Himalayan states carry special burden on account of (a) historically weak infrastructure and economy, (b) the constraints of having to care and protect for a large share of the nation's forests, mountains, water sources, biodiversity and general environmental heritage, and (c) the vulnerability & disability they face in terms of life, livelihood and essential services like health, education etc. These states need to be compensated on account of the special burdens, that they carry for the rest of the nation and to preserve their ecosystems for posterity.

2.14 The Hon'ble Finance Commission has been given a Constitutional mandate for development of the nation that is not just inclusive but also sustainable. Apart from interest of the present generation, it has to think about posterity and inter-generational equity. Under equalization principle, it must take into account the

strengths and weaknesses of states, amount of **ecosystem services** the state provides to the nation for present and posterity, and the opportunity cost suffered by the states, the cost and use disability of states as a result of maintaining the ecosystem services, level of development of the states, and vulnerability of the people in the states, in addition to contribution towards taxes and performances. The 14th Finance Commission in its devolution principles had given a 7.5% weightage to the geographical area. Given the challenges of maintaining the fragile ecosystem and the ecosystem services being provided by these Himalayan states , we recommend that the percentage of devolution assigned to forest should be increased ..

CHAPTER 3 : NATURAL CALAMITIES

3.1 The Himalayas have evolved due to continuous northward movement and subduction of the Indian plate beneath Eurasian plate and collision of the plates around 55 million years ago. The Indian plate is under thrusting Tibetan plate at a convergence rate of 45-51 mm/year of which 18–20 mm/year is accommodated by Himalayas while the rest is taken care of further north by Tibet and Asia. This ongoing convergence is responsible for neotectonics and seismic activities in Himalaya, Tibet and the adjoining areas.

3.2 Mountain areas are characterized by high geo-diversity, steep gradients and high variability in hydro-climate systems, topography and ecosystems. Accordingly, societies in mountain areas are prone to geophysical processes (earthquakes and volcanic eruptions), mass movements and glacial and snow hazards as well as floods and other hydro-meteorological hazards, including drought and forest fires. The main drivers of natural hazards are the high relief and the hydro climate, exacerbated by climate variability and change and human activity .

3.3 The Himalayan region has been devastated by six major earthquakes in the previous 120 years; 1897 Shillong Mw~8.0, 1905 Kangara Mw~7.8, 1934 Bihar–Nepal Mw~8.2, 1950 Assam now Arunachal Mw~8.6, 2005 Kashmir Mw~7.6 and 2015 Gorkha Mw~7.8. Many stretches of the Himalyan region, including Uttarakhand, have however not witnessed a major earthquake in the previous 200 years and this further enhances seismic risk over the region. All these disasters lead to incalculable losses in social capital due to trauma and social disruption. All these losses constitute a chronic drain on resources for investment in social protection, public health & education all of which are indispensable for growth.

3.4 Moreover, now the Himalayan areas are increasingly becoming more seismically vulnerable due to (i) rapid growth of population and infrastructure, (ii) breakdown of traditional construction practices, (iii) change in use of building material, (iv) lack of attention on the training of masons and (v) non-compliance of building bye laws. This has resulted in rapid proliferation of non-seismic safety compliant infrastructure.

3.5 Stabilization of SW monsoon over the subcontinent and high relative relief of the Himalayan region are both owed to the evolutionary history of the Himalaya and these result in landslide, rockfall, flood, flash flood and avalanche events in the region that take heavy toll of human lives and infrastructure almost every year.

Some of the Himalayan states are prone to frequent cyclones and high windspeed which has a huge impact on life and infrastructure alongwith livelihood.

3.6 Driven by climate change, the incidences of extreme weather events have become more frequent and the Himalayan region has witnessed massive losses due to these. In the previous years the Himalayan states have witnessed Satluj, Ladakh, Uttarakhand and Srinagar floods, and many a devastating landslides.

3.7 Increasing losses due to hydro-meteorological hazards in the Himalayan region are attributed to (i) proliferation of road network with inadequate slope stabilization and water disposal measures, (ii) use of explosives for construction works, (iii) lack of land use policy, (iv) lack of debris disposal policy, (v) changes in hydrological regime due to construction of dams, (vi) changes in habitation pattern.

3.8 Disaster risks are a function of interplay between three key elements: hazard, exposure, and vulnerability. The risk of natural hazards is increasing in the Himalayan region and it is a cause of concern for all of us. We have, therefore to review the existing risk reduction instruments, protocols and measures and make a joint strategy for reducing the risk of hazards to which we are equally vulnerable. This in turn would ensure that gains of years of hard work are not undone by couple of seconds of ground movement or some odd hours of rainfall.

3.9 This strategy has to be necessarily aligned with Sendai Framework for Disaster Risk Reduction (SFDRR) and Sustainable Development Goals (SDGs). In accordance with SFDRR we have to invest on (i) improving understanding of disaster risk amongst all stakeholders, (ii) strengthening disaster risk governance to manage disaster risk, (iii) building resilience and (iv) enhancing disaster preparedness for effective response and ensuring “Build Back Better” in recovery, rehabilitation and reconstruction so as to substantially reduce (i) disaster mortality, (ii) number of disaster affected people (iii) disaster induced economic losses and (iv) disaster induced damage to critical infrastructure and disruption of basic services by improving their resilience and at the same time substantially increase (i) preparation of local disaster risk reduction strategies, (ii) cooperation amongst Himalayan states and (iii) availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people.

3.10 The above vision will help in achieving the following SDG targets:-

1. Reduce human deaths, economic loss, and the number of people affected due to disasters and extreme climate events, especially for women and children [SDGs 5, 13].

2. Make human settlements and habitats safe, inclusive, resilient, and sustainable through capacity building, legislation, education, livelihoods, better zoning and building regulations, and a multi-hazard risk reduction approach [SDGs 9, 11, 13].
3. Ensure protection from exposure to extreme events such as floods and droughts [SDGs 1, 13].
4. Provide access to disaster risk reduction and mitigation measures, including finance and technology, with the knowledge and capacity building needed to use them [SDG 13].

3.11 Taking into consideration high disaster and climate change related vulnerability of the Himalayan states, the following policy can be adopted-

1. Institutions and governments in the Himalayan region urgently need to adopt a standardized, multi-hazard risk assessment approach.
2. The states of the Himalayan region need to cooperate more extensively and effectively by sharing data, information, and scientific and indigenous knowledge, and by fostering inter-state boundary disaster risk reduction practices.
3. All stakeholders including governments, individuals, households, and communities need to take urgent action for enhancing resilience through the four pillars—information, infrastructure, institutions, and insurance.
4. The States of the Himalayan region urgently need to undertake Community Based Disaster Preparedness, which is a process that mobilizes a group of people in a systematic way towards achieving a safe and resilient community/group.
5. The State governments need to actively propagate disaster risk related information amongst the masses so as to ensure voluntary compliance of disaster safety techniques and risk transfer tools.
6. As earthquake is a major threat for all the Himalayan states large, funds have to be earmarked for making lifeline infrastructure earthquake resilient by retrofitting / reconstruction of existing structures and ensuring seismic safety provisions in all new structures.

3.12 In this context, it is to mention here that the TERI university has developed a Hazard Vulnerability Risk Index for the country titled “Mapping Disater Vulnerability in India using Analytical Hierarchy Process”. The index has been developed based on three broad areas: Exposure, Sensitivity and Adaptive Capacity. The indicators considered for each element are as follows: Exposure: (earthquake, cyclones,

floods, droughts and sea level rise): Sensitivity (population density, marginal workers, forest cover, protected area, and net sown area) and adaptive capacity (literacy rate, electricity availability, road facilities, communication facilities and medical facilities). We recommend that the scientific vulnerability index may be used to devolve the funds between states.

3.13 The suggested measures for bringing disaster resilience amongst the Himalayan states requires massive investment and with limited revenue generation capabilities none of the states would be in a position to allocate the required resources for the cause of resilient building. It is therefore required that the Central Government provides special risk reduction grant to the Himalayan states and take care of the issues mentioned below.

1. **SDRF allocation**: Previous disaster experiences in the Himalayan states suggest that the allocation under SDRF falls short of the funds required for search, rescue and restoration of essential services. Funds have to be therefore mobilized from various other sources. In view of increasing incidences of extreme climate events there is enhanced possibility of the Himalayan states being affected by such incidences more frequently. **It is therefore required that SDRF allocation of the Himalayan states be enhanced significantly.**
2. **Norms of assistance out of SDRF**: The norms of relief admissible under SDRF for rescue, relief and restoration are inadequate and do not reflect the actual ground realities, especially in the hill areas. **These norms need to be revised to take into consideration the actual requirements of the Himalayan states. For Indian Himalayan Region, which recurrently face disasters, the SDRF funding should be 100% from the centre.**
3. **Disaster Rehabilitation Fund**: Landslides and bank erosion that are frequent in the Himalayan states cause permanent loss of agricultural and other lands and also make some areas perpetually prone to ground subsidence and landslides and such habitations have been rendered unfit for human habitation. Geological surveys carried out over the years have indicated that mitigation measures would not be cost effective and most of these villages will have to be rehabilitated at alternative safe locations. People residing in these habitations perpetually face threat of disasters and have therefore to be rehabilitated at alternative safe places to avoid loss of life and property. The task of rehabilitating all the villages is immense and requires huge amount of resources and cannot be done by the state alone.

It is therefore necessary that a separate Disaster Rehabilitation Fund be established for the rehabilitation of disaster affected habitations.

4. **Disaster Mitigation Fund**: In the Himalayas, the realistic expectation is that crisis will recur; the question is not if, but when. Therefore, system of mitigation is at the very foundation of economic development. Without these the social investment made will be wasted. In accordance with the provisions of the Disaster Management Act, 2005 a number of natural calamities, particularly landslides can be averted by timely mitigation measures, thereby averting loss of resources, human lives. **It is therefore urgently required that the Central Government set up a Disaster mitigation Fund**.

5. **River Aggradation:** River beds in the Himalayan states are rising at an alarming rate. The fast rate of river aggradation is attributed to both increase in the sediment supply and reduced carrying capacity of the rivers. This is mainly due to the increase in the number of landslides, flash floods and cloudburst events together with unscientific debris disposal and reduced water supply. Raised river bed has made many habitations on the banks of major rivers prone to floods and incidence of excessive rainfall in years to come can devastate many areas. The river beds are therefore required to be excavated and cleared on a regular basis. Inclusion of river aggradation in the list of notified natural calamities would enable the state government to undertake this work out of the funds available under SDRF**. It is therefore expedient that removal of river sediment aggradation be included in the list of notified natural calamities.**

6. **Earthquake Risk Reduction Fund**: All the Himalayan states face major threat of earthquakes and if adequate and timely measures are not taken the devastation in the next major earthquake could well be beyond anyone's imagination. Massive investment is however required for assessing the earthquake risk, communicating risk to all stakeholders, capacity building of masons and engineers in earthquake safe construction, improving and ensuring compliance of building bye laws and popularising risk transfer measures. Besides this huge investment is required for ensuring retrofitting or reconstruction of identified seismically vulnerable structures. Moreover state governments have the obligation of ensuring seismic safety of their lifeline structures.

   A separate **Earthquake Risk Reduction Fund is thus required to be created for the Himalayan states that fall totally in Zone V and IV of Seismic Zoning**

Map of India.

7. **Recovery and Reconstruction Fund:** At present SDRF is the only available resource for dealing with disaster. SDRF is however unable to address the various concern of the state governments. Some new initiatives are needed to deal with the various emerging facets of disaster risk management. SDRF norms cover only basic rescue and relief but these norms do not address the issues of recovery, reconstruction and rehabilitation. After a disaster, reconstruction and rehabilitation are as important as rescue and relief. The state government has very limited resource base for post disaster reconstruction process and in the aftermath of a disaster it is constrained to move resources from other development activities. **Hence a new Recovery and Reconstruction Fund is required to be constituted on the lines of SDRF**.

8. **There is a need for a National Programme for funding the various studies required for early detection of disasters and the long term path to be followed for planning the development of the IHR region with regard to disasters.** Hence we request for the Programme for longitudinal studies of landslides, flashfloods and earthquakes in an integrated manner for the IHR region.

The 15th Finance Commission is requested to take into consideration the existing vulnerabilities of the Himalayan areas which are getting further aggravated by the changing climate. There is a clear uptick in the number of events in the area. The current policies treat both regions i.e the one which has a rare probability of being affected by disaster and other with incessant predictable and multihazard with the same policy guidelines. This shows the low priority accorded to IHR despite high flown rhetoric. Hence the above measures need to be implemented in letter and spirit to bring disaster resilience in the Himalayan states, making it compliant with Sendai framework. The human lives saved and loss of property averted in future disasters in the region would be a major dividend on the investment made besides propagating a culture of disaster resilience in the Himalayan states.

CHAPTER 4: DEVELOPMENT DISABILITY OF HIMALAYAN STATES : SPECIFIC PROBLEMS- NEED FOR SPECIAL DISPENSATION

"The environment and the economy are really both two sides of the same coin. If we cannot sustain the environment, we cannot sustain ourselves."

-Wangari Maathai

As mentioned, the Indian Himalayan Region (IHR) is spread across 10 states (administrative regions). Starting from foot-hills in the south (Sivaliks) the region extends to Tibetan plateau in the north (trans-Himalaya), comprising about 95 districts of the country. The region occupies the strategic position of entire northern boundary (North-West to North-East) of the nation and touches almost all the international borders (7 countries) with India.

The Himalayan regions face a kind of **'Development and Infrastructure Deficit'** along with insufficient and inefficient delivery systems.

4.1 The need for special dispensation for the states of the Himalayan Region has been by and large recognised by most of the Finance Commissions.

4.2 These states are characterised by a difficult geographical terrain with geological surprises at every step, sparsely dispersed population, high cost of creation and maintenance of infrastructure, environmental constraints because of large forest area, high transportation costs, inclement weather, disaster proneness and weak infrastructure along with other cost disabilities.

4.3 Being predominantly mountainous, the economy of the Himalayan states is characterised by lack of robust economic activity and livelihood opportunities, as reflected by low per capita income of hill areas. This gets further aggravated by lack of basic amenities and remoteness, leading to intra state and interstate disparities in social and economic indicators.(For example, the nearest railway head for Mizoram is Silchar, which is 180 kilometres from Aizwal).

4.4 In all the states of the Indian Himalayan Region it has been witnessed that locals are migrating from hills to plain areas due to lack of basic infrastructure along with social services & livelihood opportunities.

4.5 Major GDP drivers of these Himalayan areas like agriculture, horticulture, industry, hydro power, tourism etc. are constrained primarily by geographical, environmental and regulatory factors over which the state has no control.

4.6 As GST is consumption based tax, the three western Himalayan States (namely Jammu & Kashmir, Himachal Pradesh, Uttarakhand) are severely affected as consumption of the products produced/manufactured within these States are highly marginal.

4.7 Some of the Himalyan states are small in size and have smaller administrative units. For example, Tripura being a small state has huge number of sub-divisions, blocks and urban local bodies, of comparatively lesser area than average. This causes additional financial burden on the state.

4.8 In Mizoram, In absence of glaciers unlike most of the Himalayan states, the 16 major rivers in Mizoram are all rainfed, which remain water stressed during dry season and experience cloud burst and flash floods during rainy season. Since most of the habitations in the state are situated in top of the hills and mountain ranges, the task of supplying drinking water to the habitation is expensive and difficult as pumping water by diesel and electric generator is involved. Also, Mizoram is the 5th most urbanized state in the country with 49 % population living in urban areas. These are confronted with problem of over-crowding, scarcity of water, growth of slums, inadequate health infrastructure, sanitation and waste disposal etc.

4.9 The Infrastructure gap of Arunanchal Pradesh can be appreciated from the fact that, the state has only 20,775.29 kilometre of road (National and State Highways combined), that is 25.00 per 100 sq km of its territory on an average, which is far below the need and the national average (76.8).

4.10 In Jammu and Kashimir, varieties of internal and external factors have affected the economic development of the state. Investor perception of peace and order in the valley is discouraging promotion of IT based industry in Kashmir valley. Huge expenditure on security establishment, Law and Order, disturbance and poor connectivity to remote areas, insufficient penetration of banking and financial market, poor cyber connectivity, ailing power sector and effects of external aggression on tourism has put undue stress on state funds and has become a major developmental disability.

Economic Activities in Himalayan Areas

4.11 As compared to plain areas, agriculture in Himalayan states suffers from serious handicaps and a large part of the population is totally dependent on the public distribution system for its food consumption requirements. This is mainly because of geographical factors, lack of irrigation facilities, low population density, poor infrastructure, disaster vulnerability, man animal conflict due to proximity to the forest, lack of market based institutions, thereby leading to low production and productivity.

4.12 Niche areas like horticulture, floriculture etc. too are constrained by small size of land holdings, natural calamities, man-animal conflict, low technical knowledge of farmers, climate change and poor marketing/value chain infrastructure.

4.13 Thus agriculture in the hills is trapped in a vicious circle of low productivity and low income. Field studies suggest that the returns from farming in the hills are very low and cultivators have to look for off- farm opportunities to fulfil their basic economic needs.

4.14 All the Himalayan states have promulgated different policies to attract investment in manufacturing sector. Even these incentives are not enough to attract the industries as there is no comparative advantage to the industry mainly due to non-availability of raw material, limited size of the local market and the high cost of transportation, which adds to the overall cost, making most of the products unviable. Similarly in agro-processing and horticulture processing sector, industries have not succeeded primarily due to diseconomies of scale and limited marketing opportunities.

4.15 The Himalayan states are estimated to have a potential of 1,15,000 MW in hydropower generation. This sector which could have been one of the major drivers of economy of these states, is unfortunately unable to contribute to the economy due to geographical, environmental, regulatory factors and policies of Government of India. This has in turn, led to substantial loss in revenue and employment opportunities in the hill areas.

4.16 Private Sector is shying away from investing in health, education and other service sectors due to viability issue, as paying capacity is very low in these areas, which affect their returns to investment.

4.17 Tourism as a sector does offer some possibilities for private investment, but most of the geographical area is under forest land and as such is governed by stringent regulatory regime. Moreover there is lack of basic quality infrastructure which is also responsible for poor private sector investments, as these factors make their project unviable. Moreover, tourism sector is unable to develop requisite infrastructure to attract niche tourists.

4.18 It has been witnessed that during tourist season, some Himalayan cities suffer from overcrowding of tourists. This is primarily due to low carrying capacities of these areas and low level of infrastructure development. The pressure on these limited areas will continue to grow and soon on priority basis we need to create new alternative destinations and also enhance the carrying capacities of existing cities by building more sustainable infrastructure.

Use Disability& Cost Disability as a Himalayan State

4.19 The Himalayan states are not able to use their existing resources within their domain, because of various reasons like Policy Mandated Restriction due to environmental reasons, thus resulting in **Use Disability**. Another aspect of **Use Disability** is that a large part of the natural resources that the Himalayan regions have must continue to remain unharnessed due to preservation policies, environmental benefits of which accrue to the entire nation.

4.20 The need to protect and conserve forests, wildlife and other biodiversity, besides restricting the land use choices and thus causing developmental disadvantages, adversely affects the unit cost of providing public services. The cost of providing public services also varies across states/regions due to a large number of factors such as geographical terrain, population density, extreme and variable climatic conditions and are referred to as 'cost-disabilities'. When 'cost-disabilities' arise from factors that are considered exogenous to a state's control, the states need to be compensated through an additional allocation due to these disabilities, by incorporating these in the formulae for intergovernmental grants. In a number of developed countries cost disabilities have been inbuilt in the design of intergovernmental grants.

4.21 Factors contributing to 'cost-disability' in forested areas of hill states vis-à-vis non-hill states and/or non-forested areas in hill states can be identified as cost escalation in terms of time and institutional costs due to legal requirements and federal restrictions (e.g. Hon'ble Supreme Court rulings on diversion of forestland for non-forest purposes and associated cost for NPV charges, requirement for central clearances for non-forest activities etc.) need to be addressed.

4.22 Opportunity costs when expressed in terms of forgone developmental alternatives, restrictions on livelihood options, and mark ups on costs of developmental projects are much higher for these states as compared to other states.

4.23 Cost disability also happens due to following:

- In addition to high cost of infrastructure development, frequent repair & maintenance has also to be carried out due to heavy rains, snow fall, frequent landslides and flash floods leading to much higher maintenance cost as compared to other states.
- Since major area of the state is notified as forest, almost any development activity needs forest land diversion. This requires civil land twice the amount of forest land diverted and payment of NPV of the forest land. This is like double jeopardy for mountain people. On one hand, they protect natural ecosystem which provides ecosystem services to the whole nation and on the other hand they get penalized for their own development. Requirement of NPV causes **cost disability** for state and requirement of double civil land causes **Use Disability** as it deprives the state from its precious scarce civil land which could be used for infrastructure development or for upliftment of people's livelihood.
- **Three dimensionality of** the area whereby circuitous roads have to be built leads to extra capital cost as well as maintenance costs.

Cost of Providing Services to Floating Population

4.24 The Himalayan regions welcome substantially high number of tourist every year. This necessitates the state governments to not only create additional infrastructure in terms of stay arrangements, link roads, bus fleets, bus terminals, drinking water facilities, roadside amenities but also to bear huge cost of frequent maintenance of these infrastructure and related facilities. In the backdrop of the religious nature of tourism and the low paying capacity of the pilgrims, the returns are not commensurate with the cost of services being provided by the state governments.

4.25 Developmental Disability Index for Hill States in India

Development Disability Index (DDI) was first prepared by National Institute of Public Finance and Policy (NIPFP), New Delhi in 2013. The DDI prepared by NIPFP was later revised by erstwhile Planning Commission which has two broad components. It reflects the comparative socio-economic profile of all the states of the country.

4.26 The first component is the endowment effect, which is based on the Geographical Area Disadvantage Index (GADI). This index has been developed based on two sub components, viz (i) Forest Cover Index (FCI) i.e. the proportion of Forest Cover Area (FCA) to Geographical Area (GA), and (ii) Barren & Unculturable Land Index (BULI) i.e. the proportion of Barren & Unculturable Land to Geographical Area. The composite index of this component is based on the combined index of FCI and BULI in the ratio

60:40. For the purpose of FCI as well as BULI, the Land Use Statistics (LUS) data has been used.

4.27 The second component is the Infrastructure Deficit Index (IDI), which takes into account deficits in major infrastructural sectors viz. power, road, telecommunication, aviation, ports and railways.

4.28 The Development Disability Index (DDI) has been calculated as an average of Component-1,i.e.Geographical Area Disadvantage Index and Component-2 i.e. Infrastructure Deficit Index and the states have been ranked in terms of DDI. As an alternate mechanism, this DDI has been further superimposed with the connectivity disadvantage factor to arrive at another DDI (called DDI-2) and the states have been ranked in terms of DDI-2.

4.29 The table below provides the rankings of the states based on Component-1 (Geographical Area Disadvantage Index), Component-2 (Infrastructure Deficit Index including Hilly Terrain and Flood Prone Area component), Developmental Disability Index-1 [combination of Components-1&2] and Developmental Disability Index 02 (DDI-1 with factor such as connectivity disadvantages). It is apparent from table 1 that all the hill state suffer from inherent disabilities in socio-economic development as compared to the states of the country. Thus, based on Revised Development Disability Index (DDI) prepared by NIPFP and erstwhile Planning Commission and various other factors, it was recommended that compensation to 11 Himalayan States on account of their contribution of environmental Services (Public Goods) to the rest of the nation and in recognition of their special disabilities on account of these and related factors, should be 2% of the Gross Budgetary Support (GBS) to the plan each year. (Equivalent to Rs. 10000 Cr. in 2013-14).

Table 1: Calculations of Development Disability Index

S.No.	States	Forest cover Index (LUS)	Barren and unculturable land (LUS)	Geographical area disadvantage Index	Infrastructure Deficit Index (ID)	proportion of Hilly terrain HT)	Proportion of Flood Prone area (FPA)	Combination of Hill terrain & flood prone area	[HT & FPA]* [ID-Index]	Development Disability Index (1)	Development Disability Index-Rank (1)	Connectivity Disadvantage	Combined index of Infradeficit and connectivity disadvantage	Development Disability Index (2)	Development Disability Index-Rank (2)
						0.8	0.2		0.8			0.2			
1	Arunachal Pradesh	4.18	0.12	2.55	5.11	1.00	0.00	0.80	4.09	3.32	1	1.0	3.47	3.01	1
2	Manipur	3.51	1.06	2.53	4.77	1.00	0.00	0.80	3.82	3.18	2	1.0	3.26	2.89	2
3	Mizoram	3.46	0.07	2.10	5.01	1.00	0.00	0.80	4.01	3.06	3	1.0	3.41	2.76	3
4	Uttarakhand	2.82	0.71	1.97	4.83	1.00	0.00	0.80	3.86	2.92	4	0.0	3.09	2.53	6
5	Sikkim	2.17	1.06	1.73	5.01	1.00	0.00	0.80	4.01	2.87	5	1.0	3.41	2.57	5
6	Tripura	2.75	1.06	2.08	4.51	1.00	0.01	0.80	3.62	2.85	6	1.0	3.09	2.58	4
7	J&K	1.25	2.05	1.57	5.07	1.00	0.00	0.80	4.06	2.81	7	0.5	3.35	2.46	8
8	Meghalaya	1.95	1.06	1.59	5.00	1.00	0.00	0.80	4.00	2.80	8	1.0	3.40	2.50	7
9	Nagaland	2.44	0.03	1.47	5.06	1.00	0.00	0.80	4.05	2.76	9	1.0	3.44	2.46	9
10	HP	1.11	2.57	1.69	4.73	1.00	0.01	0.80	3.79	2.74	10	0.0	3.03	2.36	10
11	Assam	1.08	3.20	1.93	4.80	0.24	0.09	0.21	1.03	1.48	11	1.0	1.02	1.48	11
12	Kerala	1.28	0.10	0.81	3.27	0.76	0.03	0.61	2.01	1.41	12	0.0	1.61	1.21	12
13	Karnataka	0.74	0.74	0.74	4.49	0.25	0.00	0.20	0.90	0.82	13	0.0	0.72	0.73	14
14	Maharashtra	0.78	1.00	0.87	4.17	0.23	0.01	0.18	0.76	0.81	14	0.0	0.61	0.74	13
15	Odisha	1.71	0.96	1.41	4.75	0.00	0.04	0.01	0.04	0.73	15	0.0	0.03	0.72	15
16	Chhattisgarh	2.11	0.40	1.42	4.85	0.00	0.00	0.00	0.00	0.71	16	0.0	0.00	0.71	16
17	Tamil Nadu	0.75	0.67	0.72	4.02	0.18	0.01	0.14	0.57	0.65	17	0.0	0.46	0.59	21
18	Jharkhand	1.29	1.27	1.28	4.63	0.00	0.00	0.00	0.00	0.64	18	0.0	0.00	0.64	17
19	Gujarat	0.45	2.41	1.23	3.93	0.00	0.04	0.01	0.03	0.63	19	0.0	0.03	0.63	18
20	Goa	1.59	0.74	1.25	0.00	0.00	0.00	0.00	0.00	0.63	20	0.0	0.00	0.63	19
21	Andhra Pradesh	1.04	1.32	1.15	4.51	0.00	0.04	0.01	0.04	0.59	21	0.0	0.03	0.59	20
22	MP	1.30	0.77	1.09	4.88	0.00	0.01	0.00	0.01	0.55	22	0.0	0.01	0.55	22
23	Rajasthan	0.37	1.24	0.72	4.86	0.00	0.10	0.02	0.09	0.41	23	0.0	0.08	0.40	23
24	Bihar	0.30	0.82	0.51	4.67	0.00	0.13	0.03	0.12	0.32	24	0.0	0.09	0.30	24
25	West Bengal	0.62	0.04	0.39	4.36	0.04	0.08	0.04	0.19	0.29	25	0.0	0.15	0.27	25
26	Uttar Pradesh	0.32	0.37	0.34	4.68	0.00	0.22	0.04	0.20	0.27	26	0.0	0.16	0.25	26
27	Punjab	0.27	0.09	0.20	4.18	0.00	0.11	0.02	0.09	0.14	27	0.0	0.07	0.13	27
28	Haryana	0.04	0.42	0.19	4.44	0.00	0.07	0.01	0.06	0.13	28	0.0	0.05	0.12	28

Source: (i) Land use statistics, Ministry of Agriculture, GoI, (ii) Planning Commission,GoI

4.30 Thus, due to its low resource base, low economic potential, remote mountainous terrain, high cost of providing services, international border, low level development & consumption, and other cost disabilities arising from facts that are exogenous to state control, the various finance commissions and Government of India have always given a **special category status to the Himalayan states and we all humbly request the 15th FC to give a preferential treatment to the states of the Indian Himalayan Region.**

CHAPTER 5: FISCAL STATUS OF HIMALAYAN STATES

5.1 The National Development Council (NDC) had accorded 11 states of the country, the state of "Special Category States". They are special in the sense that they have special socio-economic, geographical problems, high cost of production with less availability of avenue for additional financial resources and hence low economic base for livelihood activities. This status was based on parameters like:

a. Low revenue base and tax potential.

b. Hilly and difficult remote terrain.

c. Low population density.

d. Non-viable nature of state's finances.

e. Strategic location along the borders of the country.

f. Economic and infrastructural backwardness.

g. High forest cover as percentage of total area

5.2 It is seen that in past also while designing transfers to these states, both the erstwhile Planning Commission and Finance Commissions have given due consideration to these states due to their hilly and difficult terrains, low population density, economic, infrastructural backwardness and their weak fiscal capabilities. The treatment of the Special Category states in the Finance Commission transfers is summarised below:

Grants-in-Aid

- *The 5th FC gave special consideration to the lower income of Scheduled Tribes in Nagaland. It also assigned grants to border states like J&K for strategic purposes.*
- *The 7th FC gave a grant to Assam for creating a new capital following its separation from Meghalaya.*
- *The 11th FC observed that a substantial amount of grants-in-aid would go the Special Category states and by 2004-05 only these states would receive grants-in-aid to meet the deficit on their non-Plan revenue accounts.*
- *The 12th FC gave Uttarakhand a grant of Rs. 200 crore to develop infrastructure at its state capital and Rs 35 crore for promoting tourism.*
- *The 13th FC also gave grant in aid to all Special Category States.*

Sharing of Central Taxes

- *While using the 'area' criteria for tax devolution, the 12th FC assigned a minimum two percent share for those states having an area smaller than two percent. This benefited the Special Category states.*

Debt Relief

- *The 5th FC gave debt relief to Assam, J&K and Nagaland on interest to be paid on the loans taken for unproductive purposes.*
- *The 6th FC converted the loans taken by the newly-formed states of Himachal Pradesh, Manipur and Tripura, and also of the Union Territories into a single loan repayable in 20 years.*
- *The 8th FC wrote off 85 per cent of the reassessed non-Plan gap of J&K, Himachal, Tripura, Manipur, Meghalaya, Nagaland, and Sikkim.*
- *The 10th FC recommended specific repayment relief to the Special Category states.*

Calamity Relief

- *The 12th FC, in its definition of natural calamity, included landslides, avalanches, and cloudbursts to specifically address the disasters faced by the hilly states.*

Upgradation and Special Purpose Grants

- *The 8th FC recommended that the entire amount required for upgradation in some of the Special Category states be met out of grants.*
- *In the normative approach of the 9th FC, higher wear and tear in the hill states and a lower rate of return was prescribed for road transport corporations. Higher norms for maintenance were also specified for the hill states.*

5.3 The Eleventh Finance Commission, while commenting on the restructuring of the system of financing of expenditures in the special category states, made the following observations:

- The non-plan revenue gap of these states assessed on the basis of norms relevant in their case after taking into account their share in Central taxes should be met out of Finance Commission grants. There should be no need for any plan grants to meet these gaps.
- Responsibility of development of infrastructure of vital importance to the region requiring large investments should be that of the Centre
- The system of plan assistance for Special Category States should be reviewed. The review of Gadgil formula as suggested by us earlier should also cover the review of plan assistance to the Special Category States .

5.4 The 14th Finance Commission based on the comparable GSDP figures prepared by the Central Statistical Organization (CSO) specifically for the use of the Commission, assumed much higher nominal growth rates for the period of 2015-16 to 2019-20 than the actual growth rates being seen. The high growth rate assumed by the Commission implies a higher nominal amount of GSDP in the award period of the Commission. It further assumed a tax buoyancy of 1.5 which was highly optimistic for a small economies of IHR States. Both these factors combined together resulted into a higher level of projected nominal revenue receipts than what could have actually been feasible.

5.5 The 14th FC assessed the tax revenues of the Union Government for the period 2015-16 to 2019-20 based on tax-specific buoyancies using data from 2001-02 to 2012-13. Significantly, there has been a huge divergence in the gross tax revenues projected by the 14th FC and Budget estimates of Union Government, with the latter much lower than the former. This has naturally resulted in huge divergence between the assessed levels of tax devolution by the 14th FC and the observed values for Manipur and other States of the region.

5.6 For example, the cumulative gap during the first 4 years of the award period for Manipur, from 2015-16 to 2018-19, is a staggering Rs.2264 crore. The year-wise gap are indicated in the table below:

(Rs in cr)

	Assessed by 14th FC	Actuals	Gap
2015-16	3579	3142	(-)437
2016-17	4131	3757	(-)374
2017-18	4774	4154	(-)620
2018-19	5522	4689	(-)833
Total	*18006*	*15742*	*(-)2264*

5.7 For the Himalayan states, with limited resource base, it is impossible to meet this magnitude of resource gap from its own resources or through raising loans. As a result of the shortfall in revenue transfers, there has been a shrinking fiscal space for capital and developmental expenditure as substantial portion of these transfers are pre-empted by committed revenue expenditures like salary, pension, repayment liabilities and interest

payments. The problem of frequent ways and means crisis in the states of this region is mainly attributable to this widening gap in transfers. Given the limited resource base of the IHR states, we urge the 15th FC to evolve a mechanism of compensating the IHR states for the shortfall in the tax devolutions vis-à-vis the assessed values.

5.8 All the Himalayan States are struggling to provide basic services including social infrastructure in all villages as population is very scattered. As compared to other States, villages of the Himalayan States are very small and the average number of households are less than 500. But it is necessary to provide basic services like schools, health services, drinking water & sanitation in each of these villages. Because of sparse population and also due to difficult terrain the cost of providing social services and infrastructure is very high as compared to States which are in plains

5.9 Due to very limited revenue option, most of the Indian Himalayan States are behind national average in Own Tax/GSDP ratio. Due to mismatch between receipt & expenditure, most of these States are heavily dependent on Central transfers to meet their requirement. This is evident from the following chart which clearly shows that gap between own tax revenue/GSDP and Development Revenue Expenditure/GSDP is 10.83 for SCS whereas it is only 3.5% for all India. We have taken FY 2016-17 data as this is the most recent data available in RBI State Finances report.

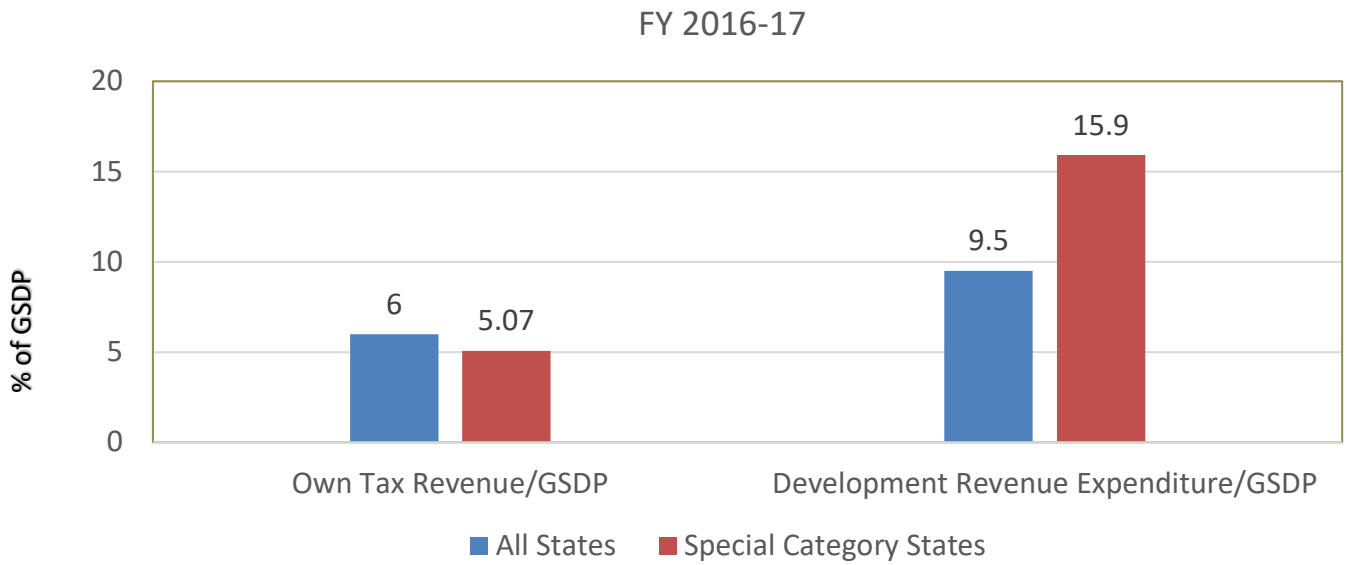

Figure 1: Comparison of Own Tax Revenue/GSDP to Development Revenue Expenditure/GSDP

Source: Reserve Bank of India Report " State Finances : A Study of Budgets"

5.10 It is seen that all Himalayan States have low revenue opportunity and so depend heavily on central transfers and debt to meet their commitment to their citizens. It is evident from the following graph that on an average debt GSDP ratio of Himalayan states is very high as compared to all states:

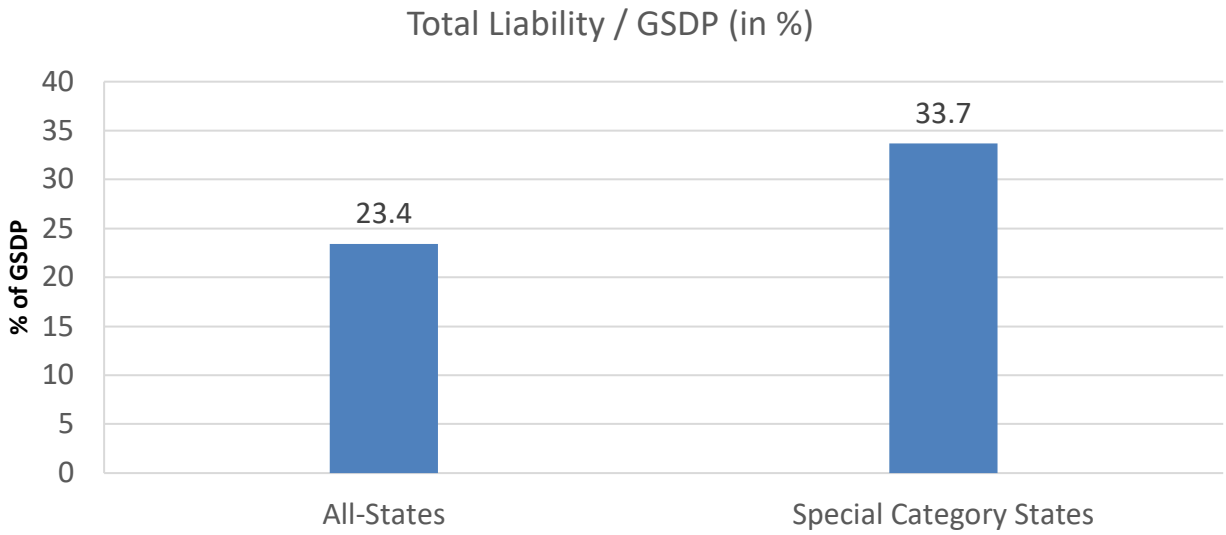

Figure 2: Total Liability/GSDP

Source: Reserve Bank of India Report "State Finances: A Study of Budgets"

5.11 In the long run, given the low fiscal capacity of the states, if the due revenue deficit grant is not given, then to meet its statutory and constitutional obligations, these States will have to borrow more, which will further increase the debt to GSDP ratio of the State making it highly indebted.

5.12 From the above graphs it is quite evident that these Himalayan States have very limited resource base to generate revenues and on the other hand revenue expenditure required for providing basic services to its citizens is colossal, which increases liability and creates huge gap between revenue and expenditure. **So to bridge this gap, the only option available to these States is Central assistance by way of Revenue Deficit Grant. Also,** Revenue Deficit Grants are a Constitutionally mandated mechanism to ensure that chronically Revenue Deficit and economically weak States are adequately compensated while assessing their Revenue Gaps, every five years, in terms of Articles 275 and 280. A just formula for horizontal distribution of taxes and adequate devolution of Revenue Deficit Grants are the only way to ensure economic development in states of Indian Himalayan Region.

5.13 The 14th Finance Commission calculated the average tax-GSDP ratio of the states for the base year, which works out to 8.26%, and grouped the states into two categories- for

states above the average it assumed an own tax buoyancy of 1.05 and for those below the average, it assumed a higher buoyancy of 1.5. For example, with tax-GSDP ratio of 3.19%, Manipur was much below the average tax-GSDP ratio of 8.26%. Assuming a buoyancy of 1.5 for an economy like that of Manipur, and many of the special category states, was highly optimistic and making it a basis for calculation of revenue deficit gap was unreasonable and unrealistic.

5.14 Growth in tax-GSDP ratio is limited for two categories of states- those with a subsistence economy and very low tax-GSDP ratio, and those which already have a very high ratio and, therefore, limited potential for its further growth. We expect an S-type curve, relatively flat at the top and the bottom and relatively steep in the middle. We have therefore requested the Fifteenth Finance Commission to divide the states into three categories based on the mean (m) and standard deviation (σ) of the tax-GSDP ratios of the states: those lying below 'm-σ', those lying above 'm+σ' and those lying between 'm-σ' and 'm+σ'. States having tax-GSDP ratios lying between 'm-σ' and 'm+σ' may be expected to have a higher tax buoyancy whereas those lying beyond the two σ-limits will have a lower buoyancy. We expect that this methodology in the assessment of Own Tax Revenue of the States will be more realistic. Given the fact that most IHR states have very poor tax base and low buoyancy, it is requested that the 15th Finance Commission should compensate these states through Revenue Deficit grants.

5.15 While per capita income is a good criterion for determining revenue raising capacity of a state, the structure of economy along with intra-state disparities need to be factored in. Public Finances of all Himalayan States are weak and hence investment by Government is very low. Apart from this, most of the Himalayan States on account of their low population, skewed population distribution, geographical factors, diseconomies of scale and problem of agrarian economy are not able to attract private investment in industry, manufacturing and services sectors. These constraints also leave little scope for projects in a public private partnership mode in remote hilly regions. Further, if we look at the credit deposit ratio of the commercial banks, most of the special category states have very low CD ratio, which further goes to show that the resources by way of private investment through bank credit is very limited. Weak infrastructure and disaster proneness too impact investment.

Table 2: State wise credit deposit ratio of scheduled commercial Banks according to sanction (as of end of March) (percent)

Regions/States/UTs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Himachal Pradesh	43.4	38.6	42.2	41.6	38.9	35.1	35.8	35.3	32.9	29.7
Jammu and Kashmir	56.4	47.2	46.4	38.1	33.8	36.9	40.1	40.2	44.2	39.8
Arunachal Pradesh	31.7	25.5	27.5	23.7	23.9	21.8	23.7	26.8	29	24
Assam	42.4	38.5	37.8	36.5	37.7	37.2	37.7	36.7	42.2	40.3
Manipur	48.4	36	42.1	34.8	31.3	28.6	33.6	34	41.1	38.7
Meghalaya	33.2	28.3	25.6	24.4	25.8	24	27.4	25.9	24.8	25.9
Mizoram	62.9	57.9	53.2	46	38.9	35.3	37.8	37.8	40.1	36.4
Nagaland	34	30.8	30.3	26.1	27.2	28.4	31	32.7	34.1	31.5
Tripura	36.1	30.7	30.7	32.2	31.3	32.8	32.4	33.7	35.3	35.9
Sikkim	46.8	41.6	37.2	37.9	33.1	27.2	26.5	25.6	28	27.4
Uttarakhand	26.2	25.3	33.7	35.4	35.6	34.8	35.6	34.5	34.9	34.3
Himalayan States	**42.0**	**36.4**	**37.0**	**34.2**	**32.5**	**31.1**	**32.9**	**33.0**	**35.1**	**33.1**
ALL INDIA	**74.4**	**72.6**	**73.3**	**75.6**	**79**	**78.8**	**79**	**77.1**	**78.4**	**73.8**

Source: Basic Statistical returns of schedule commercial Banks in India RBI, Various issues

5.16 The above table, clearly reflects that credit offtake and spending in these States is very low as compared to all India average. It is clear that whereas all India average is more than 70% , the CD ratio of Himalayan States is much below 50%. This clearly infers that resource flow through private investment is very low and most of the savings of Himalayan States goes to more developed regions of the country.

5.17 In the devolution criteria the weightage assigned to economic criteria is primarily to Income distance formula of the various states. But per capita Income is only one aspect of conomic conditions, Investment has to be taken as another important criteria and CD ratio can be a good proxy to indicate investments in a state. **In view of above, the Himalayan states request that apart from income distance criteria, CD ratio should also be considered for determining devolution.**

5.18 GST is a huge tax resource base for all the states. It is a new regime and the revenues of the state governments have been protected for a period of 5 years. We request for continuation of revenue protection (compensation), till the end of the 15th finance commission period.

CHAPTER 6: WATER RESOURCES

6.1 The IHR is home to over 50 million people who sustain their lives and livelihoods in these mountains. Most of northern India's river systems originate in the Himalayan region, fed either by glacial melt or the numerous springs that dot the mountainous landscape. The Himalayas, aptly known as 'the water tower of the earth', are therefore a major source of fresh water for perennial rivers such as the Indus, the Ganga and the Brahmaputra. 70% of the world's fresh water is frozen in glaciers. 5000 glaciers cover more than 38,000 sq km area in IHR. The Himalayan mountain system is the source of one of the world's largest supplies of fresh water. The rivers arising out of the Himalayas are the lifeblood for some of the highest concentrations of populations on earth.

Table 3: Annual runoff in the major Himalayan rivers

Annual runoff in the major Himalayan rivers:

River System Average	Annual Runoff in billion cubic meter (BCM)
Brahmaputra	606.8
Ganges	371.6
Indus	143.6

Source: Jayanta Bandhopadhyay et al., Himalaya Water resolution: Ecological & Political aspects and Management, 1994

6.2 The Himalayan catchment is the largest basin in the country and it contributes approximately 59 per cent of the water resources utilized in the country. These rivers are fed not only by the glaciers but also by many tributaries and springs. Experts fear that the drying up of springs will affect the flow of these rivers. Pollution and increasing water consumption, mainly for use in agriculture, industry and energy production, pose major challenges to the eco-system of these rivers. A World Bank report outline that by 2032, almost two-thirds of the aquifers in the country will be in a critical state; which will undermine agricultural production and livelihoods in regions that depend on groundwater.

6.3 As per NITI Aayog "Composite Water Management Index" published in June, 2018 India is suffering from the worst water crisis in its history and millions of lives and livelihoods are under threat. Currently, 600 million Indians face high to extreme

water stress and about two lakh people die every year due to inadequate access to safe water. The crisis is only going to get worse. By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual **~6% loss in the country's GDP**. As per the report of National Commission for Integrated Water Resource Development of MoWR, the water requirement by 2050 in high use scenario is likely to be a milder 1,180 BCM, whereas the present-day availability is 695 BCM. The total availability of water possible in country is still lower than this projected demand, at 1,137 BCM. Thus, there is an imminent need to deepen our understanding of our water resources and usage and put in place interventions that make our water use efficient and sustainable. The adverse affects of the growth path adopted around the world and in our country has started affecting the eco-system and the villages of Himalayan areas are already facing grave water crisis.

6.4 Going by the NITI Aayog report, tens of thousands of villages in Himalayan areas are facing acute shortage of water for drinking and other domestic purposes. The IHR is already water-stressed due to the drying up of or blockages in several water sources and natural springs. With changing climatic conditions and rainfall pattern, a large number of villages, hamlets and settlements are facing potential drinking water shortages. As per NITI Aayog, baseline water stress in India in 2010 is as following:

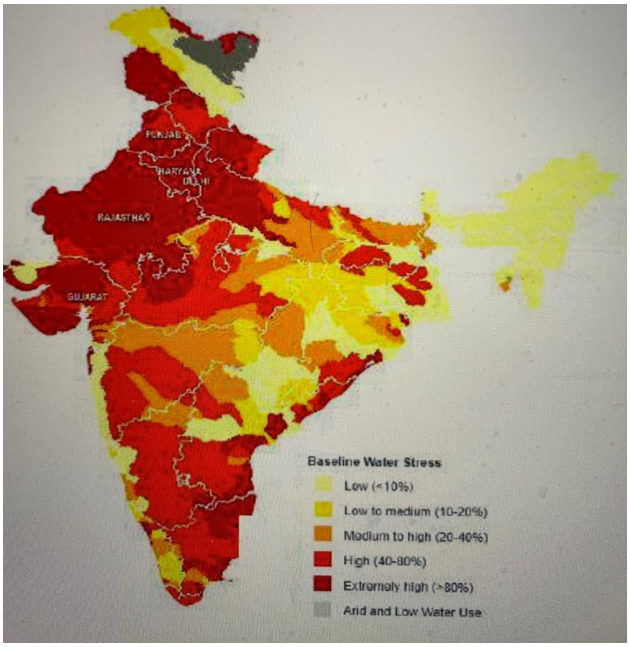

Figure 3: Baseline Water Stress

6.5 Water is at the top of the development agenda of the new government, as emphasized by Hon'ble Prime Minister at Niti Aayog's governing council meeting on 15th June, 2019. He encouraged participating Chief Ministers to give top priority to the subject of water in all its different avatars, especially conservation. Hon'ble Prime Minister emphasized that the first concrete step taken by the central government towards a holistic and integrated perspective on water has been the constitution of the new Jal Shakti Mantralaya. This bold institutional step has integrated the erstwhile Ministry of Water Resources, River Development and Ganga Rejuvenation with the former Ministry of Drinking Water and Sanitation, and has led to the formation of a single new ministry focused on holistic management of water resource. This is a major step towards the consolidation of the management of water resources with delivery of drinking water and sanitation — a much-needed step in the direction of ensuring India's water security — as well as a thrust towards the goal of providing safe and adequate piped water supply for all households.

6.6 Hence it is also essential to introduce a Centrally Sponsored Scheme which holistically addresses the need to maintain the sources of the river systems and the springs. The CSS should be supporting the river preservation, conservation and rejuvenation efforts for which the need is already being felt at the national level too.

6.7 The Himalayas are water towers of the country, thus a forward-looking performance grant should be provided for protection and conservation of river eco-system, its rejuvenation and also to improve river flow and water quality, which has trickle down effect on the entire northern subcontinent as mentioned earlier. This will also help us in meeting the goal of our Hon'ble Prime Minister and save us from the imminent threat of severe water crisis as highlighted in NITI Aayog report.

CHAPTER 7 : DEVOLUTION PRINCIPLES

7.1 The constitution of India assigns to the Finance Commission, the important task of laying down the principles of vertical and horizontal devolution of resources. Since, taxes are less decentralised than expenditures, there occurs an imbalance between resources and needs of different tiers of governments. States perform major expenditure functions and need resources by way of revenue sharing and grants. The inter-se distribution of fiscal transfers has to take into account equity as well as efficiency issues.

Vertical Devolution

7.2 In the absence of the untied plan grants which used to flow earlier through the mechanism of the Planning Commission, the social responsibilities of the states put fiscal stress on the states due to reduced budgetary support on the plan side.

7.3 As stated earlier, special category states are categorised as such because of their weak fiscal capacity, a narrow economic base, cost disabilities and other various development constraints. While, the 11th FC emphasized the need for special consideration for special category states, the 14th FC treated them at par with the general category states.

7.4 Fundamental changes have been introduced in the Union-State Fiscal relations in recent years. In the context of the transformational change that has taken place in the Centre-State fiscal relations, particularly post-14th FC award, most of the Himalayan states, with an assessed revenue deficit in all the five years of the 14th Finance Commission award period, did not benefit from the enhanced devolution of 42%, as tax devolution and revenue deficit grant together were only expected to help maintain the State's revenue account at zero deficit.

7.5 The enhanced devolution of 42% did not create any extra fiscal space for augmenting capital and developmental outlays in these states. The counter cuts on plan grants, like SPA and SCA, on the premise of enhanced devolution of 42% worked to our complete disadvantage as it deprived us of a traditional resource base for taking up critical social and economic infrastructure, for years, in the State. For example, the total Union transfers to Manipur as a percentage of GSDP

declined from 39.41% in 2014-15, the last year of the 13th FC award period, to 38.59% in 2015-16, the first year of the 14th FC award period.

7.6 In fact, the total resource transfer as a percentage of total revenue receipts of the special category states has grown only marginally during the 14th Finance Commission award period. The only significant change that has taken place is in the mix of transfers - with the Finance Commission transfers share increasing considerably in the 14th FC award period, constituting more than 60 percent of the total transfers, and the non-FC grants suffering a cut. Increase in devolution of taxes in the 14th FC award was completely neutralized by cuts in plan transfers and these States did not really benefit from the increase in 14th FC transfers in terms of improvement in the overall flow of resources from the Centre.

7.7 It is important to understand and appreciate why the devolution of Central taxes at a higher rate of 42% is not able to compensate for transfers under Plan (NCA, SCA and SPA) for the special category states, the hill states. For the plan transfers, 30% of the NCA to States was earmarked for special category states. SCA and SPA were additionalities provided to only the special category states for their special requirements and projects. Thus, total transfer under Plan to the special category states was more than 30% of the total transfers to all States under Plan. On the other hand, out of the total share of the states in the total divisible pool of taxes, the share of the special category states is only **11.52%**. During the 13th FC, total devolution to the special category states was **9.6%.** Thus, the advantage of higher share of transfers (of more than 30%) under Plan provided to the special category states have in effect been discontinued with the implementation of the 14th Finance Commission award.

7.8 Considering the poor resource base and unique features of special category states, it is unfair to club them along with all other states for the purpose of horizontal devolution. The special requirements of these States need to be recognized by earmarking a part of the divisible pool of Central taxes only for these States. The total tax devolution to special category states under 14th Finance Commission award was 11.52% and transfers under plan to these states were more than 30%.

7.9 **In the absence of special purpose grants, it is requested that at least 30% of the sharable pool may kindly be set aside to be shared amongst the Indian Himalayan States.** It will go a long way in compensating for the loss of assistance, by way of plan grants to these states.

Horizontal Devolution

7.10 The revenue sharing principles which have emerged over the years have been guided by three main principles, (1) Capacity equalization (2) Efficiency promoting incentives (3) Allowance for cost disabilities.

7.11 The revenue sharing is guided by the principle of horizontal equity wherein fiscal resource deficiencies across the states arising out of systemic and identifiable factors have to be evened out, while certain normative principles have to be followed to assess the fiscal capacity, revenue resources and expenditure needs of the state.

7.12 To avoid principle of deficiency becoming a 'perverse incentive' to remain resource deficient, efficiency incentives become important.

7.13 But, the eco-services hitherto provided by these states, in terms of carbon stock, forests, rivers, water resource and biodiversity which impacts the entire subcontinent, needs to figure in the balance sheet. These are tangible and intangible assets which is the bedrock for a market oriented society. The very sustenance of the country depends on these services rendered. Further negligence of these services would wreak havoc in the very sustenance of our nation. The precursory effects of neglected eco-system is manifesting itself in terms of water distress, heat waves and temperature increase all over the country. Not giving these services a metric, keeps it outside the purview of economics and by default relegates it to decay and degradation. As a nation we cannot afford to do it any further.

7.14 Tied to the ecology and geography of the place are some constraints which are endemic because of geographical & environmental factors on which the state policies of the Himalayan states have little control. The issues are systemic, clearly identifiable and deserve serious consideration while working out the formula for horizontal distribution.

7.15 Finance commissions in the past have by and large, assigned higher weightage to population and income, as compared to other factors. The Himalayan states have high percentage of forest area which includes tree covered forests, glaciers and Himalayan snow clad mountains, the water towers of the nation, low population density, high operational and maintenance cost for services, diseconomies of scale, deficient infrastructure, disaster vulnerability etc. This puts the states to a disadvantage with regard to their income generating economic activities and economy of service delivery.

7.16 A skewed habitation pattern over a far flung area with a low population density, leading to higher cost for providing services, justifies weightage to the criterion of population density, in order to meet the cost disabilities and higher expenditure for services. **Hence it is suggested that out of the weightage given to population, a certain percentage be assigned on the basis of 2011 population, with the rest to be assigned to inverse of the population density, and as an incentive to move toward replacement rate of population growth.**

7.17 Economic growth and development are a function of investment, both public and private. A look at Credit Deposit Ratio of the states makes it amply clear that the CD ratio of most of the special category states is well below the national average, which clearly demonstrates that resource flow through private investment is very low and most of the savings of the state goes to more developed regions of the country thereby enhancing development in these states.

7.18 The 11th FC allotted a weight to infrastructure distance in addition to the weight on income distance for correcting differential fiscal capacities and for enabling poorer states to meet better the needs for public goods and services. Earlier FCs had also used an index of infrastructure as a measure of the relative availability of economic and social infrastructure in a state.

7.19 Keeping in view the above discussion, we suggest that apart from income distance criteria for devolution to the state, private and public investment being undertaken in the state as symbolised by the CD ratio or infrastructure distance should also be taken into consideration for devolution. **Accordingly we suggest that a higher percentage weight should be given to the income distance criteria to help the States with low per capita income and a certain percentage weight to be given to CD distance or infrastructure distance criterion, which will be calculated on the lines similar to income distance criteria,** which presumes that the state farther from the highest CD norm or infrastructure deficiency would be compensated accordingly.

7.20 The criterion of area justifies the fact that catering to a scattered population over a larger area implies higher expenditure needs. However, the geographical area in a hill state has a three dimensional nature in the form of mountain peaks, hill slopes, undulations etc expenditure needs, both capital and maintenance are much higher due to three dimensionality in the area criterion. **We request that,**

a floor limit for smaller states as recommended by 14th Commission should be retained.

7.21 Climate change and its harmful effects are evident for everyone to see. It is only increasing in an exponential manner, as the compounding effects of heat, lack of water, degradation of vegetation and forests, pollution, industrialization are difficult to be assessed in an algorithm, as no precedence of this grand scale exists as a reference. But, unmistakably we find its detrimental affects every year in one form or the other. To reverse this trend, and to sustain what we otherwise take for granted, we need to give due weightage for the factors that counter climate change. If we keep only productivity in mind to the detriment of the eco-system, the cost we would incur collectively even to rebound back to normal if that is possible would be huge. It is long overdue and we owe it to our posterity to preserve our eco-systems, and plan our growth in a sustainable way.

7.22 According to reports, fifteen of the top 20 most polluted cities in the world are located in India. The deadly air pollution is not a problem restricted to just the metros. It is a national problem that is killing 1.2 million Indians every year and costing the economy an estimated 3% of GDP. For the sustainable green development of the country, controlling pollution has to be a priority. The abundance of green resources in the Indian Himalayan Region is a strong countervailing force against this rapid increase in pollution across the country. The contribution of expansive forest, flora and pasture in the IHR contributed significantly for the carbon sequestration and limits the pollution in the rest of the country.

7.23 As stated in chapter 2, there exists ample justification for economic incentive for stewardship of eco system services. As we have not exactly accounted for the services flowing out of these states and its contribution to the entire nation, to start with, we can give a weightage for the proxies representing these eco-systems. But forests are only a part of it, and it includes the water resources, biodiversity, the glaciers forming the perennial sources of these great rivers and other intangible contributions. Following the 'conservation ethic' with regard to natural resources management in the overall national and global interest, and the use disability and cost disability associated with conserving such a huge resource pool, we need to give a lot of weightage for the natural resources. **Accordingly we suggest that atleast 15% weightage to be given to total**

forest area including glaciers, alpine meadows, snow-capped areas etc. in terms of total forest.

7.24 Some of the Himalayan states consisting of international border, have to bear huge administrative and financial cost on account of ensuring safe border, to maintain higher level of forces to effectively deal with illegal activities including insurgency, terrorism, border fencing alongwith rehabilitation of displaced people and land use disability. **Hence, a certain weightage need to be given to states with international border. Also, keeping in mind the national security and trade, the Commission is requested to recommend to provide special funding for improving the connectivity to IHR.**

7.25 Some of the states of Himalayan Region have considerable area under the 6th Schedule, which are mostly, hilly, forested and under-developed. Socio-economic conditions of the people living in these areas is far below average. Hence, more investment will be required to develop these areas. Hence, it is requested that the 15th FC considers earmarking certain percentage weightage for such areas.

Suggested Devolution

Horizontal Devolution

a. A total of 30% of the horizontal devolution should be earmarked for the special category states.

Special Grants

7.26 According to a report titled "Composite Water Management Index "(CWMI) released by NITI Aayog in June, 2018, India is suffering from 'The Worst Water Crisis' in its history, with about 60 Cr. people facing high to extreme water stress and about 2 lakh people dying every year due to inadequate access to safe water. The report also noted that "By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual 6% loss to the country's GDP."

7.27 The Himalayas are water towers of the country, thus a forward looking performance grant should be provided for protection and conservation of river eco-system, its rejuvenation and also to improve river flow and water quality, which has trickle down effect on the entire northern subcontinent. All the

Himalayan states have submitted proposals for special grants and up-gradation grants in their respective Memorandums. As the infrastructure is deficient in these states, hence to improve service delivery and to ensure social & economic progress these projects need special consideration from 15th Finance Commission.

7.28 Changing population dynamics and increasing pressure on limited resources in the mountains is taking a toll on the sustenance of mountain cities. Due to limited accessibility, marginality, fragility and vulnerability, mountain cities and towns do not fit in the normal norms/guidelines/schemes for development. These mountain cities are like the rejuvenation centres for the people of the country, who come there for leisure, wellness and enjoyment. Most people visit these mountains to nourish and nurture their bodies and soul and the inflow is progressively increasing. In the IHR the tourist inflow is expected to double by 2025. The mountain cities also sustain a considerable population residing in these mountains. It is in our national interest, and in the interest of every citizen of this country that we preserve these mountain cities and towns. This cannot be viewed simplistically with the principle of cost-benefit analysis. These issues have been acknowledged internationally and CIP, ICIMOD and TMI have significantly increased their resources to deal with these issues. It is thus imperative, that we recognize this in our country, and **give Special Grants for sustaining these beautiful mountain cities, which cater to a significant population every year to resuscitate, revive and revitalize and is the home to the significant other.**

CHAPTER 8 : MINISTRY FOR HIMALAYAN DEVELOPMENT

8.1 Mountains constitute a different ecosystem from plain areas. They have comparative advantages like clean resources of water, energy, biodiversity etc. but they have also different requirements. It has now been well recognized that the interventions that ignore the imperatives of mountain specificities would invariably result in resource misuse and accelerated environmental degradation. This calls for evolving new paradigms of long-term conservation and sustainable development, which helps restoring intricate balance between economic interests and ecological imperatives in the region in particular and country in general. These requirements are not adequately recognized or properly understood and thus are not addressed in the policy formulations by the various Ministries. These policy gaps in every scheme of the Central Government are apparent when these policies are being implemented at the ground level. Many of these policies keep the unit cost as per the requirement of plain areas and thus it leads to non-utlization of resources by the Himalayan states because the unit cost does not reflect ground conditions. The cost of providing service or construction is way above the uniform cost stipulated in the policy/schemes/guidelines. This is also corroborated from various studies. A paper presented by Dr. Purnamita Dasgupta and Bishwanath Goldar[3] looked at the costs of provision of education, health and infrastructure in the mountains and found these to be an average of 2.5 times higher than those in the plain areas. The index notified by CPWD for construction in the remote locations and higher elevations also captures this disparity. But, there is no correlation between these indices and the unit cost notified in the schemes/policies. The policies do not take into consideration the uniqueness of the Himalayan terrain and the corresponding geographical requirements.

However, considering various factors which would be important while thinking of new paradigms, following observations on prevailing conditions need to be mentioned w.r.t. IHR:

(i) Low investment per unit of area,

[3] Dasgupta, Purnamita and Goldar, Biswanath. (2017). Costing for Elevation in Development Expenditure: Illustrative Evidence from India. Journal of Quantitative Economics, Springer doi:10.1007/s40953-017-0103-6, Journal of Quantitative Economics

(ii) Introduction of a technology (and after-effects) without proper assessment of local needs and priorities,

(iii) Isolated developmental efforts and absence of integrated management of natural resources,

(iv) Absence of synergies and linkages to maximize the benefits of several on-going schemes and programmes of the Governments

(v) Inadequate long-term studies to support ecological imperatives and economical interests in the region.

(vi) Absence of robust systems in procedure for collection & analysis of data.

8.2 The Himalayan areas are the Water Towers of the country and also provide invaluable eco system services to nation. But as pointed out in earlier chapters there is no data regarding the water resources and eco system services being provided by the Himalayan areas. There is no quantification, studies or accounting systems to capture the above contributions. Thus centralized data should be captured and the national accounting system should be accordingly modified.

8.3 Climate change is adversely affecting the entire country and its effects are more pronounced in the Himalayan region. Climate change is adversely affecting the water cycle, agriculture pattern and exacerbating the devastation caused by natural calamities. These changes need to be studied, documented and analyzed in detail. There is a general a big data gap regarding various aspects of the Himalayan region.

8.4 Recognizing the above and realizing that the Himalaya is important for Ecological Security of the country, the Government of India created the The National Mission on Himalayan Studies (NMHS), a Central Sector (CS) Grant-in-Aid Scheme, which targets to provide much needed focus, through holistic understanding of system's components and their linkages, in addressing the key issues relating to conservation and sustainable management of natural resources so as to improve quality of life and maintain ecosystem health in the region. But, now the need of the hour is to implement the findings of the studies and knowledge gathered so far and incorporate it in all policies. For meaningful and equitable development, it is important to bring about this change in every Ministry. The NITI Aayog has realized this policy gap and come out with a Himalayan Mission on Spring Water Management in Himalayas, National Mission/Program on Transforming Shifting Cultivation in NE states, along with demand driven network of skill and entrepreneurship development centers in

Himalayan states, consortium of institutions of high learning for mountain specific research and technology, and data collection, validation, authenticity for informed decision making at different levels of governance.

8.5 These specificities of mountain regions can be ably integrated across all sectors only if we have a separate Ministry, which ensures that all hill states are treated as per their geological requirements. For integrated preservation and development of all the Himalayan states, it is important to have such an institution. A Ministry for the Himalayan states would bring all the stakeholders in one platform, initiate necessary studies and discussion, act as a repository of data and issues concerning Himalayas, coordinate with various Ministries regarding incorporation of issues of Mountain areas in the policies of these Ministries and to bring out a holistic vision for development of these areas which are aligned with Paris Agreement, SDGs, Sendai Framework. The requirements of the Himalayan region requires in-depth studies, policy analysis and promulgation of suitable policies which will allow the mountain communities to sustain the eco-system services being provided by these sacred mountain chains and thereby ensuring prosperity and a healthy environment for the whole country. For preservation of the unique cultural and spiritual values of the Himalayan states and for inter state cooperation, which is required as the issues of concern of all these states are mutually interconnected, we need to strive towards a unified platform. The cross learnings and cooperation among these states would certainly increase the synergy and the outcome would be far more fruitful to the entire nation.


Govt. of Uttarakhand
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