

16th Finance Commission and the Indian States: A Perspective from Kerala

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Preface

Perhaps sociologists could find many similarities between the joint family and India's fiscal federal system. Like in any joint family differences and dissensions are an inevitable aspect of any federalism, and India is no exception. Although there is no magic solution to address the various issues involved, the creation of an interactive space for deliberations and discussions among different parties involved could be a plausible strategy. It is in anticipation of the plausible problems that the founding fathers of India's constitution provided for the Finance Commission, which could be considered one of the most significant institutional innovations in our constitutional history. It's a matter of great pride that the Finance Commissions have played a critical role in fostering India's cooperative federalism, inter-alia by creating an interactive space for the various stakeholders involved and thus helped hold India together

At this juncture when the 16th Finance Commission has been appointed, both the Union and the States are looking forward to its recommendations given their significant role not only in the fiscal health of states but also in furthering our Cooperative Federalism. Since the terms of reference of the 16th Finance Commission are set perfectly in sync with what was envisaged by the Constitution, the Finance Commission has to come up with its recommendations with due consideration to the contextual factors, as has been the case with its predecessors. The context of the present Finance Commission is distinctly different since this is the first one appointed after India articulated its vision of emerging as a developed economy by 2047 and the political leadership has explicitly acknowledged the key role of the states therein.

Shri K N Balagopal, Hon'ble Finance Minister Govt of Kerala and the Chairperson of GIFT, even before the appointment of the Finance Commission, encouraged GIFT to look at the various issues involved in India's fiscal federalism to broaden our understanding on the one hand and provide input for the memorandum of the State to be submitted to the 16th Finance Commission on the other.

GIFT has earnestly taken up the task. In this process, through a series of interactions we were guided by Shri K M Chandrasekhar former Cabinet Secretary Govt of India and the Distinguished Professor GIFT along with Professor M Govinda Rao, Member of the 14th Finance Commission and the Distinguished Professor of GIFT. GIFT organized a workshop on '16 Finance Commission and the Indian States: A Perspective from Kerala' jointly with the Kerala Economic Association. The workshop was inaugurated by Sri K N Balagopal. During the workshop, we immensely benefited from the feedback offered by the participants other than two of our mentors, Prof T M Thomas Isaac former Finance Minister Govt of Kerala, and the Distinguished Professor GIFT, Prof K N Harilal Chairman 7th State Finance Commission and Shri R Mohan (IRS Rtd), Honorary Fellow GIFT.

This report is presented in two parts. In the first part, we present the gist of the deliberations that took place during our workshop, highlighting various emerging issues in India's fiscal federalism. The second part provides our reflection on various issues in the realm of vertical and horizontal devolution along with those concerned about the distribution of grants in aid.

I take this occasion to place on record our sincere appreciation and thanks to our Chairman, Shri K N Balagopal, who has been the guiding spirit in the whole effort. Shri KM Chandrasekhar and Professor M Govinda Rao, spent their valuable time for providing us with their guidance and feedback. We also immensely benefited from the guidance of Prof TM Thomas Isaac, former Finance minister and Distinguished Professor GIFT. Shri R Mohan has always been an excellent sounding board with ideas. We are extremely thankful to Professor K N Harilal, who has always been a source of ideas and encouragement and facilitated the workshop in his capacity as the President of the Kerala Economic Association (KEA). We thank the members of the Executing Committee of KEA and faculty from different universities/colleges who participated in the workshop as discussants and helped us with their constructive feedback. We felt especially encouraged by active the participation of young scholars from different institutions including GIFT. While we would like to give the due credit to all those who have helped us with the ideas in this report, we take the blame for all the downsides.

To the extent that fiscal federal relations in India and the associated issues are so wide-ranging and deep-seated, we have no claim that this is the ultimate answer to any of the questions. However, we hope that this will provide a background for further work and some insights for those who are concerned about the issues being addressed in this report.

K J Joseph
Director, GIFT

Executive Summary

The 16th Finance Commission is the first one appointed in a specific historical context of Indian development wherein Vision India 2047 expounded by the NITI Aayog aims at transforming India into a developed economy by 2047. Accomplishing this vision, when the prevailing fiscal federal relations are presumably precarious, is contingent on harnessing the pivotal potential of states that calls for further strengthening India's cooperative federalism and improving the fiscal health of states. In this context, the recommendations of the 16th Commission, to be implemented from 1 April 2026 for 5 years, assume more importance than that of its predecessors. Given the growing concerns about the devolution of resources between the Union and the States, this report deals with certain issues inherent in India's fiscal federal relations and various concerns in the realm of vertical and horizontal devolution of resources.

Emerging concerns in fiscal federal relations

FRBM and the Vision 2047

The moot question for the 16 FC is the relevance Fiscal Responsibility Budget Management (FRBM) Act for a saving-constrained developing country aiming at catchup by increasing investment from the present level of 30% to at least 40%. With zero revenue deficit, why should India limit fiscal deficit to 3% if the investment of the borrowed funds ensures a return higher than interest and amortization? Hence the single most hindrance to Vision India 2047 appears to be the prevailing FRBM Act. Since what matters is not the extent of borrowing but the utilization of the borrowed funds, what India needs in the context of Vision India 2047, is perhaps a Fiscal Responsibility and BORROWING Management (FRBM) Act. In the present world of Information Technology (IT) and Artificial Intelligence (AI), the Central Government can monitor and ensure that the borrowing is effectively invested to ensure growth and fiscal stability. Given the Vision India 2047, the 16th Finance Commission shall ensure that FRBM coevolves to the context.

Growing Share of Cess and Surcharges

India's vertical fiscal gap has been high relative to other federations, reflecting the mismatch between revenue and expenditure decentralisation, and this has risen over time. Despite the Finance Commission's allocation of 41 percent of the divisible pool to the states, only 29 to 30 percent has been effectively shared. This discrepancy is largely due to the unprecedented increase in cess and surcharges. The share of surcharges and cesses to Gross Tax Revenue (GTR) of the Union, which was 9.5 per cent in 2013-14, rose to 14.8 per cent in 2023-24. The key point is not the percentage proposed by the Finance

Commission, but the actual amount received by states. The 16 FC shall ensure that the allocated percentages, such as 41% or 50%, are actually disbursed to the states without significant deductions, which have notably increased.

Centrally Sponsored Schemes

There is emerging trend wherein the share of conditional grants increases which cannot be linked from the prominence of CSS that often don't cater to the unique conditions of all states. In 2022-23, CSS transfers at Rs.3,46,992 crore exceeded the FC grants by over 100 per cent. To benefit from these schemes, there must be flexibility to adapt them to state-specific needs or to design and get approval for state-specific schemes. The current 60:40 funding ratio for centrally sponsored schemes should be reconsidered, potentially moving to a 50-50 or other more equitable ratio to alleviate the financial burden on states. Considering the genuine concerns of states, regarding the increasing share of CSS which is shown to be regressive and eroding their autonomy of states, there is an urgent need for the FC-XVI to address this issue in the interests of promoting cooperative federalism.

GST Related Issues

To the extent the GST-induced changes have a significant bearing on the fiscal health of the states, the Finance Commission shall undertake a comprehensive evaluation of GST's revenue implications and induce the GST council to explore feasible alternatives to bolster states' revenue generation capacities, ensuring a balanced and sustainable fiscal framework. In this context, the future GST reform agenda shall focus on improving the fiscal health and fiscal freedom of states. For improving fiscal health of the states, it is essential to ensure revenue neutrality which calls for ensuring the SGST share higher than IGST share. This is justifiable, especially in a context where states have surrendered a higher share of their tax revenue (52%) than that foregone by the Union (29%) for the establishment of the new tax regime. Secondly, instead of following a uniform rate across different slabs across states decided by the GST Council, there is the relevance of setting a markup rate above the uniform rate to be decided by the GST Council. The state legislatures shall retain the freedom to decide the exact mark-up rate to be imposed not exceeding the ceiling set by the GST council.

Institutional Architecture for Cooperative Federalism

Indian fiscal federalism operates within a challenging framework, marked by asymmetric power structures between the Union and states. While cooperation is essential, coercive dynamics often prevail. Key issues include the absence of robust intergovernmental institutions for negotiation and conflict resolution. Unlike in the context of a closed economy when the FC was established, in the present open and uncertain world, it is nearly impossible for the FC to come up with reliable forecasts of any fiscal parameters. Hence, there is a need for the relevance of a permanent institutional architecture to strengthening cooperative fiscal federalism.

Revenue Deficit Grant

In the absence of a realistic understanding of the contribution of a state, through its specialization in production and trade, towards the development of different stakeholders

in the fiscal federal system, especially to the Union and other States, Kerala has been faced with a double whammy. Kerala, through its specialization in non-tradable human capital, contributed positively to the development of the people of the State, that of other States and the Union. But it led to fiscal imbalance in terms of high revenue deficit and debt burden for the State. At the same time, Kerala's share in the divisible pool declined from 3.82% during the Tenth Finance Commission to 1.95% during the 15th Finance Commission. Hence the revenue deficit of Kerala is not comparable to that of other States wherein the deficit has been on account of their expenditure incurred for their own development exceeded their revenue.

The revenue deficit of Kerala is a price that it paid for its contribution towards the development of other stakeholders in the fiscal federal system in general and towards the generation of remittance income in foreign exchange for the Union. Having contributed Rs 2.16 lakh crore in 2023 towards India's foreign exchange reserve, Kerala is likely to contribute at least Rs 10 lakh crore in the coming five years for which hardly any subsidy eligible under the prevailing trade policy (7% of the net export earning) has been provided to the State. Hence the 16th Finance Commission shall provide for a revenue deficit grant to Kerala commensurate with its contribution to India's development.

Specific Issues in Devolution and Grants-in-aid

Vertical Devolution

In the context of the growing vertical fiscal gap, a case has been made to redefine India's divisible pool of taxes, addressing the vertical fiscal imbalance between the Union and States. The Union's Gross Revenue (GR) has grown at an annual rate of 12 percent, but the divisible pool hasn't kept pace due to rising cesses and surcharges, creating a 9-point gap between the share of the divisible pool in GR and Gross Tax Revenue. Therefore, the report recommends increasing vertical devolution from 41 to 50 percent for states to balance their fiscal objectives. This will partially offset the exclusion of cess and surcharges from the sharable portion. The Finance Commission could propose a flexible range for distributing net proceeds, based on cess and surcharge changes. Reducing cess and surcharge rates on income and corporate taxes can also benefit states without burdening taxpayers.

Horizontal Devolution

Income Distance

India's fiscal devolution, guided by the Finance Commission, faces a paradox: the income distance criterion, a major criterion in horizontal devolution, assumes higher per capita income correlates with greater tax capacity. However, empirical evidence reveals a declining tax base of the high-income states, driven by structural shifts favouring untaxed services and export-driven economies. This misalignment penalizes high-income states with reduced shares in the divisible pool, exacerbating horizontal imbalances. The study

advocates revisiting devolution criteria to balance equity with fiscal realities, suggesting reduction in weights for income distance to align with India's economic aspirations for 2047.

Attributing the major cause for the decline in the share of Kerala's share in the divisible pool to the income distance criterion, the report also recommends focusing on performance-based criteria, avoiding the multiplicative effect of population, to better reward states like Kerala. Additionally, the report advocates reducing the weightage on income distance and considering a combined measure to ensure a fairer allocation of tax shares.

Demographic Factors

Highlighting the fiscal challenges on account of the demographic transition with an increasing share of old aged population and the associated income loss and expenditure commitment, a proposal has been made for an adjustment to the Finance Commission's devolution formula by incorporating a 5% weightage for the population aged 60 and above. This "population aging" variable accounts for varying aging rates across states, aiming to mitigate inequities in fiscal resource allocation. Analysis shows a slight increase in the share for states with larger elderly populations, reflecting demographic realities wherein geriatric cost is more than pediatric cost. While the adjustment minimally impacts overall fiscal transfer progressivity, it serves as a viable alternative to the existing mechanism, ensuring fairer resource distribution amidst demographic shifts and acknowledging the evolving needs of an aging population. While adjustments in demographic performance show marginal benefits, targeting the old-age population or dependency ratio would significantly increase Kerala's share. It also suggests alternative compensation methods, such as grants for old-age care.

Cost Disability

It is presumed that the larger states are confronted with cost disability in the provision of public services. Accordingly, area of the state is considered as a factor in devolution. The report argues that the smaller states also have serious cost disadvantages that deserve the attention the Finance Commission. For example, it is shown that while the average cost of constructing a four-lane highway in India is around ₹30 crore per kilometer, in Kerala, it is more than three times the national average, estimated approximately at ₹100 crores. This is on account of the high-cost land, labour and other associated costs. To the extent that the density of population is the crucial underlying factor, a case has been made for providing an appropriate weight to population density while considering the cost disability.

Rewarding Contribution to National Development

While addressing the issue of horizontal devolution in the context of Vision India 2047, the Finance Commission has to be cognizant of the differential role that the States play in Indian development. Some States, through their specialization in production and trade create a positive outcome for their development and that of all the other stakeholders in the fiscal federal system, but some other states while their specialization generates positive development linkages for other stakeholders in the system, it turns out to be at

the cost of their fiscal imbalance. In a context wherein States make the call for horizontal devolution according to their contribution to national development, we make the case for the construction of an Index of State-level Contribution to Indian Development (ISCID) which should receive the highest weight in the distribution of divisible pool among the States, instead of the distance in per capita income which has serious limitations.

In the present Indian context, the issue of equity cannot be relegated to the back seat. The aspirational India, therefore, demands a new strategy of walking on two legs - rewarding performers instead of penalizing them, while handholding the laggards.

Issues in Grants-in-aid

State Disaster Response Fund (SDRF) Allocation

The report critically identifies significant deficiencies in both the criteria and methodology for the State Disaster Response Fund (SDRF) allocation. The methodology currently used by the Finance Commission deviates from the established principles of disaster risk theory. The parameters for fund distribution—population, geographical area, and Below Poverty Line population disproportionately disadvantage states that have effectively managed demographic and poverty reduction efforts, inadvertently penalizing high-performing states. These parameters are largely irrelevant to the specific needs of disaster response funding. Besides, the existing measure of vulnerability, which predominantly focuses on poverty, fails to adequately reflect the vulnerability to specific natural disasters. The report proposes revised parameters for fund allocation, including population density and specific geographical features such as wetlands, hilly areas, and coastal length. It also advocates for the replacement of the poverty-based vulnerability measure with a comprehensive disaster vulnerability index.

Grants to Local Self Governments

Union Finance Commission grants to local governments calls for increasing the overall funding to local governments in India during the 16 UFC period in view of the rising importance of local governments in India. There is the need for expanding the criteria guiding devolution of grants by including index of devolution, proportion of aging and revenue effort, as it is more inclusive than taking merely the head count of the population and area. To provide policy emphasis to the rising urban sprawl across the country, it is essential to alter the ratio of RLB to ULB. We also suggest that UFC grants to local bodies should not be extensively tied and local bodies should be permitted to use funds suiting their developmental requirements as enshrined in the Twelfth Schedule to adhere to the spirit of participatory planning, decentralised governance, devolution and the ideals of equity and efficiency.

Grants for Tribal Development

Tribal development remains a critical national priority, with Kerala showcasing relatively higher socio-economic indicators for its tribal communities compared to other Indian states. However, significant challenges persist, including socio-economic disadvantages among specific tribal communities, geographical isolation, and environmental degradation. These issues contribute to the relative deprivation of Kerala's tribal population compared to the general populace. Addressing acute infrastructure deficiencies and sustaining existing developmental achievements require focused financial support. In alignment with the Union Government's Vikasit Bharat Agenda, enhanced grant-in-aid under Article 275(1) of the Indian Constitution is imperative for Kerala. Leveraging its robust governance framework, Kerala is uniquely positioned to implement targeted schemes for the rapid and inclusive development of its tribal communities, ensuring their equitable participation in the state's socio-economic progress.

Grants for Promoting Innovation

Past episodes of economic development indicate that no country became a developed economy without investing substantially in science, technology, and innovation. Although India has explicitly recognised the role of innovation in development evidenced by science, technology and innovation policy statements, the share R&D expenditure in GDP (R&D intensity) has been showing a downward trend from about 0.8% in 2009-10 to 0.64% in 2021-22. During early 1990s, R&D intensity in China was lower than in India, but today it is more than three times that of India. While the states have a key role in promoting science, technology, innovation, and entrepreneurship, states' R&D intensity is only about 0.3% of the GSDP. We make the case for raising this ratio to at least 0.6% by 2030–31 to ensure an innovation and knowledge-driven development. On these grounds, we make the case for an allocation of Rs 13,471 Crore as grants in aid for the five years which works out to about 0.53% of the innovation related grants in aid to be given to all the states..

Introduction

India's fiscal federalism, like in most other federations has always been a fertile ground for discourses and dissensions with respect to the distribution of financial resources between the Union and the States. At the core of the tension is the inequality between the Union and Sub-national entities in terms of the division of responsibilities and revenue entitlement as envisaged in the constitution of the country. It is in anticipation of such issues that the constitution also provided for the establishment of the Finance Commission with the mandate of addressing issues in the realm vertical and horizontal inequality in the distribution of financial resources between the Union and the States in particular. While the former is concerned about the determination of the size of the divisible pool to be shared with the States, the latter addresses the issues with respect to the division of the divisible pool across different States. The Planning Commission, although not a constitutional entity, also played a significant role in addressing various issues in our fiscal federalism until its abolition in 2014.

So far, 16 Finance Commissions have been appointed including the present one. All the past 15 Commissions through their recommendations made their notable contributions in fostering a cooperative federalism that we take pride in. It was accomplished through their concerted efforts towards having a deeper understanding the fiscal health of the Union and the States and by articulating the imperatives of the immediate future inter alia by a process of democratic consultations with all the stakeholders. Although it is not mandatory on the part of the government to accept all the recommendations made by the Finance Commissions, going by the available evidence, governments in general have accepted their recommendations. The Finance Commission, however, is a transient institution that ceases to exist once the recommendations are made for the five years, which are to a great extent based on their projections about the future. Given the highly unpredictable world of today, the chances of their predictions deviating from the reality, despite their best efforts, cannot be ruled out that puts the States (and also the Union) in difficulty. This has nothing to do with the competence of the Finance Commission. Instead, making precise projections for five years in the present open and uncertain world is almost an impossible task, to say the least. For example, the 14th Finance Commission projected that the total taxable revenue available from the divisible pool for Kerala would be of the order of Rs 25869 crore. But due to factors beyond the control of the Finance Commission, the actual amount received has been only Rs 16401 crore (only 63.4%) as reported by Karthik and Christabel (2024) . Although the demand for a permanent institutional architecture inter alia for monitoring the implementation of recommendations has been made by scholars of eminence (Rao 2020) , it is yet to receive the attention that it deserves.

The 15th Finance Commission observed that India's vertical fiscal gap has been high relative to other federations, reflecting the mismatch between revenue and expenditure decentralisation, and this has risen over time. It further observed that while the States account for about 62% of the expenditure responsibilities, their revenue entitlement is limited to 37% which could be seen as being at the root of the problem. Given India's relatively high heterogeneity across States the horizontal fiscal imbalance at the sub-national level is a critical determinant of the fiscal capacity of states to provide basic public goods. During the COVID 19 pandemic, the differentiated health capacities to address the health crisis exposed the serious deficit in accomplishing the declared objective of the Finance Commissions to ensure the equitable provision of public services across different subnational entities at comparable cost.

The 16th Finance Commission and the Aspirational India

The recommendations of the 16th Commission, to be implemented from 1 April 2026 for 5 years, will be having crucial bearing on the fiscal health of States. Its terms of references, unlike in the case of 15 Finance Commission where in it was expected even to review a recommendation made by its predecessor (14 the Finance Commission), are well within the constitutional framework. Having unequivocally set the constitutional context, the 16 Finance Commission could make its recommendations in consultation with the States by duly considering the contextual aspects.

The 16th Finance Commission has been appointed at a specific historic context of Indian development wherein the ambition of transforming India to a developed economy by 2047 – Vision India 2047 – has been expounded by the NITI Aayog. At present India is the 5th largest and the fastest growing economy in the world. By 2029 India is expected to overtake Germany and Japan to become the third largest in the world . As per the World Bank criterion, India at present is a lower middle income country. The per capita income should cross \$4,095 to join the middle income group and overcome the challenges of middle-income trap, that today's middle-income countries are trapped in, to become a high income county with a per capita income exceeding \$12,695. In 2022, in terms of nominal PCI India's position was 142 among the 197 countries in the UN Charter. In terms of PCI in PPP, India ranked 120 (\$8379) when the world PCI was as high as \$20645. India holds first position in global multidimensional poverty index, Ranks 140 out of 156 in global gender gap index, its rank in HDI is 132 out of 191 and in SDG index the rank is 121 out of 163.

Govinda Rao (2024 among others) rightly argued that the challenge of achieving such an aspirational target is daunting. To him PCI will have to increase by 5-fold to join the group of developed countries. Hence the economy will have to register an annual PCI growth of 7.5% in the next 25 years and the GDP growth of about 9-10%. Growth will have to be inclusive to employ two million persons added every year to the labour market and those released from low productive agriculture and unorganized sectors into more productive high-paying jobs. These objectives require a substantial increase in investment from the present level of 30-31% of GDP to about 40% and significant increases in productivity inter alia through innovation to reduce the Incremental Capital

Output Ratio (ICOR) from the present level of about 5. The needed investment however is not feasible with the present level of savings.

In this context, there are at least two issues that deserve attention. First one relates to the state science and technology for reducing ICOR through innovation which we shall take up in a later chapter. The second issue pertains to the prevailing regulations aimed fiscal stability as manifested in the Fiscal Responsibility and Budget Management (FRBM) Act that has been effective from 2024. The FRBM Act stipulates that the revenue deficit shall be zero while maintaining fiscal deficit at 3%. Evidence suggests that even after 20 years it remains as a moving target which the Union could adhere to only in one year and many states failed to comply with and those succeeded were able to do so only at the cost of growth and welfare of the people on account of the cut in investment. The moot question is the relevance FRBM Act for a developing country aiming at Catchup? According to the theory of low-level equilibrium trap (Nelson 1956 and others) a country is poor because its income is low leading to low saving and low investment and results in low income. Scholars like Govinda Rao made the case for increasing investment from the present level of 30% to 40%. Given the low savings the only option is to borrow while FDI has its obvious limits.

The obvious question is why a developing country, constrained by domestic saving, once managed to eliminate revenue deficit be constrained to borrow only 3% of the GDP for investment. Why should a developing economy be concerned about the extent of borrowing if the resultant investment ensures a rate of return higher the commitment on interest payment. Hence the single most hindrance to Vision India appears to be the prevailing FRBM Act. To the extent that what matters is not the extent of borrowing but the utilization of the borrowed funds, what India needs in the context of Vision India 2047, is a Fiscal Responsibility and BORROWING Management (FRBM) Act in place of the Fiscal Responsibility and Budget Management (FRBM) Act. In a world of Information Technology (IT) and Artificial Intelligence (AI), it is possible to for the Central Government to monitor and ensure that every Rupee borrowed is effectively invested to ensure growth and fiscal stability. Given the Vision India 2047, 16th Finance Commission shall ensure that FRBM coevolves to the context.

At the same time the political leadership of the country has explicitly stated that “India grows when the States grow” (or India can become a developed country if and only if the States become developed). Hence, if the States do matter for India’s development; Finance Commission does matter for the State’s development especially when it has a key say in about 42% of the revenue receipts of Indian States received from the Union. In such a context, it is important to reckon with the well-acknowledged role of institutions (rules, laws, customs, traditions, beliefs and practices, among others) including those pertaining to the FC in shaping development. It has also been argued that institutions need to co-evolve with changing contexts (Freeman and Perez, among others) and therefore any inertia for co-evolution could turn out to be inimical to the development.

As already noted, different FCs have been co-evolving and were successful in accomplishing their constitutional mandates in a commendable manner that contributed significantly to the health of India’s fiscal federalism. However, there are spheres wherein

coevolutionary process could be further augmented. The context in which the Finance Commission came into being is entirely different from what we are confronted with today. The Finance Commission, when formed, was essentially concerned about ensuring the equitable provision of public goods across all the States in the country at a comparable cost, at a time when the central concern of the country was in addressing basic development issues and development divides. Today, with Vision India 2047, the task before the 16th Finance Commission is more challenging than its predecessors. It has to address all the conventional concerns confronted by its predecessors while help achieving the vision when the prevailing fiscal federal relations are presumably more precarious than ever before. In this context the recommendations of the 16 FC assume added significance for the health of India's fiscal federalism on the one hand and achieving Vision India 2047 on the other.

At the same time, given the growing vertical imbalance, as already acknowledged by the 15FC, the States in general are demanding a hike in the share of States in the divisible pool from the present level of 41% to 50%. It was also justified on the ground that the effective share received by the States is much lower on account of the growing reliance of the Union on cesses and surcharges which are not a part of the divisible pool. The share of surcharges and cesses to Gross Tax Revenue (GTR) of the Union, which was 9.5 per cent in 2013-14, rose to 14.8 per cent in 2023-24. Given the new vision it has also been argued that distribution of the divisible pool has to be in sync with their contribution to the national economy to harness the potential of States in achieving the national vision. The key issue is how to understand the States contribution? The often used approach regarding the State's contribution in terms its contribution to Union's tax revenue, appears to be a narrow accounting approach and inappropriate from a development perspective. What is the way out?

States and India's Development: A New Perspective

The development of India, from a systemic perspective given its cooperative fiscal federal system, is contingent on the actions, interactions, and the resultant linkages between the key actors/stakeholders in the system. Broadly the stakeholders are a). Union Government 2). State Governments c). People of a particular State and d) People of other States. Of these four the States and the Union are at the centre stage of our discussion for the present purpose.

In any economy the institutions, both endogenous and exogenous, along with their endowments, natural and created, shape the broad patterns of specialisation in production and trade. Since one crore rupee worth of potato chips is different from one crore rupee worth of microchips in terms of their potential contribution to development, such specialisation does matter in development. In the case of subnational economies that operate within a fiscal federal system, the nature of their specialisation shape their economic prospects and their interactions and linkages between different actors therein. This is bound to have its bearing not only on the actual and potential development of the State concerned, but also on its actual and potential contribution to the development of other stakeholders in the fiscal federal system. Based on the nature of specialisation, we may divide the Indian States into two broad types;

Type I States: those specialise in the production of goods, including primary commodities, manufactures, minerals etc, which are by their very nature tradable.

Type II States: those specialise in the production of human capital, which is non-tradable

The tradable in general are taxable, though at varying rates, and add to the revenue receipts of the Type I States. Non-tradable like human capital are non-taxable and do not contribute directly to the tax revenue of Type II States. Such specialization by each State could be construed as leading to differential contribution to (a) fiscal health of the State Government concerned (b) fiscal health of the Union (c) development of the people of State concerned, and d) development of the people of other States.

Type I States, by specialising in tradable, generate employment and income earning opportunities for the people of the State (and also those migrate to such States) and thus contribute to their development and welfare. The State Government concerned is benefited as the tradable contribute to its revenue receipts by way of the taxes paid by the enterprises engaged in the production process. Production of tradable also lead to tax revenue accrual by the Union by way of excise and CGST thus working towards the fiscal health of the Union. By supplying goods (eg. machinery) to other States and generating employment opportunities for the migrants they also contribute to the development of other states. All the Actors of the fiscal federal system thus derive development linkages and get benefited on account of the specialisation of the type I States.

Type II States are the ones specialise in non-tradable (say, human capital) which by their very nature are not saleable and taxable. Being mobile they migrate to other countries and other States in the country. Those migrate abroad get better employment and income earning opportunities and contribute to their household income by way of remittance which are exempted from income tax. With this windfall gain, the people of the type II States are better off. Since those migrate abroad make remittance in foreign exchange the Union is also benefitted as the remittances help reducing the current account deficit and building foreign exchange reserves. The union is also benefitted by the income tax paid those engaged in the production of human capital. Human capital that migrates to other states, as they embody knowledge which is considered as the most important resource of the modern economy, contributes to the development of those States; hence other States are also able to derive the positive return from the specialisation of type II States. But what about the State Governments of the Type II States? They are worse off because, unlike the physical capital, the production of human capital doesn't make any direct contribution to their revenue receipts by way of taxes, while they contribute to the Union by way of income tax. Hence it could result in fiscal stress if the investment in education and health, which is a pre-requisite for their specialisation is financed through borrowing. Given the limited direct contribution towards the revenue receipts and the increased committed expenditure, towards salary, wages and pension and interest payment on the borrowed funds, the Type II States could be faced with fiscal imbalance manifested in higher deficit and debt.

From the above it could be inferred that, type I States through their specialization creates positive outcomes for its development and that of all the other stakeholders in the fiscal

federal system. But in the case of Type II States, while their specialization creates positive development linkages for other stakeholders in the system, it turns out to be at the cost of their fiscal imbalance. Hence, while addressing the issue of horizontal devolution the 16 Finance Commission has to be cognizant of the role that different States play in Indian development. This is especially important in the context of Vision India 2047.

Case of Kerala

Viewed from the above perspective, Kerala is a type II State which specialised in the production of human capital that is not tradable and taxable. Being mobile the human Capital migrated to other countries and to other States in the country. As per the Kerala Migration Survey (GIFT 2024) 2.2 million Keralites have migrated to 183 of out of 197 countries in the world. Their total remittance is estimated at about Rs 2.16 lakh crore in 2023, the highest by any State in the country. Thus Kerala with 2.76% of the population of the country contributed about 23% of the total remittances. Studies have shown that the migration-led “resource movement effect” and the remittance-induced “spending effect” have had strong adverse effect on the growth of tradable sectors including agriculture and manufacturing in Kerala Harilal and Joseph (2001) and Balakrishnan (2000) .

Evidently the remittances made the Union better off at least in the following ways. Although the production of human capital did not directly contribute to the tax revenue of the state, it contributed to the tax revenue of the Union by way of income tax. The out migration of human capital and the substantial remittances therefrom, evidently, helped the Union improving the Current Account Balance of the country and building the foreign exchange reserve. When it comes to the people of Kerala, they benefitted undoubtedly as the migration of human capital led to higher household income and higher consumption (Subramanian and Prasad (2008) Kannan among others). Other States also benefitted because of an estimated 2 million highly skilled migrants to other States contributed towards the development of those States.

Thus Kerala model is one that contributed positively to the development of the people of the State, that of other States and the Union. But it came at a high cost to the State. The type of specialisation that evolved mainly at the instance of the State entailed substantial public expenditure in the Public Private Participate (PPP) mode. Given the inherent adverse effect of the specialisation on the revenue receipts of the State the investment requirement had to be met from borrowing. Today, about 57% of Kerala’s revenue receipts is on salary/ wages and pension of which over 59% is by way of salary for the teachers which is the prime cost in the production of human capital. For obvious reasons, the State is also among the ones with high debt burden. The observed outcome also needs to be seen against the fact that although India’s trade policy provides for various direct and indirect subsidies for export-oriented sectors and service exporters today receive 7% of their net earnings, Kerala’s export-oriented human capital sector has not been in receipt of any subsidies from the Centre. More importantly, notwithstanding its significant contribution towards the development of other stakeholders in the fiscal federal system, the share of Kerala in the divisible pool declined steadily from 3.9% in the 10th FC to 1.9% in the 15th FC. Thus viewed, any inquiry into the sustained deficit and debt of the

State will lead to the door steps of the particular specialisation in production and trade evolved in the State and the limitations inherent in the devolution criteria followed by the different FCs.

From the above discussion it could be discerned that while Kerala is indeed an engine of India's development. While there are other such engines in the country, they are to be located for the 16th Finance Commission to honour the requests of the States and facilitate a development-oriented horizontal devolution. This calls for the construction of an Index of State-level Contribution to Indian Development (ISCID) which should receive the highest weight in horizontal devolution, instead of the distance in per capita income which has serious limitations as we argue later in this report. At the same time, the issue of equity cannot be relegated to the back seat. The aspirational India, therefore, demands a new strategy of walking on two legs - rewarding performers instead of penalizing them, while handholding laggards. Perhaps it is high time to reflect on the relevance of a paradigm shift from of "always Carrot" to "Carrot and stick"

Revenue Deficit Grant

A horizontal devolution that satisfies all the subnational entities in a country which is as diverse as India is almost an impossible task. It is in this context that the Article 275 of the Indian Constitution provides for post devolution grant, including Revenue Deficit Grant from the consolidated fund of India. Here we emphasize that revenue deficit of Kerala is not comparable to that of other States because of its underlying contributory factors. Kerala's revenue deficit is a price that the State paid for the development of other stakeholders in India's fiscal federal system while that of other States could be an outcome of its excess spending over its revenue receipts for its own development. Presumably, this is what induced the 15th Finance Commission to recommend the highest revenue deficit grant of Rs 37,000 crore for Kerala. Going by the past trend, Kerala is likely to contribute at least Rs 10 lakh crore by way of remittances during the 16th Finance Commission period which entitles the State for an unclaimed export subsidy of Rs 70,000 Crore as per the prevailing trade policy. To the extent that the revenue deficit of the State could be construed as the price that paid for its contribution towards the development of other stakeholders in general and towards the generation of remittance income in particular the 16th Finance Commission shall provide for a commensurate revenue deficit grant for Kerala.

Apart from these general issues, there are a number of specific issues in the realm of vertical devolution and horizontal devolution of the divisible pool on the one hand and the provision of grants in aid from the consolidated fund of India on the other. These issues are dealt with at length in the forthcoming chapters.

PART I
Reflections from a seminar

Changing Contours of Fiscal Federalism and Kerala's Unique Developmental Challenges¹

Sri. K N Balagopal
Hon'ble Finance Minister
Government of Kerala & Chairman, GIFT

As the Sixteenth Finance Commission visits various Indian states, it is crucial to deliberate on the evolving contours of fiscal federalism and highlight the fiscal challenges states face amidst a changing macroeconomic landscape. The Commission's primary role is to advise the central government on strengthening Centre-State financial relations, ensuring a balanced partnership.

Reflecting on India's unique union, it is important to remember that 75 to 77 years ago, the country was composed of small, diverse entities with different growth rates, languages, beliefs, and food habits. Despite these differences, the Constitution and shared interests have held the nation together, highlighting the importance of cooperative federalism, with fiscal federalism being a key aspect. However, the tendency of different governments towards centralization has weakened Centre-State relations, adversely affecting overall unity. For a healthier nation, a balanced Centre-State relationship and a fair division of financial powers are necessary.

The Fifteenth Finance Commission, for the first time, used the 2011 census data, whereas earlier commissions used the 1971 population data. This change reflects shifts in population numbers. Interestingly, the United States, which has the largest federal structure, still uses the same old representative laws. While political reasons can explain such differences, the focus in India is on the need for fair and balanced fiscal federalism. Kerala has effectively managed its population growth, and considering current population figures would lead to notable changes in financial allocations.

Despite the Finance Commission's allocation of 41 percent of the divisible pool to the states, only 29 to 30 percent has been effectively shared. This discrepancy is largely due to the increase in cess and surcharges from 10 to 23 percent, which are not part of the divisible pool. States are responsible for around 63 percent of total expenditure but only receive 37 percent of the revenue, leading to an imbalance that remains unaddressed by the Finance Commission.

Focusing on Kerala's financial situation, the revenue deficit grant has varied significantly over the past five years, starting from around ₹15,000 crore, rising to ₹19,000 crore, then dropping to ₹13,000 crore, and now standing at ₹4,000 crore, with no allocation for the current year. This inconsistency raises concerns about the

¹ Extract based on the inaugural address delivered on 18 October 2024 in the seminar 'The 16th Finance Commission and Indian States: A Kerala Perspective' organised by GIFT

accuracy and fairness of the calculations. Kerala's share in the divisible pool has seen a dramatic decline from 3.82 percent during the Tenth Finance Commission to 2.5 percent during the Fourteenth Finance Commission, and further to 1.952 percent in the 15th Finance Commission, accounting for a 50 percent decline. This reduction translates to a loss of approximately ₹24,000 crore annually. In addition to that, grants for local bodies, natural disasters, and revenue deficits have also seen reductions. The share for Panchayats decreased from 4.5 to 2.5 percent during the period.

The underlying reason for this decline is Kerala's development, particularly in terms of population control and improvements in health, education, and life expectancy. Despite these achievements, Kerala finds itself penalized for its performance. This issue transcends political parties and governments, highlighting that success and development are unfairly punished, posing serious challenges to the fiscal positions of states.

Kerala's financial challenges are uniquely complex, with the state addressing second-generation developmental issues and more advanced socio-economic problems. Strengthening fiscal federalism and ensuring equitable financial resource distribution is crucial. Kerala's development model stands out, despite relatively low income levels, due to its equitable wealth distribution surpassing that of many other states. While states like Karnataka exhibit higher income levels, Kerala's overall developmental indicators are more favourable compared to the national average. Penalizing Kerala for its developmental achievements remains a principal factor behind its diminishing share in the divisible pool.

State performance is typically assessed based on expenditure and income generation. During 2016-21, Kerala's annual expenditure was approximately ₹1,13,000 crore. Despite the COVID-19 economic slowdown, subsequent government expenditure did not decrease. Over the past three years, annual expenditure rose to ₹1,60,000 crore, an increase of ₹47,000 crore, mainly due to pay revisions, pensions, and social welfare measures, excluding the Kerala Infrastructure Investment Fund Board (KIIFB) accounts.

Kerala's substantial expenditure is undeniable. The question arises: how is such expenditure managed amidst declining income? State tax revenue increased from ₹47,000 crore in 2021 to ₹74,000 crore last year, indicating substantial growth. Tax income grew by approximately 23 percent for the initial two years, but restricted taxation powers limit expenditure capacity. During the COVID-19 pandemic, borrowing was permitted up to 5 percent of the Gross State Domestic Product (GSDP), now reduced to 3 percent by the Central Government, NITI Aayog, and the Finance Commission.

Initially, GST compensation was available but has been discontinued. The Finance Commission recommended continuing compensation, yet it has not been implemented, causing Kerala to lose approximately ₹12,000 to ₹13,000 crore annually. The anticipated 14 percent growth rate has not been met. Although state Own Tax Revenue increased from ₹47,000 crore to ₹74,000 crore, expenditures surged from ₹1.13 lakh crore to ₹1.6 lakh crore, while the Centre's share diminished. The cessation of GST compensation and inclusion of KIIFB in

borrowing limits led to an annual loss of ₹12,000 crore in borrowing capacity. Despite the government's best efforts, these challenges persist.

Kerala's Gross State Domestic Product (GSDP) constitutes 3.8 percent of India's GDP, a slight decline from its previous 4 percent. Despite this, Kerala's share in the divisible pool is merely 1.9 percent. Although these figures are not directly comparable, they highlight a significant imbalance. Kerala contributes 4.5 percent of the nation's total tax revenue, whereas Uttar Pradesh, which accounts for 8 percent of India's GDP, receives 18 percent of the central tax share, with Bihar showing a similar pattern. While every state requires support, these significant imbalances necessitate attention. The Finance Commission must acknowledge Kerala's unique challenges, including second-generation issues and a distinct demographic shift. Migration further complicates Kerala's financial landscape.

India is progressing towards becoming the world's third-largest economy; however, the nation's per capita GDP remains significantly lower. Kerala's population growth rate is stagnant relative to the national average. Insights from a parliamentary working group on population issues highlighted Kerala's unique demographic challenges. Historically, approximately 600,000 children enrolled in schools annually in Kerala, a figure that has since declined to 300,000. Nationally, 7 percent of the population is aged over 60, whereas in Kerala it is as high as 20 percent. Consequently, geriatric concerns in Kerala surpass paediatric concerns, necessitating more geriatric specialists and expenditure. This demographic reality underscores Kerala's distinct socio-economic challenges. To elucidate, just as coconuts and peanuts both produce oil but have significant differences, Kerala's situation is uniquely distinct. This is fundamentally an economic and demographic matter.

Kerala's villages are experiencing depopulation, and costs are escalating. For instance, the Kerala government must cover 25 percent of the land acquisition costs for constructing the national highway. Due to high population density, land costs are steep, necessitating an allocation of ₹6,000 crore. A request for an increase in the borrowing limit to manage this was not approved. Additionally, Kerala does not receive a share of the toll revenue. In other states, road construction costs approximately ₹30 crore per kilometre; in Kerala, it costs ₹100 crore due to high land and labour costs. Environmental issues further complicate matters. While strides have been made in reforestation, this has led to increased man-animal conflicts. Nonetheless, there is a commitment to protecting biodiversity and addressing these challenges. All these factors need to be recognized.

The recommendations of the newly constituted Finance Commission will apply to the next government, but this does not absolve the current administration of its responsibilities. The introduction of GST has had a profound impact on state finances. Although implemented by the BJP government, it had the support of the previous Congress government. Serving on the select committee on GST revealed that GST significantly impacted fiscal federalism. State finance ministers now seek financial assistance from the Centre, metaphorically with begging bowls in hand.

Kerala's consumption is higher than the national average, contributing 4.5 percent of India's total tax revenue. Prior to GST, Kerala's tax revenues were growing by

14 percent annually. The former finance minister, Arun Jaitley, assured states that GST compensation would be provided at a Revenue-Neutral Rate (RNR) of 14.5 percent. However, in practice, the RNR stands at less than 11 percent, leading to a loss of nearly one-third of Kerala's tax revenue.

A study conducted to inform rate rationalization highlighted key findings. The 6 percent GST rate was reduced to 5 percent, and to compensate, certain items were moved to the 28 percent slab. However, many items were later removed from the 28 percent slab for political reasons, negatively impacting Kerala's revenues. Former finance minister Thomas Isaac raised this issue during a GST Council meeting. A study on 25 items moved from the 28 percent tax slab to lower slabs showed no price reductions for consumers, only increased profits for producers. The Anti-Profiteering Authority, before merging with the Competition Commission of India (CCI), conducted similar studies. However, the CCI stated it cannot address such minor issues.

Kerala's share of the divisible pool has halved, leading to an annual loss of approximately ₹24,000 crore. Additionally, borrowing limits and the cessation of GST compensation have caused a further ₹20,000 crore loss, totalling around ₹54,000 crore annually. Mounting expenditures, such as the pending DA payment and other committed liabilities, exacerbate the situation. Kerala is one of the few states that implemented pay revisions even during the COVID-19 pandemic. However, this shrinkage in fiscal space will severely impact the ability to invest in development projects. While direct tax revenues have increased nationally, Kerala has not benefited from this. Although the corporate tax contribution may be modest, overall tax contributions from Kerala have risen, yet there is no corresponding financial benefit.

Concerns about Centrally Sponsored Schemes (CSS) are also raised. These schemes lack the flexibility to accommodate the unique needs of different states. Many CSS programs are irrelevant to Kerala—for instance, adequate toilet facilities and quality schools are already in place, rendering certain schemes inapplicable. Furthermore, CSS funding comes with numerous conditions, and a 'one size fits all' approach is ineffective. Kerala faces specific challenges, including ecological issues, an aging population, migration, and return migration, which need to be addressed separately.

The recent Nobel Prize underscored the importance of institutions in development, particularly their political and democratic functions. This raises an important question: how can institutions be broadened and strengthened? A society can only progress when its people are thriving and enjoying a sense of well-being. It is imperative that the state's unique issues are collectively brought forward for consideration.

Possibilities and Fairness in Finance Commission Devolution: Issues before the 16th Finance Commission²

Shri K M Chandrasekhar
Former Cabinet Secretary, Government of India
Distinguished Professor of GIFT

1. Vertical Devolution and the neutralising effect of cesses and surcharges

In the context of the 16th Finance Commission being appointed for making recommendations on the finances of the center and the states for the period 2026-31, the discussion on vertical devolution revolves around some possible scenarios regarding financial devolution to states. The key point is not the percentage proposed by the Finance Commission, but the actual amount received by states. While the Finance Commission may allocate 41% share of the divisible pool, states often receive significantly less due to deductions like cesses and surcharges, which in fact have increased from 10% in 2011 to over 20% in the current phase. The concern is that even if a higher percentage like 50% is proposed, and if the center provides 30% to the levy of cesses and surcharges, then the higher percentage of the divisible pool is meaningless. Therefore, the critical issue to address is ensuring that the promised share is actually given to the states. Therefore, the key point to emphasize to the Finance Commission is the necessity for states to receive what is promised in the vertical devolution. It's crucial to ensure that the allocated percentages, such as 41% or 50%, are actually disbursed to the states without significant deductions, which have notably increased.

2. CSS - Question of state's requirements and changing modalities

Moreover, centrally sponsored schemes often don't cater to the unique conditions of all states. To benefit from these schemes, there must be flexibility to adapt them to state-specific needs or to design and get approval for state-specific schemes. The current 60:40 funding ratio for centrally sponsored schemes should be reconsidered, potentially moving to a 50-50 or other more equitable ratios to alleviate the financial burden on states. In this aspect, the states are also squeezed by having to contribute significant shares to the centrally sponsored schemes while also receiving less than the promised amounts in vertical devolution. This issue also needs to be strongly addressed by the 16th Finance Commission to ensure fair financial support for all states.

² Extract based on the presidential address delivered on 18 October 2024 in the seminar 'The 16th Finance Commission and Indian States: A Kerala Perspective' organised by GIFT

3. Beyond the current devolution criteria in horizontal devolution

When addressing horizontal devolution, it is important to note that the same parameters - per capita income, population, and area; are used repeatedly, which is resulting in the same set of states, often referred to as BIMARU states, receiving about 75% of the total funds. While regional disparities need to be addressed, dedicating 75% of resources to these states may not be fair to other states.

Per capita income is a significant factor, accounting for 45% of the devolution. However, it is a poor measure of growth since it often reflects income concentration among the top 1-2%, rather than widespread prosperity. The focus should shift towards overall social welfare and human development, as seen in the Kerala model, where high human development is achieved despite lower per capita income. Factors such as asset maintenance and urbanization costs, which in fact vary significantly across states, also require consideration in horizontal devolution. It is therefore essential that a more nuanced approach that rewards states for improving social welfare and overall prosperity, rather than just per capita income is required.

4. Increasing the Devolution of Grants in Aid

Apart from horizontal and vertical devolution, it is also important to note the devolution of grants and their justification. While the previous Finance Commission provided grants for revenue deficits and disasters, it is uncertain whether the current commission will also recommend similar grants. However, it is essential considering the rising prominence of local government institutions and also the impact of climate change in the economic wellbeing of the citizens.

5. Borrowing limit in changed context

The issue of borrowing limits also needs to be addressed. Originally, these limits were set by the 12th Finance Commission, which is based on the allocation of household financial savings between the center, the states, and the private corporate sector. With household savings declining and corporate savings increasing, the borrowing limits should be re-evaluated. The borrowing limit should not be a uniform 3% for all states but should be determined based on each state's specific needs. States requiring more funds for infrastructure and capital development should be allowed to borrow more.

In summary, the Finance Commission should focus on equitable financial distribution, reconsideration of borrowing limits, and appropriate grants to support state development in deciding the devolution to states.

16th Finance Commission and Fiscal transfers: Who benefits from devolution?³

Prof. T.M Thomas Isaac
Former Finance Minister, Government of Kerala &
Distinguished Professor, GIFT

Fiscal Transfers

The 16th FC is going to be very crucial for the future of fiscal federalism in India. Unlike the 14th or 15th FC, particularly 15th FC, there has been no controversy regarding the terms of reference. The 15th FC right from the go it was controversy. But it has been extraordinary with respect to 16th FC for the simple fact that the terms of reference just repeated what is in the constitution. There are three important points to be discussed. The general consensus that in India all the state governments demanded 50 % tax share but what is going around the background is an attempt to roll back the existing 42% tax devolution. The kind of enquiry is being made as how did they even come up with the 42% so on and so forth gives a feel that something very dramatic may happen and therefore its all the more recently take up this matter very seriously. The central government even after devolution, their revenues are much above the actual expenditure. Also the discretionary funds of the hands of centre have significantly increased in the end of the Planning Commission. Planning Commission's plan aid was always mostly in terms of loans. There is a revenue component and this revenue component is now with a legacy of the central government and several packages being given to the states. These packages mostly consists of Centrally Sponsored Schemes and there is a revenue grant involved in it. This is a situation which should make us demand for 50 % tax devolution strongly and is a point on which the states can be mobilised.

Horizontal Devolution

The second point is about the interstate distribution of resource where there is going to be lot of serious difference of opinion this time because of the simple fact that population and income distance criteria used for tax devolution and its disadvantages to advanced states. These advanced states are advanced not just merely in terms of per capita income but with the social development, so their population is also coming down. The South Indian states' share in the 11th FC was 23% and it is 15 % at present. The question is who has benefited from this devolution? The North Indian Hindi speaking belt plus North Eastern states have benefited and this is debilitating for the development of the South Indian states. There is no doubt that there has to be equity and there has to be transferable

³ Extract based keynote address by the guest of honour delivered on 18 October 2024 in the seminar 'The 16th Finance Commission and Indian States: A Kerala Perspective' organised by GIFT

resources from developed regions to non-developed regions. Importantly, we have to also look into the impact of this declining share on various demands of development of the states and further decline cannot be sustainable. The question is how to deal with this. There have been three proposals that have been made. One proposal is by Arvind Subramanian and Karnataka government on the gross share in the tax revenue. Second would be to have an individual state level ceiling. No state's share can decline below average for the last three FC shares. Their share is not going to dramatically rise, but there will be a pose in the continuous decline that is taking place in the south Indian states which has to be made up by the grants within the divisible pool reallocation. There has been a proposal by Arvind Subramanian that certain percentage of the revenue collected from the states should be given to the state. This won't be an interesting proposition for the simple fact that for example Maharashtra's share will be phenomenally booming and it will have very serious implications for states' resources transmission. But the first two proposals should be much more possible and it is in this context that the grants component becomes very important.

Sound Fiscal Policy

Third point is related to fiscal consolidation from where a lot of fire is going to come. A fiscal consolidation path is laid down and the path of development chosen by the regions in India is very different. Kerala which is focussed on social sector development and therefore it has serious infrastructure deficit which is holding back its development. Kerala has been performing much better than national average for the last two and half decades. But in the last 5 years particularly for Kerala the share has been coming down sharply. It is very important that Kerala overcomes infrastructure deficit and move forward. But Gujarat has focussed on infrastructure and private investment, and they were least interested in the social sector development. Therefore, they are advanced in per capita income but their social attainments are very low. The BIMARU states have neither social sector achievements nor investment infrastructure or industry. There is a known case like Tamil Nadu, which has attempted a balanced development that focussed on industry earlier, but now they pay a lot of attention to education and healthcare. The BIMARU states should be allowed to have revenue deficit and for them there is no point in investing in the infrastructure or even in industry for the simple reason that market forces will siphon off the entire multiplier impact into Maharashtra or advanced states.

The central government permitted additional borrowing up to 5 % during the Covid-19 period and many states did not borrow fully. Of the borrowed money, three lakh core rupees were lying idle in the treasury account of the state governments and invested in central government securities at 7 %. Many of the states did not spend in order to keep their revenue deficit zero. Those states lack development should be allowed to spend more on human development and the states like Kerala should be allowed to borrow more not just a 3 %, and one size cannot fit all. There must be a mechanism by which you recognise different path of development and the autonomy of different regions. Pursuing different path is necessity considering the current situation that exists. Things should not be seen purely in fiscal terms as each state has separate development vision. The central government was also borrowing

off budget but they never complied with the 3 % and their off budget borrowing were not included in the fiscal deficit. Problem arose when the Centre announced that the state governments borrowed in the previous years for infrastructure development will be reduced from their normal borrowing retrospectively. But during the Covid-19 time, the Government of India itself agreed to borrow more and spend. There is a silent agenda to reduce the states' borrowing from 3 % 1.75 %. These are totally undemocratic act. Most importantly states powers have been by and large been abridged totally with the GST introduction. The GST rates are not revenue neutral and are still evolving. We should be more worried about the revenue potential of this tax. The states have more responsibilities to provide education, healthcare and social security pension to its people as the elderly population cross 20 %. A universal minimum pension is mandatory in the juncture.

Indian Fiscal Federalism: Cooperation, Competition, and Institutional Challenges⁴

Prof Govinda Rao
Distinguished Honorary Fellow, GIFT

Executive summary

Indian fiscal federalism operates within a challenging framework, marked by asymmetric power structures between the Union and states. While cooperation is essential, coercive dynamics often prevail. Key issues include the absence of robust intergovernmental institutions for negotiation and conflict resolution, unrealistic revenue projections by the Finance Commission, and limited recognition of cost disabilities and taxable capacity. Lessons from Australia and Canada highlight the need for direct estimations and equitable resource allocation. The 16th Finance Commission must adopt a balanced approach to enable states like Kerala to meet fiscal challenges. Strengthening fiscal federalism demands empowered institutions and equitable fiscal mechanisms.

Introduction

The concept of federalism in India is inherently complex, characterized by a delicate balance between cooperation and competition. These dynamics shape the relationship between the Union and the states, often highlighting the tensions inherent in a federal structure. Effective federalism requires mutual benefits for cooperation to sustain; however, when gains are unevenly distributed, compensatory mechanisms become necessary. This principle is evident in the implementation of the Goods and Services Tax (GST), where compensations aimed to address revenue disparities among states.

Cooperation becomes increasingly challenging under an asymmetric power structure, where the Union holds disproportionate influence over states. This imbalance often results in coercive federalism under the guise of cooperative federalism. Federal institutions like the Finance Commission, which are supposed to safeguard federal principles, frequently reflect these power asymmetries, further complicating the landscape.

Institutional Gaps in Federal Mechanisms

Federalism, whether cooperative or competitive, demands robust institutional frameworks for negotiation, coordination, conflict resolution, and bargaining.

⁴ Extract based on the special address delivered on 18 October 2024 in the seminar ‘The 16th Finance Commission and Indian States: A Kerala Perspective’ organised by GIFT

However, India lacks such an institution. Despite recommendations from the First Administrative Reforms Commission and the Sarkaria Commission for an independent interstate council, meaningful progress has been limited. While an Interstate Council was established, its placement within the Union Home Ministry has undermined its neutrality and effectiveness.

The dissolution of the Planning Commission and the establishment of NITI Ayog offered an opportunity to reimagine intergovernmental coordination. However, NITI Ayog was not equipped with the independence or authority required to address these issues comprehensively. A constitutional body with a clear mandate for intergovernmental relations remains an unfulfilled necessity.

Challenges in State Finances

State finances are under immense pressure due to several factors. The deceleration in states' own revenues has been exacerbated by the pandemic, the complexities of GST implementation, and recommendations from the 15th Finance Commission. The Commission's revenue projections, often viewed as unrealistic, capped growth rates and phased out revenue deficit grants over time. This has created significant challenges for states like Kerala, where committed expenditures consume a substantial portion of revenue receipts.

The Finance Commission's mandate is to address horizontal and vertical fiscal imbalances. Tax devolution remains its primary instrument, supplemented by grants for specific purposes. However, the absence of nuanced methodologies, such as direct estimations of taxable capacity and cost disabilities, limits the effectiveness of these measures. The reliance on broad judgments rather than precise metrics leads to perceptions of arbitrariness in resource allocation.

Lessons from International Practices

International experiences offer valuable lessons for strengthening fiscal federalism in India. In Australia, taxable capacity and expenditure needs are directly estimated, providing a structured approach to fiscal transfers. Similarly, Canada's equalization payments are determined based on revenue capacity differences across provinces. These systems acknowledge disparities in both revenue generation and expenditure needs, ensuring more equitable outcomes.

In contrast, India's Finance Commission relies on indicators that often fail to capture the complexities of state finances. Marginal propensity to consume, for instance, decreases as income levels rise, making income-based indicators of taxable capacity inadequate. States like Kerala, which rely heavily on consumption taxes, are disproportionately affected by this approach. Additionally, cost disabilities, including higher land and wage rates, are not systematically accounted for, further disadvantaging states with higher service delivery costs.

The Role of the 16th Finance Commission

The upcoming 16th Finance Commission operates in a constrained fiscal environment. The pandemic has driven India's debt-to-GDP ratio to nearly 89%, while household financial savings have declined to 5.3%. Despite these challenges, states require assured revenue sources, either through increased tax devolution or

realistic revenue deficit grants. Kerala, in particular, faces significant fiscal challenges, and the Commission's approach to addressing these issues will be crucial.

The Finance Commission must strive to enable states to provide comparable levels of public services with comparable tax effort. While full equalization is neither feasible nor desirable, the Commission must adopt a balanced approach that considers the diverse needs and capacities of states. The inclusion of cost disabilities and a more accurate assessment of taxable capacity are essential for achieving equitable outcomes. Kerala must advocate for a realistic assessment of its fiscal challenges, emphasizing its higher cost structures and revenue constraints.

The overarching objective of fiscal transfers should be to enable states to provide comparable levels of public services with comparable tax effort. While full equalization is neither feasible nor desirable, the Finance Commission must strive for a balanced approach that recognizes the diverse needs and capacities of states.

Kerala, like other states, must present a well-substantiated case to the Finance Commission. This includes rigorous analysis of its fiscal realities and persuasive arguments for equitable treatment. The Commission, in turn, must adopt methodologies that reflect the complexities of India's fiscal landscape.

Advancing Fiscal Federalism

Strengthening fiscal federalism requires a recalibration of institutional structures and processes. A genuinely cooperative framework, supported by independent and empowered institutions, is essential for addressing the challenges of revenue distribution and expenditure needs. Kerala's efforts to articulate its fiscal concerns effectively will contribute to this broader objective, ensuring that its claims are heard and considered.

This includes detailed analysis of cost structures, revenue constraints, and expenditure needs. Strengthening fiscal federalism requires recalibrating institutional structures and processes, moving toward a genuinely cooperative framework supported by independent and empowered institutions.

The Finance Commission's role in balancing Union and state needs is critical to the broader objective of strengthening India's federal structure. By addressing revenue disparities and expenditure challenges, the Commission can ensure that fiscal federalism evolves into a more equitable and effective system. Kerala's efforts to articulate its concerns clearly and persuasively will contribute significantly to this endeavour, ensuring that its claims are heard and considered in the broader context of Indian fiscal federalism.

Fiscal Federalism in India: Addressing Imbalances and Ensuring Equity⁵

Shri R Mohan IRS
Honorary Fellow, GIFT

I'm going to highlight 10 points for your reflection in the next 10-15 minutes allotted to me.

Point number 1 Vertical Fiscal Imbalances: J S Hunter, in his seminal paper, mentioned if there is an imbalance, there should be balance. Most of you must have seen that Professor Rao has also cited Hunter. He also has a paper on the Measurement of Vertical Physical Imbalances, and there have been a number of academic papers. Now, when we say the divisible pool must be increased from 41 to 50 or 51, there has to be a sound empirical basis for that. I think you have an empirical basis. Normally. The empirical basis you give is to what extent the revenue of a state or a subnational entity can cover its own revenue expenditure. The gap is measured as the vertical fiscal imbalance. In the Indian context, you have to take out the centrally sponsored scheme expenditure and other conditional grants and then arrive at it. Prof. Rama Kumar and I worked out the VFI and found that it is around 48.5 - 49%, etc. However, VFIs are not specific to India alone. Advanced countries like Canada, Australia and Germany also face VFIs. The question is how to address them. The evolution of a fiscal distribution of powers in history is very much dependent upon the historical sequence of developments. If you look at the Philadelphia Convention, a Confederation became a federation, and tax powers had to be surrendered in Canada; the 1867 Act and the 1982 Act. When you look at the Indian scenario, we had a highly centralized British province and the Imperial Government and princely States. Then we had the Royal Commission upon decentralisation. Slowly, expenditure started to be decentralized, first followed by the revenue division. Naturally, our expenditure and decentralization outpace the revenue devolution. The root of VFI in India is they have expenditure decentralization, outpacing the revenue devolution. There is a broad unity among the States. None opposes the demand for 50%, though politically, State governments led by the ruling party at the Centre may not be that outspoken. It has been so always. It is natural. In getting 50%, everyone will be happy. But happiness ends there. Differences start here.

Point number 2 Horizontal fiscal imbalances: Indian states are at vastly different levels in terms of their per capita GSDP. We found in one of our discussion papers that the tax- GSDP ratio has been converging. There can be three reasons for that. a) Poorer States are mobilizing their taxes more efficiently than the richer states, b)

⁵ Extract based on the special address delivered on 18 October 2024 in the seminar 'The 16th Finance Commission and Indian States: A Kerala Perspective' organised by GIFT

the structural transformation and changes in levels of Marginal Propensity to Consume and c), as the state becomes more developed, the consumption becomes oriented towards high-value, low-volume items like gold, platinum, etc. It leads to more evasion, as the enforcement becomes more difficult. The fact is that the tax-GSDP ratio has been converging across States in India. Here you come to the big question: how far is the income distance the most appropriate proxy for fiscal capacity distance? To be fair to the finance commissions, it came down from 62.5 in the 11th FC to 45 per cent in the 15th FC. Kerala is a loser due to the high weight assigned to income distance criteria. Hence, it can make a case for some reduction. But it is not going to be without controversies because this proxy will be demanded by the most popular states, and the Finance Commission recommendations are always an act of delicate balancing. One can take a maximalist position in a memorandum. In academic work, you may have to take a different perspective. But in a memorandum, the Government can take a Maximalist position. Taking a maximalist position is posturing. When a State demands that 50% weight should be given to their share of GSDP in national economy in horizontal distribution formula, no Finance Commission is likely to accept it. If you say that a person paying more taxes should get better services in the income tax analogy, nobody will accept. This undermines progressivity principle in taxation. The left parties will revolt first. Posturing is also relevant. So some States start posturing here, but somewhere, there will be a compromise.

Point number 3 Balancing grants: Professor Prof Govinda Rao mentioned it here. The 1st report of the 15 Finance Commission for 2020-21, suggested balancing grants for Karnataka, Mizoram, and Telangana. That is, as revenue deficit grants plus tax devolution of the immediate previous year, 2019-20, was more than that of 2020-21, these States are eligible for balancing grants. The Union Finance Ministry outrightly rejected it. The BJP ruled Karnataka, and the same party government at the Union rejected it. So, I'm not attributing a partisan motive there, but the concept of the balancing grant was rejected. But Kerala, in its memorandum, will have to argue more for balancing grants. As Dr. Isaac said, like states with smaller areas are protected because 2% is the base below which no percentage should fall, tax shares also should be protected. Tamil Nadu, when Jayalalitha was the Chief Minister, had also raised this demand before the Finance Commission that there has to be a base below which it cannot fall. That kind of an approach can be taken.

Point number 4 the suggested formula for tax devolution. In my view, no FC will accept a formula that grossly or palpably violates the criterion of progressivity in tax devolution. If 50% GSDP Maximilist position and posturing, if you believe in that posturing that has to come, we have to have a balanced alternative. When Dr. Isaac was the Finance Minister, we were part of the team assisting him in preparing the memorandum for the 15th Finance Commission and Kerala's memorandum. We suggested a formula and mentioned what would be the share of all 28 States if this formula was implemented, and that was appreciated by the Finance Commission, and we got some grants. But we said, this formula is adopted, which state will be affected in which way and which state will be affected in that way. So, we did a balancing exercise. So, balancing grants is important.

Point number 5: We have the Social Security pension; we are a geriatric society. We have a Social Security pension for 68 lakh, or 62 lakh people. We pay Rs 1600 every month. The government was by ₹100 every year, but of late, because of the squeeze, and for whatever reasons the government of Kerala is struggling to give the Rs 1,600. The government aims at giving Rs 2,500 per month. The opposition parties may aim at a higher amount; I mean, so far, so good. But here, instead of conditional grants, there has to be a social security cushion platform in which the Centre should grant 2,500 to every member. If I say 2,500, somebody will say that Andhra Pradesh gives Rs 4,000 per month but I think it's for the household. So Rs 2,500 for every member with an annual increase, there has to be a cushion grant for that. Why don't we try to make a case for that also?

Point number 6: There have been terms of reference that have been ever expanding since the additional ToR of the 11th FC where part of the article 275 grants were also withheld with conditionalities. Dr Amaresh Bagchi had written a dissent note to the 11th Finance Commission Report. I think after the K C Neogi headed 1st Finance Commission, we are getting the constitutional terms of reference bodily lifted from the article to it in the 16th FC. This is what Kerala had requested. Many other States might have also requested. So, the degrees of freedom to the 16th FC are now substantial. I welcome that with a caveat that the additional ToR can come at any point in time. So we have to request the Finance Commission very strongly that they stay within the ToR limit and do not tread into sound finance, fiscal roadmap, etc. because they are not part of the ToR Mandate as of now.

Point number 7: Expenditure decentralisation has been outpacing revenue decentralisation. States have more functions in social and economic sectors, as per the List II in the Seventh Schedule of the Constitution. This is at the root of the vertical fiscal imbalance, with more buoyant tax revenues in the centre and more expenditure obligations with the States. The economic principles of how allocation, distribution, and stabilisation should be with various tiers of governments justifies this. The Union government has been taking up more functions from the State List without taking up additional expenditure. Now you see the Port Bill, I think it has become an act now - minor ports are an item in the State List of the Constitution. It's with the State Government now. States like Tamil Nadu strongly protested that minor ports have been taken out of the State list unconstitutionally, as to legislate in an item in the State List, the Rajya Sabha has to pass a resolution with two-thirds majority, as per the requirement in Article 249, or the State has to request, under Article 252. Look at the Dam Safety Bill. The dams above a height have been taken away from the jurisdiction of the States. Mullaperiyar will perhaps go to the Union. There is a Ministry of Cooperation at the Union level, though cooperation, except inter-State societies is a State subject. When cooperative societies were brought within the purview of a constitutional amendment (97th amendment), the Supreme Court invalidated that part of the amendment concerning cooperative societies. States will have to spend more and more as per Union directives. As regards taxing powers, it is interesting to see what the apex court stated- with cooperative federalism, there can be uncooperative federalism also- in a democracy, along with cooperation, contestation also has a place. The judgement was on GST

rates- it held that the rates decided by GST Council are not mandatory, but only recommendatory.

Point number 8: Finance Commission has got a very defined role, a well-defined, well-meaning role. My submission, I think Prof. Rao has already said it -FC is not a Development Commission. Finance Commission is to address the vertical imbalances between the Union and the States, the distribution of revenues between the States and to recommend grants to States-in-need of assistance according constitutional mandate in Articles 280 and 275 respectively.. If you say that it should poke its nose into nitty-gritties or everything, then it is no longer a finance commission. It will become a supra-legislative body that will go against the ground of against grain of Federalism.

Point number 9: Tax effort has been a part of the 11th, 12th and 13th FC in the distribution formula of the prescribed share of taxes between the States, but the 14th FC did not use tax effort as a criterion, and rightly so. The 15th FC has introduced effort criteria and assigned a weight of 2.5. But they did not use that base using a form of the inverse of GSDP, as down by the Commissions before the 14th. In the Kerala's memorandum one must argue against tax effort as a criterion, because in the post GST scenario, the IGST comes as a settlement to the destination State. For example, Kerala's IGST received is IGST collected at the origin state like Rajasthan, Karnataka, Telangana, Tamil Nadu, etc. If there is evasion in the origin state, the destination state suffers. So, the tax effect can no longer be a criterion for devolving or distributing tax revenues to the state. This is a very crucial point. Now coming to the argument that what is collected here is not being returned to my state. I do not support the argument, I think. It was there in the earlier finance commissions. This totally goes against equity principle..

Point number 10: The issue of contingent liabilities is bothering Kerala very much. I am for transparency in this regard. If you are giving grants, if you are giving guarantees, let that come out in the open. But if you say that all parastatals are state, then it's a constitutional question. The Constitution does not say that except in Article 12 for Fundamental Rights. Let that be argued out. But the point is as Dr. Isaac said if you squeeze the day-to-day expenditure of a state because of this, there will be serious problems. But added to that, I will also say, if government is taking up the responsibility for repaying these loans and interest, the interest payments go up that also squeezes the State's developmental interventions.

Coming to the concluding point. What strictly how valid are the Finance Commission's recommendations? The balancing grants were rejected. In the 3rd Finance Commission's dissent note by the Member-Secretary, was accepted on finance commissions confining only to non-plan expenditures. Now coming to the important recommendation on dealing with Finance Commission recommendation on share of taxes to the States. Benegal Narsing Rau, the constitutional adviser to the Constituent Assembly had a very strong view on that. The Finance Commission's recommendations are advisory, if FC recommends 41 per cent, Union government can say 37, or 36 per cent. There will be political problems that is a different story. But, he said the President in India has no discretion unlike Governor, who has minimal discretion. But he said, the President is also President, elected by the Electoral College of the States. If a President wants to reject the

Union Finance Commission's recommendations, the President should better resign and go. I'm quoting Benegal Narsing Rau here. So far giving credit to the credibility of the Finance commissions and the good stance of the successive Union governments, the tax distribution, the prescribed share, has never been touched by the Union Government. No Union Government has altered the share of taxes recommended by the Finance Commissions so far. Other recommendations they have touched. Coming to the revenue deficit part. I think the Union Government, in the 2018 amendment, has done away with the revenue deficit target. They are only targeting fiscal deficit. States can also amend their Fiscal Responsibility legislations.. Now, if the 16th Finance Commission wants to lay down a fiscal roadmap, I think with the given ToR, 16th will not be able to do.

Thank you for your patience.

PART II
Issues on devolution

On the Vertical Devolution

1

Finance Commission (FC) Grants-in-aid to the States: Need for increasing the base of FC grants⁶

Executive Summary

Finance Commission grants does play a significant role in reducing the vertical imbalances for two reasons. First, it is non-discretionary transfer unlike the conditional transfers like the grants for the centrally sponsored schemes. Second, it is recommended from the Consolidated Fund of India (CFI) which has been growing and that leaves more room for its flexibility as compared to divisible pool which could be changed only through constitutional amendments. Mere increase in the share of FC grants will not resolve the current fiscal problems faced by the states without an increase in the size of the FC grants.

An attempt is made in this study to project the FC grants share to the states and Kerala for the 16th FC based on the projected divisible pool and gross revenue. The projected divisible pool for the 16th FC period is Rs. 21542171 crore and the total grants in aid for states is estimated to Rs. 1645822 which is 7.6 % of the projected divisible pool of the 16th FC. Kerala's estimated FC grants come to Rs. 88874 Crore for the 16th FC period based on the state's 15th FC share of grants in aid (5.4%). This will not be enough to meet the growing development needs of the state. Therefore we have also estimated the FC grants to Kerala for 16th FC by assuming 50% increase from 15th FC. This 50 percent assumption is based on the rough calculation of grants required various items under grants in aid. Based on the calculation, Kerala's estimated FC share is Rs. 133312 crore. The grants in aid from the gross revenue are also estimated based on the projected gross revenue for the 16th FC period. The total grants in aid from the gross revenue to states and Kerala accounts for Rs 2355522 crore Rs.127198 crore (based on the existing share of 5.4 %) respectively. In case of 50 percent increase in the grants in aid share to Kerala in the 16th FC, the estimated amount turns to be Rs. 133312 crore. There is a strong case to increase the grants in aid from Finance Commission from 7.6 % to at least 12% of divisible pool considering the existing low base (less than 20% of total grants). If the FC grants raises to 12% of divisible pool, Kerala would gain an additional amount of Rs 50719 crore during the 16th FC period. The gap between the grants in aid share of Kerala in the 16th FC period calculated from the divisible pool and gross revenue based on 50 % increase from the existing share is Rs.57485 crore. Based on this calculation, it is suggested that the grants in aid share should also be allotted

⁶ Prepared by Dr Sumalatha B S, Assistant Professor, GIFT & Smt Anitha Kumary , Visiting Faculty, GIFT

from the gross revenue of the Union government. This will enhance the overall grants in aid to the states.

The specific suggestions to enhance Grants in aid for 16th FC are follows.

1. The base of FC grants has to be increased from 7.6% of divisible pool to 12% of divisible pool so that non-discretionary transfers will increase.
2. The FC grants should also be increased by 50 percentages from the 15th FC share in order to meet the growing needs of the state.
3. Grants in aid should also be shared from the gross revenue/consolidated fund of India. This will increase the base and size of grants in aid to states.
4. The revenue deficit grants have to be reconsidered for the needy states in the 16th FC.
5. The state specific grants have to be provided for addressing the specific needs of the states. Kerala specific problems such as second generation issues - palliative care, elderly care, skilling and employability abroad, innovation and start up expansion, infrastructure backwardness, environmental fragility control, man-animal conflict containment and grants for creating a Special Economic Zone (SEZ) at Vizhinjam international sea port have to be considered in 16th FC.

1. Context

Resource sharing has been the centre of fiscal federalism and centre-state financial relations in India. The state governments receive revenue from the Union government in the form of tax share & grants-in-aid through the Finance Commissions' (FCs) devolution. Apart from the Finance Commission grants, the state and central plan schemes (till the abolition of Central Planning Commission), centrally sponsored schemes and other schemes/grants and loans through different Ministries are also distributed to the states (Abiad et, al 2020; Rao, 2015). The provision of grants-in-aid has undergone drastic changes under various FCs. As there exists the vertical imbalance in the tax share between the union and the states, the states are more dependent on FC grants to meet their growing expenditure requirements. States have been demanding state specific grants considering state specificities for meeting their development needs through their memorandum to various FCs. Many of the requirements of the states addressed through their memorandum have not been addressed by various FCs.

In the present fiscal federal set up, how to present the grants in aid requirements before the 16th FC is a great challenge to states particularly to Kerala. The state of Kerala along with few others have been facing a drastic decline in the central share of taxes as a result of adverse effect of devolution criteria and its weights used by the recent FCs (Mohan and Shyjan, 2009). The 14th and 15th FCs have provided the revenue deficit grants by recognizing the need for resources to meet the revenue deficit of the states (14th and 15th Finance Commission reports). In the current context of shrinking divisible pool, there is less scope for states to get more revenue share in the form of tax devolution even though the devolution share increases and this necessitates the need for higher grants in-aid to the states considering their specific requirements from the Consolidated Fund of India.

Against this context the issues pertaining to grants in-aid needs more attention and exploration. Since grants in-aid has to be allotted from the gross revenue/consolidated fund of India, there is further scope to increase the share of grants in aid. There has been a continuous decline in the share of grants in aid from the Union government under various FCs. During the 13th FC, the share of grants was 15.2 percent which has reduced to 11.98 percent during the 14th FC period. Despite a marginal increase noted during 15th FC period, the overall allocation of grants is not high. This definitely contracted the fiscal space of the states.

2. Overview of Finance Commission Grants

The divisible pool is that portion of gross tax revenue which is distributed between the Union and the States. The divisible pool consists of all taxes, excluding surcharges and cesses levied for specific purpose and the collection charges. The FC grants form an integral part of the transfers to states from the Consolidated Fund of India (CFI). Its share has been increasing over time and it accounted for 19.4 per cent of FC transfers during the 15th FC (Table 1).

Table 1: Transfers recommended by Finance Commissions (in Rs Crore)

FCs	Tax share	FC Grants	Total FC transfers to states
10 th FC (1995-2000)	206343 (91.0 %)	20300 (9.0 %)	226643
11 th FC (2000-2005)	376318 (86.5 %)	58587 (13.5%)	434905
12 th FC (2005-2010)	613112 (81.1%)	142639 (18.9 %)	755751
13 th FC (2010-2015)	1448096 (84.8 %)	258581 (15.2 %)	1706677
14 th FC (2015-2020)	3948187 (88.0 %)	537354 (12.0 %)	4485541
15 th FC (2021-2026)	4224760 (80.6 %)	1016662 (19.4 %)	5241422

Source: Calculated from Union Finance Commission Reports (10 to 15)

This has to be viewed in the context of overall decline in the growth of transfers of FC. The total FC transfers have grown at a rate of growth of 91.89 from 10th FC to 11th FC. During the 12th FC period, the growth of total transfers from FC was 73.77 percent and it has increased to 125.83 percent and 162.82 percent in 13th and 14th FCs respectively for the 5 year period each. However, there is a sharp decline in growth of transfers (16.85 %) observed during the 15th FC period (Table 2). While the FC grants (statutory grants) constitute only 19.7 percent of the total grants from the union government, the discretionary (conditional) transfers of grants constitute 80.3 percent during 2022-23. There is a decline in the FC grants from 31.2 percent in 2009 10 to 19.7 percent in 2022-23, whereas, the non-FC grants have increased from 68.8 percent to 80.3 percent during the same period (Table 3). As the non-FC grants are conditional and tied, the state does not have flexibility in utilizing this grant for different state specific purposes. This in fact reduces the states' expenditure autonomy.

Table 2: Growth of total transfers in various FCs (in percentages)

FCs	Growth of Tax share	Growth of Grants in aid	Growth of Total transfers to states
11 th FC	82.37	188.6	91.89
12 th FC	62.92	143.47	73.77
13 th FC	136.19	81.28	125.83
14 th FC	172.65	107.81	162.82
15 th FC	7.01	89.2	16.85

Source: Calculated from Union Finance Commission Reports (10 to 15)

Table 3: Share of FC and non FC Grants from the Union to the States (Percentage)

Year	FC grants/Total grants	Non-FC grants to total
2009-10	470 87 (31.2)	103886 (68.8)
2010-11	48909 (29.9)	114588 (70.1)
2011-12	52199 (28.0)	134217 (72.0)
2012-13	48395 (25.6)	140286 (74.4)
2013-14	67133 (32.6)	138819 (67.4)
2014-15	71447 (21.6)	259358 (78.4)
2015-16	84579 (26.0)	241317 (74.0)
2016-17	95550 (26.8)	260541 (73.2)
2017-18	92244 (22.7)	313713 (77.3)
2018-19	93704 (21.3)	346165 (78.7)
2019-20	123710 (23.1)	410858(76.9)
2020-21	184063 (28.6)	459778 (71.4)
2021-22	207435 (33.3)	415193 (66.7)
2022-23 (A)	172760 (19.7)	705011 (80.3)
2023-24(RE)	140429 (17.4)	665546 (82.6)

Source: Calculation from RBI's e-STATE database

The Article 275 determines the grants from the union to the States. It further states that the Parliament may by law provide such sums that shall be charged on the Consolidated Fund of India in each year as grants-in-aid of the revenues of such States as Parliament may determine to be in need of assistance, and different sums may be fixed for different states. The 9th FC included non-plan deficit and plan deficit grants to the states as part of grants in aid along with relief expenditure. During the 10th FC period, the grants in aid included non-plan revenue deficit grant, grants for upgradation, special problems and local bodies along with relief expenditure. This pattern was continued in the 11th FC period also. The 12th FC made drastic changes in the grants in aid categories and ten categories were given grants in aid that include health sector, education sector, maintenance of roads and bridges, maintenance of buildings and forest etc. The 13th FC has also followed the same pattern by adding four more categories such as improving outcomes, issuing UIDs, performance incentives and Improvement of statistical system at state and district level. The 14th and 15th FCs reduced the categories of grants in aid to minimum numbers. The 14th FC recommended grants in aid to disaster management, post devolution revenue deficit grants and grants to local government. The 15th FC followed the 14 FC with respect to grants in aid by adding the sector and state specific grants (Appendix Table 1).

3. Base of the FC grants

The grants in aid are recommended from the Consolidated Fund of India as per the constitutional provision. However, the 14th and 15th FCs has made grants in aid allocations from the divisible pool. Given the declining share of divisible pool in the gross revenue of the Union government, a portion of gross revenue of the Union government shall also be allotted as grants in aid apart from the divisible pool. This will enhance the overall share of grants in aid to the states. As per the 14th FC recommendation, the FC grants constitute only 5.72 % of the total devolution (out of 47.72 % of total FC transfers) and

it has increased to 10 % in 15th FC (Table 4). There is much scope for increasing the overall size of the grants in aid since it has to come from the gross revenue.

Table 4: Transfers recommended by the 14th and 15th FCs

Categories	14 th FC		15 th FC	
	Amount (crore)	As a % of divisible pool	Amount (crore)	As a % of divisible pool
Divisible pool	9400444		10304292	
Total transfers to states	4485541	47.72	5257822	51.03
Tax share	3948187	42	4224760	41.00
Grants from FC	537354	5.72	1033062	10.03
Fiscal Space for Union Govt	4914903	52.28	5046470	48.97
Provision of other transfers to states	1477943	15.72	1966199	19.08
Total grants from the Centre	2015297	21.44	2999261	29.11

Source: Union Finance Commission Reports (14 & 15)

4. States' share in FC Grants

The state wise FC grant in-aid as a share of total FC grants in aid to the states is given in appendix Table 2. Like in the case of tax devolution, the grants in aid are also high for the states such as Bihar, Madhya Pradesh, Uttar Pradesh and West Bengal. In the case of Kerala, the grants in aid share remains almost constant from 10th FC to 13th FC. But during the 14th and 15th FCs, there was an increase in the grants in aid for Kerala and this is mainly due to the receipt of the revenue deficit grant. The component wise share of grants in aid to the states under 15th FC is given in appendix Table 3. One important peculiarity of the composition of 15th FC grants was the Revenue Deficit Grant (RDG) component. The revenue deficit grant constitutes 68 per cent of the total grants in aid in Kerala. Kerala's rank in grants in aid was 6 including the RDG. If we exclude RDG from the total grants in aid, Kerala's rank becomes 16. The revenue deficit grant is a discretionary grant with temporary in nature. Continuation of this grant in the 16th FC is matter of great concern. From the analysis, it is observed that the composition of grants has to be reconsidered in 16th FC. Hence there is a strong case to enhance the FC grants for maintaining sustainability and specific development requirements of the states. A detailed analysis of transfers from 10th to 15th FCs have shown that Kerala's share in total FC transfers remains almost constant, ranges from only 2.9 percent to 2.4 percent (Table 5). Since Kerala's tax share almost halved from 3.875 percent to 1.92 percent, there is a strong case for increasing the share of grants in aid to Kerala.

Table 5: Kerala's tax share, grants in aid and total FC transfers in all States' share (%)

FCs	Kerala's tax share to total tax share to all states	Kerala's grants in aid share to total grants in aid to all states	Kerala's total FC transfers to total FC transfers to all states
10th FC	3.87	0.70	2.92
11th FC	2.48	0.91	2.27
12th FC	3.01	1.60	2.74
13th FC	2.30	1.81	2.23
14th FC	2.03	3.22	2.17
15th FC	1.92	4.66	2.45

Source: Calculation based on data from Budget in Brief and Finance Commission Reports

5. Grants in aid demand of Kerala

Fourteenth FC

The state specific requirements of grants in aid are placed before the respective FCs through its memorandums to FCs. Appendix Table 4 presents the grants in aid demand of Government of Kerala to 14th FC. It consisted of 38 categories ranging from specific problems to infrastructural needs including the grant requirement of Vizhinjam international deep water multipurpose sea port. Though the state were demanded 38 categories of grants in aid, the actual realization was only three items namely disaster management, revenue deficit grant and grants to local governments.

Fifteenth FC

During the 15th FC period, the state of Kerala demanded five categories of grants which are shown in Table 6. However, the 15th FC awarded five categories of grants in aid such as revenue deficit grants, sector specific grants, state specific grants, grants to local bodies and disaster risk management grants.

Table 6: Grants in aid demand of Kerala through its Memorandum to 15th FC

Sl. No.	Categories
1	Coastal Erosion and Coastal Protection
2	Forest conservation
3	Skill up gradation for improved employability abroad
4	Rehabilitation of return Kerala emigrants
5	Farm sector crisis : Relief for rubber growers

Source: 15th FC Memorandum, Government of Kerala

6. Projection of FC grants for 16th FC

An exercise is carried out to project the grants in aid to overall states and Kerala for the 16th FC period based on both the projected divisible pool and gross revenue of the Union government. The gross tax revenue of the Union government for the 16th FC period (2025-26 to 2030-31) is projected using exponential trend method and by using this, the divisible pool is calculated. The divisible pool is calculated by subtracting cess and surcharges and cost of collection of taxes from gross tax revenue of the Union government using the receipt budget data of the Union government. There are variations in the divisible pool data provided by the FCs and calculated from the receipt budget data of the Union government. According to the 15th FC reports, the total FC grants given to states were Rs. 1033062 crore which is 10.03 % of the divisible pool calculated by the 15th FC that is Rs.10304292 crore. Whereas, the divisible pool calculated using receipt budget data of the Union government during the 15th FC is Rs. 13511535 crore. However, the allotted total FC grants during 15th FC is only 7.6 % of the divisible pool (Rs. 13511535 crore) calculated using receipt budget data of the Union government.

Kerala's share of FC grants to total FC grants given to the states during the 15th FC is 5.4 % which is Rs. 55618 crore. The projected divisible pool for the 16th FC period is Rs. 21542171 crore and the total grants in aid for states is estimated to Rs. 1645822 which is

7.6 % of the projected divisible pool of the 16th FC. Kerala's estimated FC grants come to Rs. 88874 for the 16th FC period based on the state's 15th FC share of grants in aid (5.4%). This share will not be enough to meet the growing development needs of the state. Hence, the 16th FC grants to Kerala are estimated by assuming 50% increase from 15th FC. This 50 percent increase assumption is based on the rough calculation of grant required for various items under the grants in aid. Based on this calculation, Kerala's FC grants share comes to Rs. 133312 crore (Table 7). The grants in aid from the gross revenue are also estimated based on the projected gross revenue for the 16th FC period. The estimated total grants in aid from the gross revenue to states and Kerala are Rs 2355522 crore and Rs.127198 crore (based on the existing Kerala's grants in aid share of 5.4 %) respectively. In the scenario of assuming 50 percent increase in the grants in aid share to Kerala from the 16th FC grants in aid, the estimated amount turns to be Rs. 133312 crore with an increase of Rs 44438 crore.

Table 7: Projection of Kerala's FC grants share for 16th FC based on divisible pool (in crore)

Finance Commissions	Divisible pool	Total FC Grants	Kerala' FC grants	Kerala share (%)	Kerala's FC grants for 16 th FC estimated with 50% increase from 15 th FC (2026-27 to 2030-31)
14 th FC	7716254				
15 th FC	13511535	1033062 (7.6 % of divisible pool)	55618	5.4	
16 th FC	21542171	1645822 (7.6 % of divisible pool)	88874	5.4	133312

Source: Calculated from 14th& 15th FC reports and receipt budget of Union Government, various years

From the analysis, it is observed that the size of Finance Commission grant is only less than 20% of total grants from the Centre. This forms only 7.6% of divisible pool during the 15th FC period. There is a strong case to increase the grants in aid from Finance Commission from 7.6 % to at least 12% of divisible pool considering the existing low base (less than 20% of total grants). If the FC grants raises to 12% of divisible pool, Kerala would gain an additional amount of Rs 50719 crore during the 16th FC period (Table 8).

Table 8: Projection of Kerala's FC grants share for 16th FC based on divisible pool (in crore)

Finance Commissions	Divisible pool	Total FC Grants	Kerala' FC grants	Kerala share (%)	Kerala's FC grants for 16 th FC estimated if total FC grants increase from 7.6% to 12% of Divisible pool FC (2026-27 to 2030-31)
15 th FC	13511535	1033062 (7.6 % of divisible pool)	55618	5.4	
16 th FC	21542171	1645822 (7.6 % of divisible pool)	88874	5.4	
16 th FC	21542171	2585061 (12% of divisible pool)		5.4	139593

Source: Calculated from 14th & 15th FC reports and receipt budget of Union Government, various years

As the release of grants in aid is from the consolidated fund of India, grants in aid should be allocated from the gross revenue of the Union government. The gap between the grants in aid share of Kerala in the 16th FC period calculated from the divisible pool and gross revenue based on 50 % increase from the existing share is Rs.57485 crore (Table 9). If the FC grants are 12% of the gross revenue of the central government, the estimated share of Kerala becomes Rs 199788 crore.

Table 9: Projection of Kerala's FC grants share for 16th FC based on gross revenue (in crore)

Finance Commissions	Gross Revenue	Total FC Grants	Kerala' FC grants	Kerala share (%)	Kerala's FC grants for 16 th FC estimated with 50% increase from 15 th FC (2026-27 to 2030-31)
16 th FC	30831441	2355522 (7.6 % of gross revenue)	127198	5.4	190797
16 th FC	30831441	3699773 (12 % of gross revenue)	199788	5.4	

Source: Calculated from 14th & 15th FC reports and receipt budget of Union Government, various years

7. Key Takeaways

The existing vertical imbalance in resource sharing between the union and state governments can be minimized with the support of FC grants. The expected increase in tax devolution share in the 16th FC may not increase much the state share as the size of the divisible pool is small and has started shrinking. Though the conditional grants from the centre have increased enormously, due to the problem of 'one size fits for all', the states may not benefit from it. However, the FC grants would be the better option to reduce vertical imbalances in resource sharing as it comes from the Consolidated Fund of India. Mere increase in the share of FC grants will not solve the current fiscal problems faced by the states, instead the base of the FC grants has to be increased and this can be done without much difficulty as the FC grants come from consolidated fund of India. The revenue deficit grant has to be re-considered for the needy

states in the 16th FC. Moreover, the statutory grants have to be increased based on state specific needs.

An exercise is carried out in this study to project the FC grants in aid share to the states and Kerala for the 16th FC based on the projected divisible pool and gross revenue. The projected divisible pool for the 16th FC period is Rs. 21542171 crore and the total grants in aid for states is estimated to Rs. 1645822 which is 7.6 % of the projected divisible pool of the 16th FC. Kerala's estimated FC grants come to Rs. 88874 for the 16th FC period based on the state's 15th FC share of grants in aid (5.4%). This share will not be enough to meet the growing development needs of the state. Therefore, the 16th FC grants to Kerala are estimated by assuming 50% increase from 15th FC share. This 50 percent increase assumption is based on the rough calculation of grants in aid requirements for various items grants. Based on this calculation, Kerala's estimated FC grants share is Rs. 133312 crore .The grants in aid from the gross revenue are also estimated based on the projected gross revenue for the 16th FC period. The estimated total grants in aid from the gross revenue to the states and Kerala are Rs 2355522 crore and Rs.127198 crore (based on the existing FC grants share of 5.4 % under the 15th FC) respectively. If the FC grants raises to 12% of divisible pool , Kerala would gain an additional amount of Rs 50719 crore during the 16th FC period. In the scenario of assuming 50 percent increase in the grants in aid share to Kerala from the 16th FC grants in aid, the estimated amount turns to be Rs. 133312 crore. The gap between the grants in aid share of Kerala in the 16th FC period calculated from the divisible pool and gross revenue based on 50 % increase from the existing share is Rs.57485 crore. Based on this calculation, it is suggested that the grants in aid share should also be allotted from the gross revenue of the Union government apart from the divisible pool share. This will enhance the overall grants in aid share to the states.

8. The following are the specific suggestions to enhance Grants in aid for 16th FC.

1. The base of FC grants has to be increased from 7.6% of divisible pool to 12% of divisible pool so that non-discretionary transfers will increase.
2. The FC grants should also be increased by 50 percentages from the 15th FC share in order to meet the growing needs of the state.
3. Grants in aid should also be shared from the gross revenue/consolidated fund of India. This will increase the base and size of grants in aid to states.
4. The revenue deficit grants have to be reconsidered for the needy states in the 16th FC.
5. The state specific grants have to be provided for addressing the specific needs of the states. Kerala specific problems such as second generation issues - palliative care, elderly care, skilling and employability abroad, innovation and start up expansion, infrastructure backwardness, environmental fragility control, man-animal conflict containment and grants for creating a Special Economic Zone (SEZ) at Vizhinjam international sea port have to be considered in 16th FC.

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Appendix

Appendix Table 1: Category of Grants in aid based on Article 275 under 9th to 15th FCs

FCs	Category of Grants in aid				
9 th FC	Non plan deficit	Plan deficit	Relief expenditure		
10 th FC	Non plan revenue deficit grants	Upgradation	Special problems	Local bodies	Relief expenditure
11 th FC	Non plan revenue deficit grants	Upgradation	Special problems	Local bodies	Relief expenditure
12 th FC	Post devolution Non plan Revenue Deficit	Health sector	Education sector	Maintenance of roads and bridges	Maintenance of buildings
	Maintenance of forests	Heritage conservation	State specific needs	Local bodies	Calamity relief
13 th FC	Local bodies	Disaster relief	Post devolution Non plan Revenue Deficit	Performance incentives	Elementary education
	Environment (Protection of forests, Renewable energy, Water sector management)	Improving outcomes (reduction in IMR, improvement in supply of justice)	Issuing UIDs	Disaster innovation fund	Improvement of statistical system at state and district level
	Employment and pension data base	Maintenance of roads and bridges	State specific	Implementation of model GST	
14 th FC	Disaster management	post devolution revenue deficit grants	Grants to local governments		
15 th FC	Revenue deficit grants	Sector-specific grants	State-specific grants	Grants to local bodies	Disaster risk management

Source: Union Finance Commission Reports (9 to 15)

Appendix Table 2: State wise grants in aid as a share of total grants in aid to states

States	Grants in aid of each state as percentage of total Grants in aid to states (%)					
	10 th FC	11 th FC	12 th FC	13 th FC	14 th FC	15 th FC
Andhra Pradesh	8.65	3.47	3.66	5.23	6.78	6.20
Arunachal Pradesh	2.01	2.38	1.23	1.68	0.25	0.52
Assam	6.23	1.57	3.14	2.02	2.26	3.70
Bihar	6.67	3.06	5.59	5.65	4.84	5.29
Chhattisgarh			1.39	2.39	1.50	1.69
Goa	0.48	0.08	0.09	0.20	0.07	0.15
Gujarat	4.24	2.36	2.60	3.74	3.48	3.66
Haryana	1.17	1.12	1.01	1.65	1.41	1.66
Himachal Pradesh	5.01	8.35	7.89	4.01	8.09	4.61
Jammu & Kashmir	6.98	19.75	9.42	7.83	12.12	
Jharkhand			2.13	2.80	1.83	1.96
Karnataka	2.39	1.94	2.84	4.49	3.07	3.78
Kerala	2.49	1.39	2.28	2.46	3.35	5.47
Madhya Pradesh	4.03	2.97	3.60	5.15	4.34	4.95
Maharashtra	4.18	3.34	3.88	6.30	6.56	6.92
Manipur	2.20	3.14	3.26	2.72	1.97	1.36
Meghalaya	1.75	2.86	1.47	1.52	0.36	0.65
Mizoram	1.99	3.06	2.24	1.90	2.28	0.89
Nagaland	2.93	6.18	4.09	3.55	3.43	2.34
Odhisha	4.55	2.95	3.70	3.74	2.71	3.07
Punjab	2.11	1.90	3.44	2.14	1.60	4.33
Rajasthan	5.64	5.11	3.26	5.01	4.46	5.84
Sikkim	0.67	1.61	0.31	0.41	0.07	0.30
Tamil Nadu	3.64	2.28	2.90	4.40	3.82	3.97
Telangana					1.89	2.06
Tripura	2.70	4.32	4.06	2.21	1.07	2.35
Uttar Pradesh	12.97	6.84	10.70	10.34	9.16	9.55
Uttaranchal			4.51	1.57	0.71	4.19
West Bengal	4.31	7.99	5.31	4.89	6.52	8.51
All States	100	100	100	100	100	100.00

Source: Calculated from 10th to 15th FC Reports

Note: For 14th FC, state wise share of grants in aid to total grants in aid is calculated by adding the components such as grants to local bodies, disaster management fund and revenue deficit grants.

Appendix Table 3: Grants in aid under 15th FC (crore)

States	Total grants in aid	Revenue deficit grant	Total grants minus Revenue Deficit Grant (RDG)	Share of FC grants excluding RDG (%)	Rank (no.)	Share to total grants in aid (%)	Rank in FC grants(no.)
Andhra Pradesh	63037	30497	32540	4.51	10.00	6.20	4.0
Arunachal Pradesh	5265	0	5265	0.73	21.00	0.52	23.0
Assam	37611	14184	23427	3.24	12.00	3.70	14.0
Bihar	53825	0	53825	7.45	3.00	5.29	7.0
Chhattisgarh	17231	0	17231	2.39	17.00	1.69	19.0
Goa	1561	0	1561	0.22	27.00	0.15	25.0
Gujarat	37216	0	37216	5.15	8.00	3.66	14.0
Haryana	16921	132	16789	2.32	18.00	1.66	19.0
Himachal Pradesh	46913	37199	9714	1.35	20.00	4.61	9.0
Jharkhand	19919	0	19919	2.76	14.00	1.96	18.0
Karnataka	38437	1631	36806	5.10	9.00	3.78	13.0
Kerala	55618	37814	17804	2.47	16.00	5.47	6.0
Madhya Pradesh	50368	0	50368	6.97	4.00	4.95	8.0
Maharashtra	70375	0	70375	9.75	2.00	6.92	3.0
Manipur	13804	9796	4008	0.56	22.00	1.36	20.0
Meghalaya	6609	3137	3472	0.48	24.00	0.65	22.0
Mizoram	9040	6544	2496	0.35	25.00	0.89	21.0
Nagaland	23773	21249	2524	0.35	25.00	2.34	16.0
Odisha	31262	0	31262	4.33	11.00	3.07	15.0
Punjab	43996	25968	18028	2.50	15.00	4.33	10.0
Rajasthan	59374	14740	44634	6.18	6.00	5.84	5.0
Sikkim	3088	1267	1821	0.25	26.00	0.30	24.0
Tamil Nadu	40351	2204	38147	5.28	7.00	3.97	12.0
Telangana	20980	0	20980	2.91	13.00	2.06	17.0
Tripura	23875	19890	3985	0.55	23.00	2.35	16.0
Uttar Pradesh	97121	0	97121	13.45	1	10	1.0
Uttarakhand	42611	28147	14464	2.00	19.00	4.19	11.0
West Bengal	86481	40115	46366	6.42	6.00	8.51	2.0
Total	1016662	294514	722148	100.00		100.00	

Source: Calculated from XV FC Report

Appendix Table 4: Grants in aid demand of Kerala through its Memorandum to 14th FC

Sl. No.	Categories of grants in aid demanded
1	Special problems grants
2	Registration
3	Police
4	Prisons
5	Maintenance of roads and bridges
6	Maintenance of irrigation costs
7	Inland water ways
8	Protection of the coasts
9	Conservation of water
10	Construction of mini reservoirs and check dams to conserve water
11	Comprehensive plans for the upliftment of vulnerable Adivasis
12	The national food security act 2013
13	Fisheries
14	The health sector
15	State disability initiative
16	National university for disabilities and rehabilitation sciences
17	Elder care in the state
18	E governance and IT services
19	Networking Kerala
20	E citizens services of various departments
21	Taking care of the migrant workers
22	Tourism
23	Youth affairs and sports
24	Heritage conservations
25	Agriculture
26	Revenue
27	Nurturing innovation and fostering entrepreneur ship in the youth of Kerala
28	Infrastructure creation at IT parks
29	Modernisation of manufacturing at public sector undertakings
30	Strengthening and sustaining traditional sector industries
31	Coir industries
32	Industrial infrastructure creation
33	Modernisation of fire and rescue services
34	Fire and rescue services academy
35	Renewable energy initiatives
36	Coastal shipping development
37	Vizhinjam international deep water multipurpose sea port
38	Mitigation of man animal conflict

Source: 14th FC Memorandum, Government of Kerala

2

Growing Vertical Imbalance: A case for redefining the Divisible Pool⁷

Abstract

- This chapter examines the need to redefine the divisible pool of taxes in India, given the growing fiscal imbalance between the Union and the States.
- The Gross Revenue (GR) of the Union, that includes Gross Tax Revenue (GTR), Non-tax Revenue and non-debt receipts, has recorded an annual compound annual growth of 12 percent during a decade.
- However, while the overall revenue pool expands, the divisible pool - the portion shared with states has not recorded commensurate increase on account of the surge in cesses and surcharges leading wide gap between the share of the divisible pool in Gross Revenue and Gross Tax revenue of the union government.
- In light of these findings, following recommendations are made; first, increase vertical devolution from 41 percent to 50 percent, Secondly, no cess and surcharge should be allowed to continue beyond specific time period. For Kerala, the report projects three scenarios based on the increased tax share from 1.925% to 2.5% of 41% devolution, increased tax devolution to 50 percent - maintaining the current 1.925 percent share, yielding Rs. 207,343 crore for the 16th Finance Commission tenure and increasing to a 2.5 percent share (based on past averages), resulting in Rs. 269,277 crore during the same period. These projections consider the trend of declining state tax shares and potential for tax share reinstatement given increased devolution. The Sixteenth Finance Commission needs to seriously consider these proposals to ensure more equitable resource distribution between the union and state governments.

⁷ Prepared by Dr Aswathy Rachel Varughese, Assistant Professor, GIFT, Dr Sumalatha B.S , Assistant Professor, GIFT & Smt Anitha Kumary L, Visiting Faculty, GIFT

1. Introduction

India's fiscal federal system faces a critical challenge of redrawing the financial relationship between the union and state governments. At its core in the imperative redefine the divisible pool of taxes with the continuously growing revenue kitty of the union government. The divisible pool is the source from which the states receive their share of taxes from the union government. The Sixteenth Finance Commission needs to seriously consider the states' demand to enhance the size of the divisible pool and increase the share of vertical devolution. *Therefore, the present report examines the union government's expanding revenue pool, concerns about the shrinking size of the divisible pool and the need to redefine the divisible pool. It also looks into the portion of revenue retained by the union government post-resource transfers.*

It is generally held that in India's fiscal federal system, the union government retains control over the major sources of revenue, subnational governments shoulder greater expenditure responsibilities, leading to Vertical Fiscal Imbalance (VFI). Globally VFI is learned to be higher for India compared to other fiscally federal countries like Brazil and Canada (Reserve Bank of India, 2023). Meanwhile, the horizontal imbalances persist due to inter and intra-regional disparities (Bird & Tarasov, 2004). According to the traditional fiscal federalism theories, intergovernmental transfers can mitigate issues associated with inequality, externalities, and poor quality in the delivery of local public goods (Oates, 1999). From the Indian context, intergovernmental transfers, facilitated primarily through tax devolution (Article 270) and grants recommended by the Finance Commission (FC) (Article 275), aim to mitigate these imbalances. The tax devolution or the central share of taxes that commands the major share of total transfers is sourced through a divisible pool, defined as the Gross Tax Revenue (GTR) of the union government net of cess and surcharges and collection cost.

2. Trends in the Union Revenue

Over the past decade, the union government's Gross Revenue (GR) has grown impressively, with a compound annual growth rate of 12 percent at Rs. 43.09 lakh crore in 2024-25 (Budget Estimates, BE). This revenue pool or GR comprises Gross Tax Revenue (GTR), non-tax revenue, and non-debt receipts. GTR, the largest component (Rs. 38.31 lakh crore), has mirrored this growth trajectory (Table 1). Other components, such as non-tax revenue and non-debt receipts, amount to Rs. 4 lakh crore and Rs. 0.79 lakh crore respectively in 2024-25 (BE). The union government's debt receipts, Rs.16.82 lakh crore during the same period are excluded from the GR calculation. However, a closer examination reveals a concerning trend: while the overall revenue pool expands, the divisible pool - the portion shared with states is shrinking in relative terms.

Table 1: Revenue position of the union government (In Rs. Lakh crore & percentage)

Year	Gross Tax Revenue (Rs. Lakh crore)	Gross Revenue (Rs. Lakh crore)	Share of GTR in GR (%)
2009-10	6.25	7.74	80.7
2010-11	7.93	10.47	75.7
2011-12	8.89	10.48	84.8
2012-13	10.36	12.15	85.3
2013-14	11.39	13.79	82.6
2014-15	12.45	14.94	83.3
2015-16	14.56	17.80	81.8
2016-17	17.16	20.54	83.5
2017-18	19.19	22.27	86.2
2018-19	20.80	24.29	85.6
2019-20	20.10	24.06	83.5
2020-21	20.27	22.92	88.4
2021-22	27.09	31.14	87.0
2022-23 (A)	30.54	34.12	89.5
2023-24(RE)	34.37	38.69	88.8
2024-25(BE)	38.31	43.09	88.9

Source: Union Receipt Budget, various years

3. Trends in Divisible Pool

The divisible pool, defined as the GTR of the union government net of cess and surcharges as well as collection cost, has been steadily shrinking over the years, primarily due to two factors - the increasing revenue generated from cess and surcharges, which are excluded from the divisible pool, and the expanding gross revenue of the union government.

The union government's revenue from cess and surcharges has significantly increased in recent years, now at Rs. 5.39 lakh crore. Similarly, collection costs have surged to Rs. 2.68 lakh crore (Table 2). The revenue collection from cess and surcharge as a share of GTR is showing a marked rise from 5.16 percent to 14.07 percent during 2009-10 and 2024-25 (Figure 1). This has led to a marked contraction in the share of the divisible pool in gross revenue and gross tax revenue. Between 2009-10 and 2024-25, the divisible pool's share of GTR fell from 86.2 percent to 78.9 percent (Receipt Budget, 2024) (Figure 2). When viewed as a proportion of Gross Revenue, the decline is even starker, dropping to 70.2 percent. There is a 9-point gap between the divisible pool as a share of GR and GTR. This shrinkage has significant implications for state finances.

Previously, the union government fully retained all corporation taxes and customs duties, with only income tax and excise duty being shared with the states. The 80th Constitution Amendment in the year 2000 added all union taxes to the divisible pool except cess and surcharges. Initially, these exclusions were based on specific FC recommendations, but the constitutional amendment provided legal backing for such exclusions.

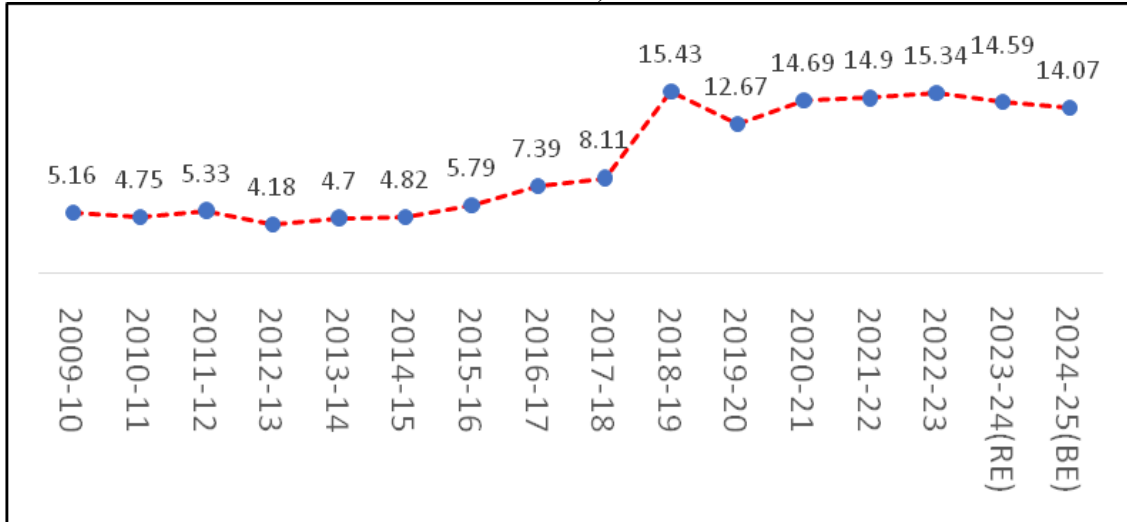
Table 2: Size of the divisible pool (Rs. lakh crore & percentage)

Year	Gross Tax Revenue (Rs. Lakh crore)	Cess and Surcharge (Rs. Lakh crore)	Collection Costs (Rs. Lakh crore)	Divisible Pool (Rs. Lakh crore)	Share of DP in GT (%)	Share of DP in GR (%)
2009-10	6.25	0.42	0.44	5.39	86.2	69.6
2010-11	7.93	0.51	0.56	6.86	86.5	65.5
2011-12	8.89	0.60	0.62	7.67	86.3	73.2
2012-13	10.36	0.62	0.73	9.01	87.0	74.2
2013-14	11.39	0.74	0.80	9.85	86.5	71.4
2014-15	12.45	0.62	0.87	10.96	88.0	73.4
2015-16	14.56	0.86	1.02	12.68	87.1	71.2
2016-17	17.16	1.29	1.20	14.67	85.5	71.4
2017-18	19.19	1.56	1.34	16.28	84.8	73.1
2018-19	20.80	3.21	1.46	16.14	77.6	66.4
2019-20	20.10	2.55	1.41	16.15	80.3	67.1
2020-21	20.27	2.98	1.42	15.87	78.3	69.2
2021-22	27.09	4.04	1.90	21.16	78.1	68.0
2022-23	30.54	4.69	2.14	23.72	77.7	69.5
2023-24(RE)	34.37	5.02	2.41	26.95	78.4	69.7
2024-25(BE)	38.31	5.39	2.68	30.23	78.9	70.2

Source: Union Receipt and expenditure Budget, various years

Note: collection cost is assumed at 7 percent, derived from the previous averages

Figure 1: Revenue collection of the union government from cesses (as a percentage of GTR)



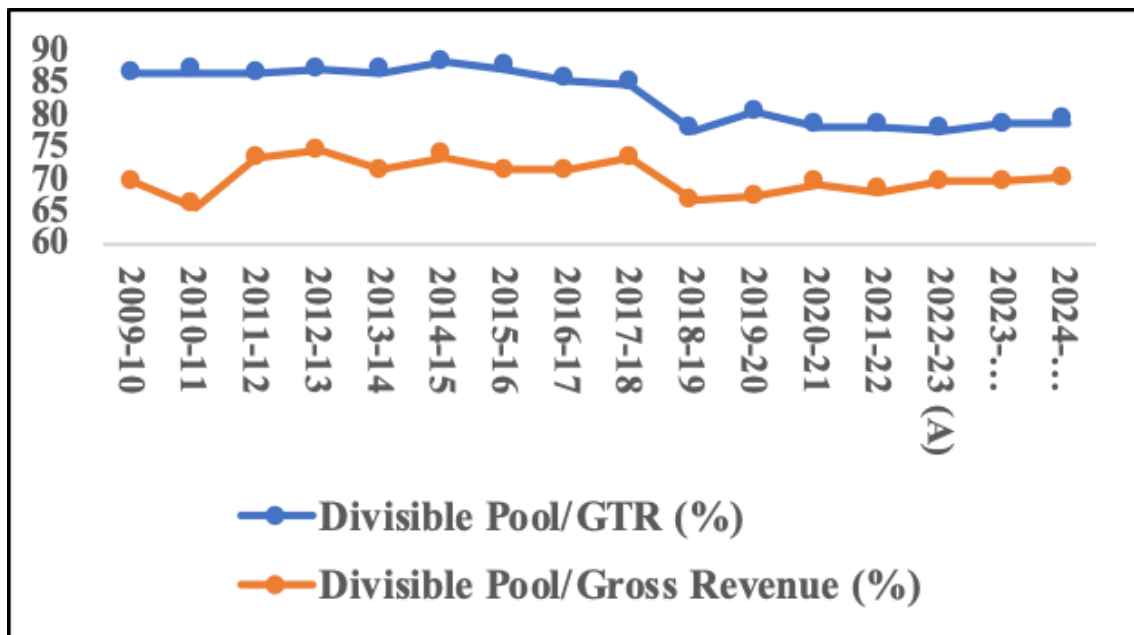
Source: Union Receipt Budget, various years

Despite recommendations for higher vertical devolution by recent Finance Commissions⁸, the actual share of taxes received by states has consistently fallen short of

⁸ The 14th FC (2015-16 to 2019-20) recommended a higher share of 42 percent compared to the previous commission (2010-11 to 2014-15) (XIV FC, 2013). The 15th FC recommended a 41 percent tax devolution (XV FC, 2020).

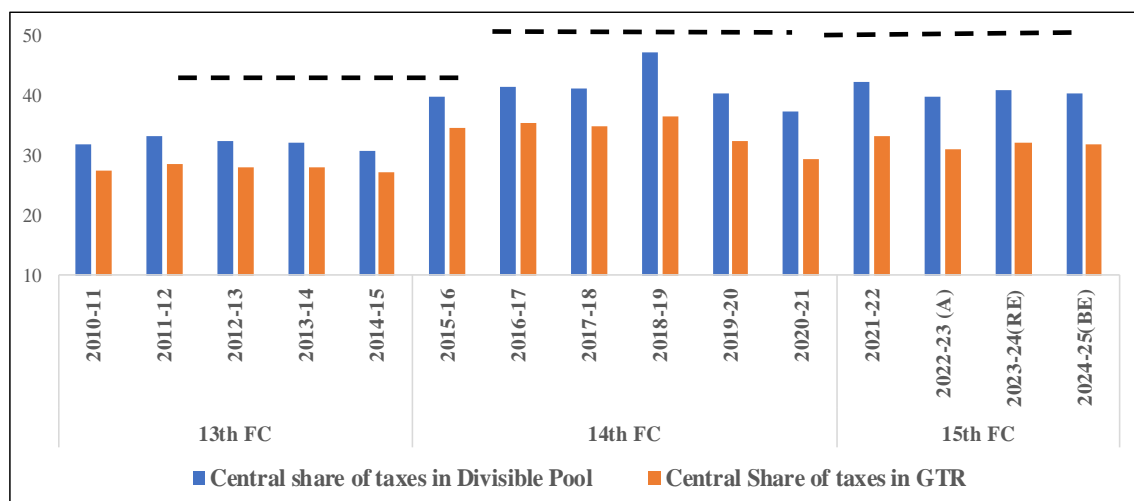
targets (Figure 3). It is evident from the proportion of the central share of taxes in GTR of the government is at 30.39 percent, way lower than the proposed devolution. This shortfall is exacerbating the already significant VFI in the country, where states bear 64 percent of total expenditures but collect only 37 percent of taxes. The situation becomes even direr when examining the union government’s revenue retention post transferring the resources to the state governments.

Figure 2: Evidence of shrinking divisible pool (In percentage of GR and GTR)



Source: Authors’ calculation from the Union Receipt Budget, various years

Figure 3: Actual versus proposed tax devolution (In percentage)



Source: Authors’ calculation from the Union receipt budget, various years

Note: The dotted lines indicate the recommended tax devolution share by respective FCs

4. Transfers by the Union Government

The total resource transfers to the state from the union government include the central share of taxes and grants from the centre. These grants consist of FC grants and non-FC grants. Transfers outside the purview of FC recommendations are conditional, tied, or discretionary. State governments cannot meet their specific needs with non-FC grants. Therefore, transfer dynamics are crucial in shaping the fiscal relationship between the union and state governments. According to Table 3, the central share of taxes constitutes the largest portion of transfers and has remained stagnant over the years.

Table 3: Transfers as a share of gross revenue (In Percentage)

	Central Share of Taxes	FC Grants	Non-FC Grants	Total Transfers to the state
2009-10	21.30	6.08	13.42	40.80
2010-11	20.95	4.67	10.95	36.57
2011-12	24.38	4.98	12.81	42.17
2012-13	24.00	3.98	11.55	39.53
2013-14	23.07	4.87	10.06	38.00
2014-15	22.61	4.78	17.36	44.75
2015-16	28.44	4.75	13.56	46.75
2016-17	29.60	4.65	12.68	46.93
2017-18	30.21	4.14	14.08	48.43
2018-19	31.35	3.86	14.25	49.46
2019-20	27.05	5.14	17.08	49.27
2020-21	25.96	8.03	20.06	54.05
2021-22	28.85	6.66	13.33	48.84
2022-23 (A)	27.80	5.06	20.66	53.52
2023-24 (RE)	28.55	3.63	17.20	49.38

Source: Authors' calculations from Union receipt budget, various years

5. Substantial revenue retained by the union government post-resource transfers

Post-transfers through tax devolution and grants, the union government holds onto approximately 50 percent of the revenue pool, despite its expenditure commitments are only 37 percent. On the other hand, states bear about 63 percent of expenditure responsibilities. This lopsided distribution is putting immense pressure on state governments, particularly in South India, where protests and legal actions against the union government are gaining momentum recently.

The prevailing imbalances in revenue sharing significantly contribute to the contraction of fiscal space of states, especially considering the sub-national governments' diverse and expanding expenditure responsibilities. Nevertheless, the states' dependence on transfers from the union government, measured by the ratio of transfers to their expenditure is still unfavourable to many states particularly southern states. It gives room for interrogation about the existing vertical sharing mechanism.

6. Way forward

Increase the vertical devolution from 41 to 50 percent

As states grapple with the challenging task of balancing fiscal objectives and fulfilling their extensive expenditure responsibilities, the need for redefining the divisible pool becomes increasingly apparent. Therefore, enhancing the size of the divisible pool and increasing the vertical devolution share is essential. Given the challenges in expanding the divisible pool through constitutional amendments, an immediate step would be to increase the vertical devolution share from 41 percent to 50 percent. The 9-point gap between the share of divisible pool share in Gross Revenue and Gross Tax Revenue could be the basis for increasing the devolution share to 50 percent. A higher devolution percentage would partially offset the exclusion of cess and surcharge and provide states with access to a larger share of overall union revenues.

Enhance the size of the divisible pool in tandem with union government's growing revenue pool

As a long-term measure, the necessary constitutional amendments need to be in place to enhance the size of the divisible pool in tandem with the rising GR of the union government. To tap the increasing revenue from cess and surcharges by the states, the Finance Commission could propose a flexible range for distributing net proceeds during its award period. This range would have a base percentage, which could increase or decrease based on how the share of surcharges and cesses in GTR changes. The union government should also make this data public with the budget to make the tax devolution more transparent. For instance, if the total share of surcharges and cesses rises by a certain percentage (say, 2 percent) in any year compared to the start of the award period, the amount lost from the divisible pool should be calculated and compensated. The states' share of net proceeds should then be increased proportionally to safeguard their interests. This can be done even without any constitutional amendments (Mohan, 2023); (Rangarajan & Srivastava, 2023).

Reduction of cess and surcharge rates on income and corporate taxes

Reducing cess and surcharge rates on income tax and corporate tax, while simultaneously increasing the sharable portion of these taxes, could effectively address the issue of cess and surcharge exclusion. This means lowering the additional charges (cess and surcharge) that are currently added to income and corporate taxes. Besides, it helps raising the percentage of the main tax revenue that is distributed to states. This approach aims to solve the problem of states not receiving a share of the cess and surcharge revenue and benefit states financially without placing additional burdens on taxpayers.

7. Empirical exercise of projecting variables

Based on the analysis, increasing the tax devolution share is an immediate and feasible option to address imbalances in revenue sharing. The scenario of increased vertical devolution from 41 percent to 50 percent is illustrated below. The states have long demanded an increased share in vertical devolution. Including cess and surcharge may not immediately resolve the revenue sharing imbalances. Therefore, increasing the share

of vertical devolution could provide relief for the states, considering the substantial revenue retained by the union government and the expenditure responsibilities borne by the states.

Increasing the share of tax devolution from 41 percent to 50 percent

As there is continuous increase in cess and surcharge collections of Union Government which is excluded from the divisible pool, the existing tax devolution would also be raised from 41 per cent to 50 per cent. This has been continuously raised by states in their FC memorandums.

Table 4 portrays the scenario of increased tax devolution to 50 percent. In the table, the Gross Tax Revenue (GTR) is projected based on a logarithmic trend and calculates the corresponding amounts for the central share of taxes and the divisible pool, assuming the devolution share is at 50 percent. The size of the divisible pool is calculated net of cess and surcharges, as well as a 7 percent collection cost from the GTR. The states' share in the GTR and the divisible pool have been calculated and compared with the corresponding Finance Commission (FC) recommendations. Although there is an increase of vertical devolution share to 50 percent, the actual devolution trails due to the increasing size of cess and surcharge.

Table 4: Projections in the scenario of 50 percent vertical devolution (In Rs. crore)

FC Duration	Year	Divisible Pool	Central share of taxes to states	States' share in DP
15th FC 41 percent	2021-22	2115964	898392	42.46
	2022-23	2371740	948406	39.99
	2023-24(RE)	2695107	1104494	40.98
	2024-25(BE)	3023461	1219783	40.34
	2025-26	3297190	1351848	41.00
16th FC 50 percent	2026-27	3595700	1797850	50.00
	2027-28	3921237	1960618	50.00
	2028-29	4276245	2138123	50.00
	2029-30	4663394	2331697	50.00
	20230-31	5085594	2542797	50.00

Source: Authors' computation based on the union receipt budgets, various years

8. Kerala's projected share of tax devolution

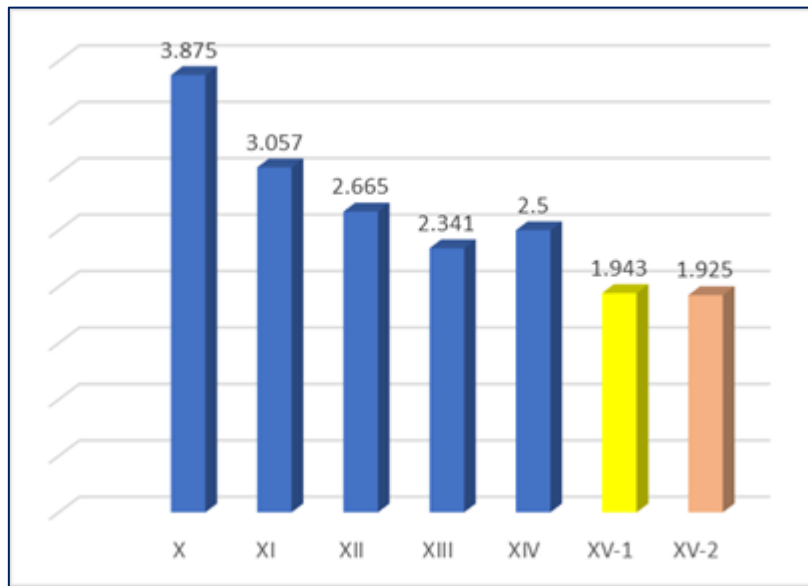
In this section, Kerala's share of tax devolution is projected under three scenarios – in the first scenario (Table 5), the 1.925 percent share is maintained while the overall devolution share increases to 50 percent. The underlying assumption of maintaining the share is that, over the past FCs, there is a general tendency of declining tax share (Figure 4). Table 6 provides the share of Kerala for the respective years during 16th FC.

The second scenario considers an increased tax share for the state of Kerala, on an average of 2.5 percent of 41 percent, reinstating the previous commissions' share (Table 7). The divisible pool is estimated at Rs. 2,15,42,171 crore for the tenure of the 16th FC (2026-27

to 2030-31), based on the calculations provided above. The year wise tax share of Kerala during the 16th FC period is shown in Table 8.

In the third scenario, along with the overall tax share of horizontal devolution increase to 50% of divisible pool and Kerala's tax share increases to 2.5% of it (Table 9). Table 10 gives the share of Kerala tax amount for the respective years during the 16th FC. Kerala's gain of revenue under different scenarios is given in Table 11.

Figure 4: Kerala's share in tax devolution from 10th to 15th Finance Commission



Source: Authors' calculation based on various Finance Commission Reports

Table 5: Scenario 1- Kerala's share of divisible pool in case of 50 percent increase in tax devolution (In Rs. crore)

	Divisible pool	Kerala's 1.925 percent share if Tax share is 50 percent
15 FC	13511535	
16 FC	21542171	207343

Source: Authors' estimation from union receipt budget, various years

Table 6: Projections of Kerala's tax share from 2026-27 to 2030-31 for respective years

Year	Kerala's Tax Share (1.925 percent of 50 percent)
2026-27	34608.6
2027-28	37741.9
2028-29	41158.9
2029-30	44885.2
2030-31	48948.8
Total	207343.4

Source: Authors' estimation from union receipt budget, various years

Table 7: Scenario -2- Increased tax share for Kerala to 2.5 percent (In Rs. crore)

	Divisible pool	Kerala's 2.5 percent share of 41 percent
15 FC	13511535	
16 FC	21542171	220807.24

Source: Authors' estimation from union receipt budget, various years

Table 8: Scenario 2- Increased year wise tax share for Kerala to 2.5 percent of 41 percent of tax devolution (In Rs. crore)

FC	Year	Kerala's share of 2.5% in 41 percent
16th FC 41 percent	2026-27	36855.925
	2027-28	40192.679
	2028-29	43831.511
	2029-30	47799.789
	20230-31	52127.339
	Total	220807.24

Source: Authors' estimation from union receipt budget, various years

Table 9: Scenario -3- Increased tax share for Kerala to 2.5 percent (In Rs. crore)

	Divisible pool	Kerala's 2.5 percent share if Tax share is 50 percent
15 FC	13511535	
16 FC	21542171	269277.1

Source: Authors' estimation from union receipt budget, various years

Table 10: Projections of Kerala's tax share from 2026-27 to 2030-31 for respective years

Year	Kerala's Tax Share (2.5 percent of 50 percent)
2026-27	44946.3
2027-28	49015.5
2028-29	53453.1
2029-30	58292.4
2030-31	63569.9
Total	269277.1

Source: Authors' estimation from union receipt budget, various years

Table 11: Kerala's gain of revenue under different scenarios (in crore)

Scenarios	Conservative	Scenario 1	Scenario 2	Scenario 3
Tax share	1.925%	1.925 of 50 percent	2.5% of 41%	2.5% of 50%
Amount for 2026-27 to 2030-32	170021.6	207343.4	220807.2	269277.1
Difference		37321.8	50785.6	99255.5

9. Kerala's tax share projection: A snapshot

Scenario 1:

- If devolution increases to 50 percent, the total tax share would rise to Rs. 1,07,71,085 crore.
- This would result in Kerala receiving a higher share of Rs. 2,07,343 crore.
- This amount is based on maintaining at least the 15th Finance Commission's recommended share of 1.925 percent for Kerala.
- The assumption of 1.925 percent is justified by the observed trend of decreasing tax shares over recent Finance Commission periods.
- In Scenario 1, the revenue gain would be Rs 37322 crore for the period from 2026-27 to 2030-31.

Scenario 2:

- If vertical devolution increases, the state's average share could potentially return to 2.5 percent of existing 41 percent, which were the average shares in the past few previous Finance Commissions.
- In this case, Kerala's total share would amount to Rs. 220807 crore with a revenue gain of Rs 50786 crore during the 16th FC period.

Scenario 3:

- If vertical devolution increases, the state's average share could potentially return to 2.5 percent, which were the average shares in the past few previous Finance Commissions.
- In this case, Kerala's total share would amount to Rs. 269,277.1 crore

10. Suggestions for improving tax devolution

- a) Increasing the share of tax devolution from 41 percent to 50 percent.
- b) Increasing the share of central share of tax of Kerala from 1.925 per cent to 2.5 per cent
- c) Enhancing the size of the divisible pool in tandem with the growing revenue pool of the union government
- d) Allow states to benefit from increasing cess and surcharge revenue. For this, Finance Commission should propose a flexible range for net proceeds distribution aligning with an increase in the cess and surcharge. Set a base percentage for

distribution and adjust this percentage based on changes in cess and surcharge share of GTR.

- e) Reducing cess and surcharge rates on Income Tax and Corporate Tax and correspondingly increasing the rate of a sharable portion of the income tax and corporate tax. Hence the states will benefit without burdening the taxpayers.

11. Conclusion

The divisible pool dilemma has sparked fresh constitutional debates and calls for fiscal reforms. As a long-term measure, the necessary constitutional amendments need to be in place to deal with the surging cess and surcharges. Hence, the Sixteenth Finance Commission would redefine the divisible pool for mitigating the imbalances in vertical devolution. The suggested approach aims to make tax devolution more responsive to changes in revenue composition of union government and fairer to states.

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On the Horizontal devolution

3

The Prosperity Paradox: Devolution Conundrum for the Finance Commission⁹

Introduction

Vertical and horizontal imbalances are common features of most federations, and India is no exception. States, being closer to people and more sensitive to local needs, have been assigned functional responsibilities involving expenditures disproportionate to their assigned sources of revenue, resulting in vertical imbalances. As observed by the 15th FC, States together are responsible for over 62 per cent of the combined expenditure of the Union and the States. In contrast, their entitlement is limited to only about 37 per cent of the total revenue. Further, horizontal imbalances across states result from factors such as historical backgrounds, differential endowment of resources, and capacity to raise resources. Unlike in most other federations, differences in the developmental levels in the Indian States are very sharp. The Finance Commission (FC), appointed every five years as mandated by the Indian Constitution, is entrusted with the responsibility of recommending how much of the Union's net tax revenue is to be devolved to the States (size of the divisible pool) and how it to be shared among the States (read as subnational entities). Thus, the FCs, in many ways, are the cornerstone of federal relations in the country. In this context, the appointment of FCs has been a matter of great public interest as its terms of reference are scrutinised as are the recommendations made at the end of their deliberations. So far, 15 Finance Commissions have submitted their recommendations, and the 16th FC has been recently appointed. One could argue that the Finance Commissions have accomplished their constitutional mandate of fiscal devolution in a highly commendable manner by being sensitive to the inequality at the vertical (between the Union and the States) and horizontal (between States) level and contributed much towards holding India together.

Although constitutionally, the core mandate of any finance commission is the division of resources between the union and states; while making recommendations, the commission needs to consider the prevailing macroeconomic situation, fiscal trends, and expenditure needs of all levels of government. Past finance commissions introduced changes in both vertical and horizontal sharing of resources and provided innovative recommendations, be it fiscal responsibility, local-level fiscal decentralisation, or environmental and climate change. The COVID-19 pandemic has changed the fiscal landscape of both Union and State governments. The government debt-to-GDP ratio has reached an all-time high (90% in 2021-22), and India dreams of achieving developed country status by 2047. At the same time, there is a clear tendency for growing vertical imbalances. The state's share of the Union government's gross tax revenue has been on the decline due to a growing share of

⁹ Prepared by Prof K. J. Joseph, Director, GIFT and Dr Kiran Kumar Kakarlapudi, Assistant Professor, GIFT.

cess and surcharges. While making the recommendations, the sixteenth FC has to consider the new aspirations of the economy and growing vertical and horizontal imbalances. In this article, we make a case for revisiting income distance criteria, which receives the highest weight in the devolution criteria. We argue and show the empirical evidence that per-capita income is not a good proxy for fiscal capacity and therefore, some of the high-income states are unduly disadvantaged. Yet, there remains a crucial issue with the core criterion being adopted in the devolution of the divisible pool as it is not in sync with the structural changes in the economy and India's new vision of a *Viksit Bharat (Developed India)* by 2047.

Delving into devolution

In devolving the divisible pool, the FCs have been guided by three critical criteria: need-based, equity-based, and efficiency-based. The indicators and weights assigned for each criterion changed over time. The distribution of Union government taxes over the last 15 FCs could be categorised into three phases. In the first phase, an overwhelming weightage was assigned to the population ranging from 80 to 90 per cent, and the residual weightage ranging from 10 to 20 per cent was assigned to contribution. While the first seven FCs gave weightage to need-based criteria, the equity considerations gained traction from the 8th FC onwards, thus assigning a weight of 22.5 per cent to the inverse of per capita income of States and 45 per cent weightage to the distance of the per capita income of a State from the highest per capita income. The introduction of elements of equity in the distribution formula was by and large welcomed. The third phase began from the 10th FC. While continuing with higher weightage to the equity criteria, tax collection efforts (efficiency) were introduced instead of the weightage given by tax contribution. The Tenth Commission also inducted disability factors represented by area and infrastructure distance into the distribution formula for the first time. The Commission assigned a weight of 5 per cent each to these factors.

Indicator	X FC	XI FC	XII FC	XIII FC	XIV FC	XV FC
Population (1971)	20	10	25	25	17.5	15#
Demographic change and population (2011)					10	
Demographic Performance						12.5
Income Distance	60	62.5	50	47.5	50	45
Fiscal Discipline		7.5	7.5	17.5		
Tax effort	10	5	7.5			2.5
Area	5	7.5	10	10	15	15
Index of infrastructure	5	7.5			7.5	
Forest cover						
Forest and Ecology						10

2011 census

Source: Based on reports of X-XV Finance Commissions

The Eleventh Finance Commission carried forward the shift favouring equity considerations in the formula for the inverse distribution of States' share in all Union taxes. The recommendation of the Commission to reduce the weightage given to the

population to 10 per cent and to assign a weightage of 62.5 per cent to per capita income distance had resulted in the reduction of shares of high-income and middle-income States in tax devolution. This evoked a sharp reaction from these States, even though the Commission assigned a combined weightage of 12.5 per cent to tax effort and fiscal discipline. These States contended that the better performing States were being penalised under the dispensation of the Finance Commissions and that this was creating a moral hazard for States to remain profligate and not to improve their fiscal situation. Though a need was felt to reward the States for better performance, it gathered momentum in the wake of the recommendation of the Eleventh Finance Commission according to higher weightage to equity. The Twelfth Finance Commission increased the weight of the population from 10 to 25 per cent and reduced the weight assigned to the distance of per capita income from 62.5 per cent to 50 per cent. Furthermore, the Commission doubled the weightage assigned to efficiency parameters like tax effort and fiscal self-sufficiency.

Table 2: Inter se Share of Union Taxes

States	1995-2000 10 FC	2000-05 11 FC	2005-10 12 FC	2010-15 13 FC	2015-20 14 FC	2020-21 15 FC	2021--26 15 FC
Andhra Pradesh	8.465	7.701	7.356	6.937	4.305	4.111	4.047
Arunachal Pradesh	0.17	0.244	0.288	0.328	1.370	1.760	1.757
Assam	2.784	3.285	3.235	3.628	3.311	3.131	3.128
Bihar	12.861	14.597	11.028	10.917	9.665	10.061	10.058
Chhattisgarh	0	0	2.654	2.470	3.080	3.418	3.407
Goa	0.180	0.206	0.259	0.266	0.378	0.386	0.386
Gujarat	4.046	2.821	3.569	3.041	3.084	3.398	3.478
Haryana	1.238	0.944	1.075	1.048	1.084	1.082	1.093
Himachal Pradesh	0.704	0.683	0.522	0.781	0.713	0.799	0.830
Jammu and Kashmir	1.097	1.290	1.297	1.551	1.854	0	0.000
Jharkhand	0	0	3.361	2.802	3.139	3.313	3.307
Karnataka	5.339	4.930	4.459	4.328	4.713	3.646	3.647
Kerala	3.875	3.057	2.665	2.341	2.500	1.943	1.925
Madhya Pradesh	8.290	8.838	6.711	7.120	7.548	7.886	7.850
Maharashtra	6.126	4.632	4.997	5.199	5.521	6.135	6.317
Manipur	0.282	0.366	0.362	0.451	0.617	0.718	0.716
Meghalaya	0.283	0.342	0.371	0.408	0.642	0.765	0.767
Mizoram	0.149	0.198	0.239	0.269	0.460	0.506	0.500
Nagaland	0.181	0.220	0.263	0.314	0.498	0.573	0.569
Odisha	4.495	5.056	5.161	4.779	4.642	4.629	4.528
Punjab	1.461	1.147	1.299	1.389	1.577	1.788	1.807
Rajasthan	5.551	5.473	5.609	5.853	5.495	5.979	6.026
Sikkim	0.126	0.184	0.227	0.239	0.367	0.388	0.388
Tamil Nadu	6.637	5.385	5.305	4.969	4.023	4.189	4.079
Telangana	0	0	0	0	2.437	2.133	2.102
Tripura	0.378	0.487	0.428	0.511	0.642	0.709	0.708
Uttar Pradesh	17.811	19.798	19.264	19.677	17.959	17.931	17.939
Uttarakhand	0	0	0.939	1.12	1.052	1.104	1.118
West Bengal	7.471	8.116	7.057	7.264	7.234	7.519	7.523
Source: Based on reports of X-XV Finance Commissions							

The criteria used by the Finance Commissions for the inter se distribution of tax shares across States can be broadly grouped under a) factors reflecting needs, such as population

and income measured either as the distance from the highest income or as inverse, b) cost disability indicators, such as area and infrastructure distance and c) fiscal efficiency indicators, such as tax effort and fiscal discipline. The indicators and weights assigned for each criterion changed over time. The 15th Finance Commission, for instance, considered tax and fiscal efforts (2.5%), forest and ecology (10%), demographic performance (12.5%), area (15%), population (15%), and income distance (45%) (Table 1). The most important one is the income distance, measured by the distance of states' per capita income compared to the average per capita income of the top three States. Accordingly, the States with lower per-capita income received higher entitlement to the divisible pool, and their share declined as the per-capita income increased. The 15 FC assigned 60 per cent weight to income distance and population. The distribution formula over the previous five FCs led to a reduction in the relative share for some states. For example, the share of Tamil Nadu declined by 2.55 per cent, followed by Kerala (19.5%) and Karnataka (1.6%) (see Table 2). The observed decline in the share of the three states is because of a continuous improvement in their rank in per-capita GSDP, on the one hand, and effective control of the population. Some high-income states have been making a case for lowering the weight to income distance criteria as performers are penalised. However, any weight adjustment must be sensitive to low-income states, as the gap between rich and poor states has widened, notwithstanding the higher share of transfers.

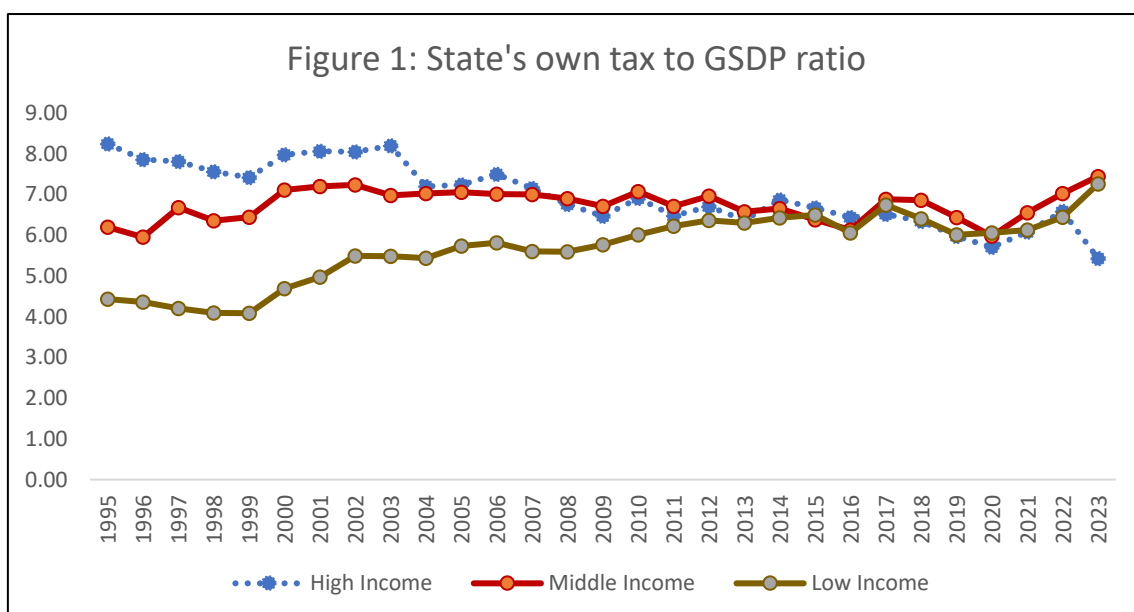
State	1995-2002	2003-2012	2013-2023
Andhra Pradesh	6.85	7.53	6.69
Arunachal Pradesh	1.03	2.12	4.62
Assam	3.85	5.12	4.95
Bihar	4.06	4.72	5.83
Chhattisgarh		7.11	7.06
Goa	7.41	6.96	7.31
Gujarat	7.33	6.67	5.62
Haryana	7.00	7.24	6.24
Himachal Pradesh	5.03	5.50	5.52
Jharkhand		4.83	5.61
Karnataka	8.51	9.14	6.80
Kerala	8.31	7.67	6.66
Madhya Pradesh	5.88	7.45	6.57
Maharashtra	7.18	7.04	6.94
Manipur	1.45	2.21	4.03
Meghalaya	3.08	3.49	5.39
Mizoram	0.80	2.03	2.89
Nagaland	1.43	1.77	3.19
Orissa	4.75	5.61	6.26
Punjab	6.35	7.05	6.50
Rajasthan	5.93	6.44	6.31
Sikkim	5.09	5.68	3.34
Tamil Nadu	8.60	8.46	6.05
Telangana			6.84

Tripura	2.29	3.41	3.85
Uttar Pradesh	5.20	6.59	7.65
Uttarakhand		5.60	5.25
West Bengal	4.46	4.61	5.33
All States	6.15	6.55	6.35

The Income Distance Paradox

The observed decline in the relative share of some states like Kerala and Karnataka could be due to the high weight attributed to income distance criteria as measured by per-capita income.

The presumption is that the states with higher per capita income will have a higher tax capacity as measured by the tax to GSDP ratio, enabling them to mobilise the needed revenue to provide their citizens with essential minimum public goods. However, many empirical studies have shown that the state's tax revenue as a percentage of GSDP started declining over time, especially in high-income states (Mohan and Shyjan, 2021). The SOTR GSDP ratio is on a downward trend in high-income states such as Gujarat, Haryana, Karnataka, Kerala and Tamil Nadu. At the same time, low-income states such as Uttar Pradesh, Bihar, Odisha, etc., have steadily increased their tax-to-GSDP ratio (Table 3). The trend becomes clear when we compare the tax revenue performance of high-income, middle-income, and low-income states based on per-capita income. We have considered the average per-capita GSDP from 2015-22 to categorise the states into three groups. The SOTR-GSDP ratio of high-income states stood at 8.24 per cent in 1995, declining continuously from 2003 onwards. The value declined to 6.4 per cent by 2022-23. In the case of low-income states, the share has increased consistently from 4.43 per cent in 1995-96 to 6.4 per cent in 2022-23. The middle-income states, too, experienced a decline in the share of the SOTR-GSDP ratio from 2000 onwards, except for a recent rise from 2020 onwards (Figure 1).



While the SOTR-GSDP ratio is on the decline, the per-capita GSDP of states increased over time. Contrary to the convergence in SOTR_GSDP between high and low-income states, there is a clear divergence in per-capita GSDP between high, middle and low-income states (Figure 2). In 1995, the per-capita GSDP of high-income states was 1.8 times higher than that of low-income states, which increased to 3 times by the end of 2022-23 (Figure 3). This clearly shows that higher per capita income does not necessarily yield higher tax revenues. The weak relationship between per-capita income and the SOTR-GSDP ratio is evident in Figure 3. Though a positive relationship exists between per-capita income and SOTR during the period under consideration (1995-2022), it weakens over time, as evidenced by a flatter linear fit in recent periods. The correlation coefficient between per-capita income and the SOTR-GSDP is 0.36 and statistically significant during 1995-2002. The value of correlation declined significantly over time to 0.12 and 0.06 during 2003-12 and 2012-22 respectively.

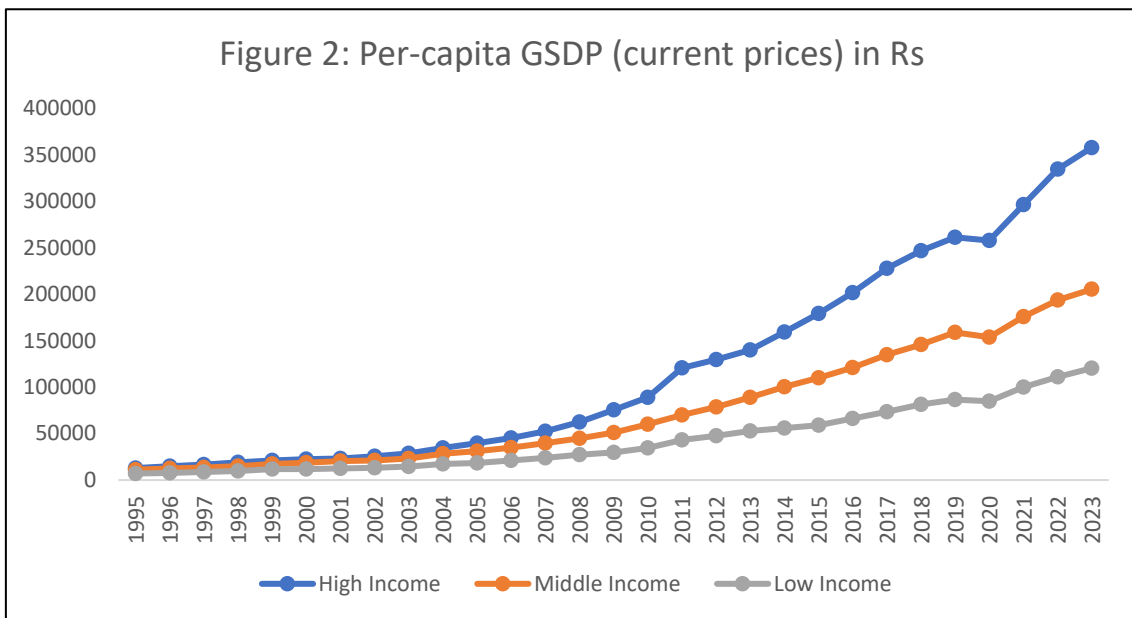


Figure 3: Per-capita GSDP and SOTR

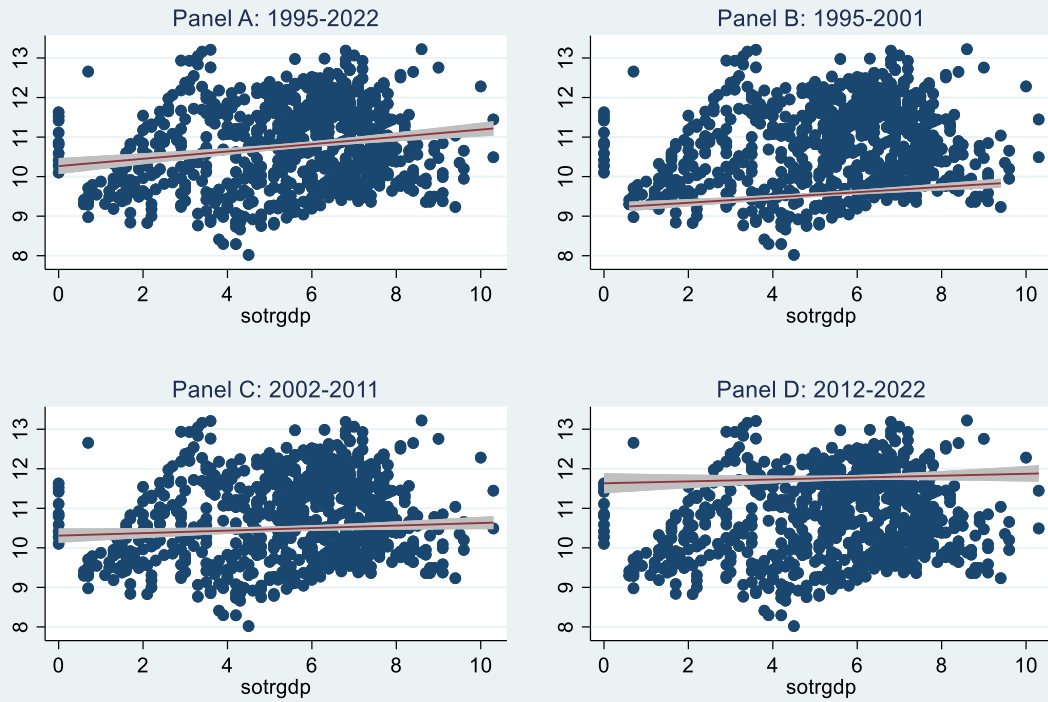
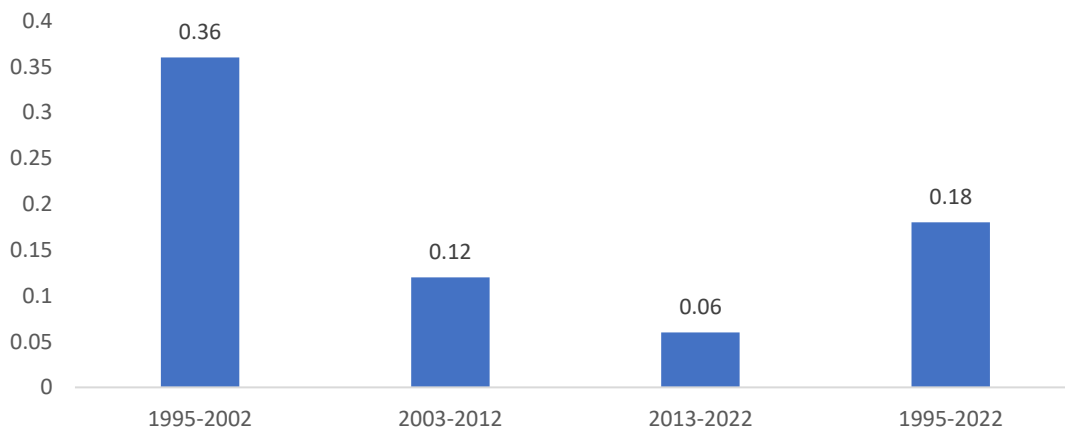


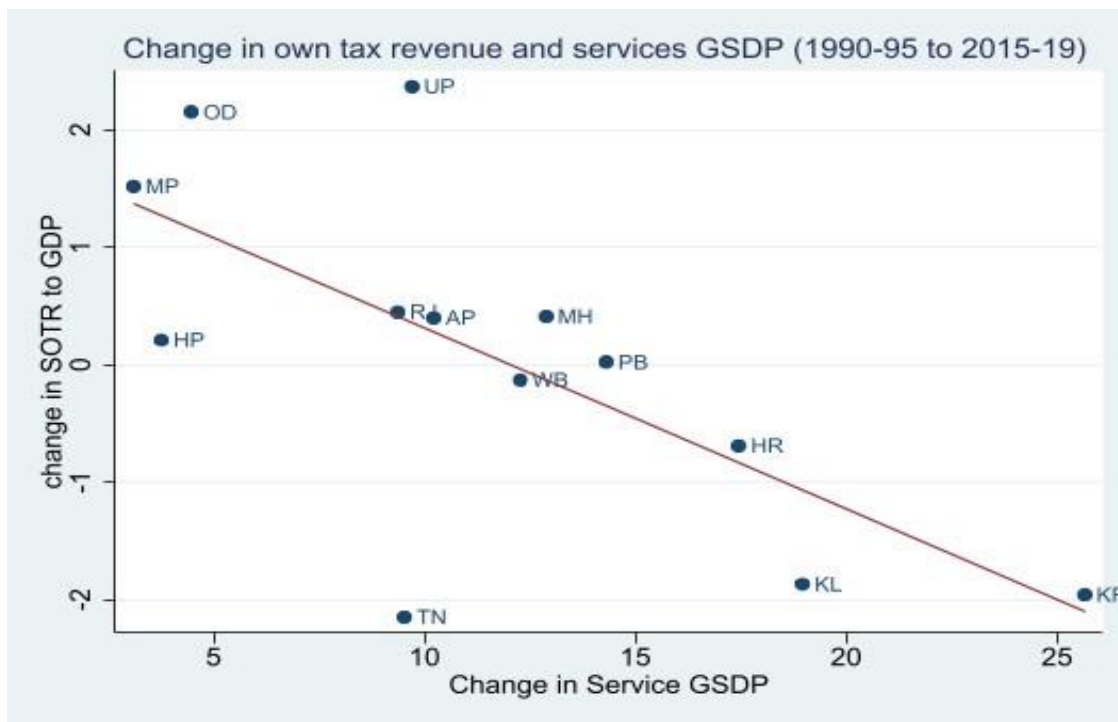
Figure 4: Correlation between tax base and per-capita GSDP



However, studies by the Gulati Institute of Finance and Taxation (GIFT) and the National Institute of Public Finance and Policy (NIPFP) have shown a paradox of declining tax-to-GSDP ratio with rising per capita income across the Indian States. To illustrate, from the first half of the 1990s to the five years ending 2020, the own tax to GSDP ratio of high-income States declined from 8.8 percent to 6.1 percent, while that of low-income States increased from 5.9 percent to 6.2 percent. Further, given the devolution criteria, their share in the divisible pool also goes southwards. Thus, the higher-income states are faced with a double whammy; higher per capita income drives their own tax to GSDP downwards and it also causes a reduction of their share in the divisible pool. This being the reality, there are obvious limits to the use of per-capita income as a proxy for fiscal capacity.

The paradox of the negative relationship between per-capita income and own tax to GSDP ratio could be attributed to the structural change in the economy of the State concerned along with the division of taxing powers between the Union and the States. The growth of the Indian economy after the economic reforms is contributed mainly by the services sector. The relative contribution of the service sector to GSDP and their growth varies across the States. From 1990-94 to 2016-20, the share of services in GSDP increased by 25 percent in Karnataka, 19 percent in Kerala, and 17.3 percent in Haryana. Concomitantly, Karnataka experienced the highest decline (2.9%) in own tax to GSDP ratio followed by Kerala (2.8%) and Haryana (1.7%). Similarly, Madhya Pradesh and Orissa showed the lowest increase in the share of services, 1.1 percent and 3 percent, and their own tax to GSDP ratio increased by 1 percent and 1.7 percent respectively.

The observed paradox of declining tax to GSDP ratio of States having service sector-induced higher per-capita income needs to be seen in the light of the division of taxing powers between the Union and the States. According to the Finance Act 1994, which extends to India except for the State of Jammu and Kashmir, the constitutional right to levy service tax is vested with the Union Government. This, in turn, worked towards depriving the State Governments of their potential tax revenue from the growing service sector until the Goods and Service Tax was implemented in 2017. Introduction of GST, however, GST could not resolve the issue because the major services like health, education, and public administration are exempted from GST, leading to poor revenue mobilization from these services. A study by GIFT revealed that services that contribute to 64 percent of GSDP in Kerala contribute to only 17 percent of total GST revenue collection.



Apart from the structural changes in the economy of the States concerned, their output orientation also influences the tax base of the subnational economies. Experts have argued that since exports are not subject to taxation, the States that derive their higher per capita GSDP from exports are bound to be losers of tax revenue. Thus viewed, States driven by export-oriented manufacturing and services like software lose heavily on their tax base and tax effort as seen in the case of Karnataka and Tamil Nadu.

Income distance criteria: A call for adaptation

The adoption of per-capita income as a prime devolution criterion when the service sector-driven structural change and exports emerged as the economy's growth engine has acted as a double whammy for the high-income States. Their share in the divisible pool was cut because of their higher per capita income, while their tax effort declined as their growth was led by services and exports for which they were not entitled to tax. The persistence of the primacy of income distance as a devolution criterion suggests that the FC could be more sensitive to the changing character of the Indian economy and its new aspirations. Hence, a paradigm shift in the approach of the Finance Commission involves adopting a strategy of walking on two legs. While handholding the laggards, the performers are not to be penalised. The 16th Finance Commission may consider reducing the weight of income distance criteria with a corresponding increase in the weight of the need-based criteria. Alternatively, it could consider an adjusted per-capita GSDP weighed by the sectors of GSDP for which taxes are levied and the State's contribution to the country's exports.

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Andhra Pradesh	3.88	4.01	4.08	4.03	3.88
Arunachal Pradesh	1.74	1.74	2.40	1.64	1.64
Assam	3.17	3.09	3.07	2.89	3.01
Bihar	10.43	9.90	9.09	8.94	9.77
Chhattisgarh	3.43	3.39	3.76	3.25	3.30
Goa	0.38	0.38	0.40	0.31	0.29
Gujarat	2.87	3.05	3.07	3.87	3.45
Haryana	0.90	0.99	1.00	1.47	1.26
Himachal Pradesh	0.88	0.89	1.01	0.87	0.83
Jharkhand	3.46	3.35	3.28	3.11	3.29
Karnataka	3.28	3.55	3.86	4.39	3.90
Kerala	1.99	2.14	2.25	2.45	2.24
Madhya Pradesh	7.68	7.53	7.65	7.20	7.41
Maharashtra	6.63	6.97	7.17	8.10	7.51
Manipur	0.73	0.72	0.79	0.60	0.62
Meghalaya	0.77	0.76	0.87	0.67	0.68
Mizoram	0.50	0.50	0.57	0.41	0.41
Nagaland	0.58	0.57	0.64	0.48	0.48
Odisha	4.55	4.52	4.67	4.25	4.34
Punjab	1.91	1.94	1.86	2.01	1.96
Rajasthan	6.09	5.98	5.70	5.83	5.93
Sikkim	0.38	0.39	0.42	0.30	0.29
Tamil Nadu	3.81	4.15	4.27	4.82	4.33
Telangana	1.74	1.92	2.05	2.40	2.10
Tripura	0.71	0.70	0.76	0.60	0.61
Uttar Pradesh	18.73	18.11	16.75	16.81	17.99
Uttarakhand	1.19	1.21	1.42	1.25	1.20
West Bengal	7.61	7.53	7.13	7.06	7.27

Demographic Transition and Fiscal Dynamics: Exploring the Impact of Population Ageing on Fiscal Federal Aspects¹⁰

Abstract

The current study proposes an adjustment to the Finance Commission's devolution formula, incorporating the share of the population aged 60 and above to mitigate fiscal challenges posed by demographic transition. By introducing a variable called population aging with a weightage of 5%, the new formula aims to account for the varying pace of demographic transition among Indian states. By addressing potential inequities arising from this differential, the proposed formula seeks to ensure a fairer distribution of fiscal resources. Analysis demonstrates a slight increase in the shares of states with higher elderly populations upon inclusion of the population aging variable. However, the newly proposed formula has a limited impact on the overall progressivity of fiscal transfers, suggesting it as an alternative to the existing mechanism. This adjustment acknowledges the evolving demographics across Indian states and offers a step towards a more equitable allocation of resources amidst demographic shifts.

1. Demographic Dynamics in India: Shifting Age Structures and State Disparities.

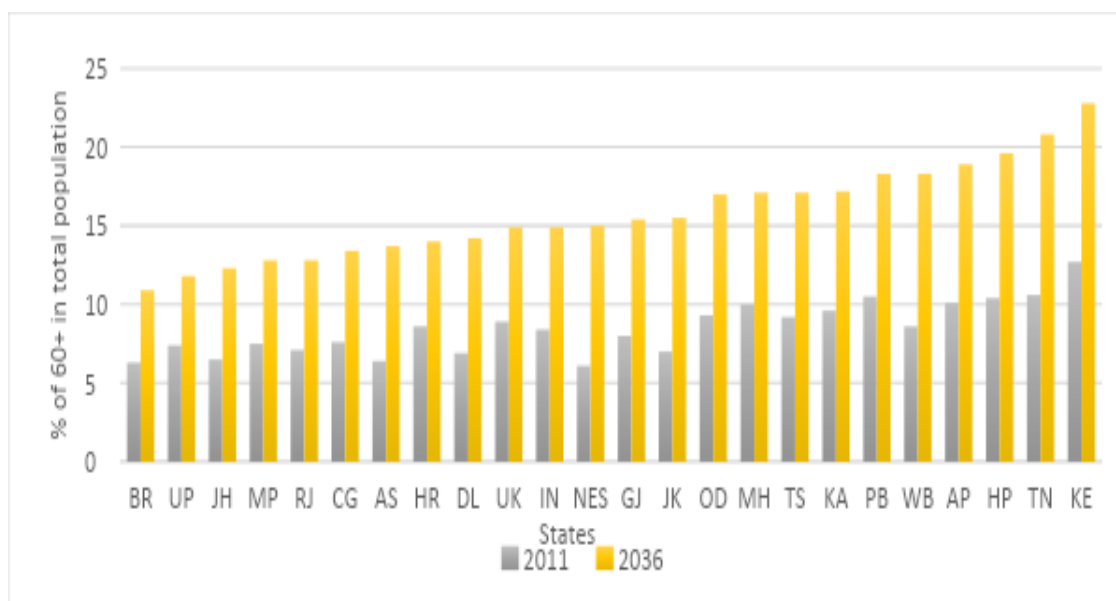
India's demographic transition exhibits some unique characteristics, differing somewhat from the global experience. Indian states exhibit diverse stages and the pace of demographic transition differs from each other. India's official population projections (Population Projection for India and States 2011-2036, 2020) indicate that the country will be transitioning from a very young country to a middle-aged country by 2036. However, this is the aggregate trend and it does not uniformly apply to the states. Several Indian states have already achieved below Replacement Level Fertility rates (RLF). At the same time, projections show that some states such as Uttar Pradesh, Madhya Pradesh, and Bihar continue to have high population growth on account of high fertility rate even beyond 2036 (Population Projection for India and States 2011-2036, 2020). However, this

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diverse type of demographic transition is not without its share of issues. We provide a detailed discussion in the forthcoming paragraphs.

Looking into the state-level statistics (Figure 1), we see that the states that have achieved replacement level of fertility (Kerala, Tamil Nadu etc) have generally higher proportion of aged (60 and above years) people in total population.

Figure-1: Share of persons aged 60 or above in total population



Source: National Commission on Population report 2019

In the case of Kerala, the share of elderly persons (aged 60 years and above) was 13% in 2011. According to the projections by the National Commission on Population, it is expected to increase to 23% in 2036. That is, almost every fourth individual in Kerala is expected to be a senior citizen by 2036. Similarly, most of the south Indian states and Himachal Pradesh, Punjab, and West Bengal are expected to have an increased proportion of aged people in their total population by 2036. On the other hand, states like Bihar, Uttar Pradesh, Jharkhand, and Madhya Pradesh will have the lowest share of elderly population in total population. This increased share of elderly population poses a unique challenge to the state finances.

In a fiscal federal system like India, differential rate of demographic transition among states implies that states with faster transition may face significantly lower opportunities in generating revenue, but disproportionately higher responsibilities on the expenditure side until all states have converged in their demographic structure. This is particularly true in the Indian context as most of the demographically-induced expenditure such as health expenditure, pension payments, and social security measures largely come under the purview of state governments. However, the existing resource transfer mechanism via the Finance Commission has tended to ignore this particular source of horizontal

imbalance that is accentuating with each passing year. Assuming that aging independently affects expenditure responsibilities of states, it has implications for horizontal equity because Indian states vary quite starkly in their aging structure. Any fiscal federal arrangement that does not address such a factor will invariably be biased against states with higher share of 60 plus population, as their expenditure responsibilities are higher while revenue opportunities remain constrained in relation to states that have lower share of 60 plus population.

This leads us to our specific research question i.e., If states with a higher share of 60 plus population tend to have relatively larger expenditure burden, then what would be optimal fund devolution options which would ensure that states with faster pace of demographic transition are not overburdened with expenditure responsibilities. So far, such concerns have not been part of the fund devolution formula of the National Finance Commission (NFC). To address the aforementioned question, this study takes the 15th Finance Commission's devolution formula as a reference point. We modify the XVth NFC's fund devolution formula to address the issue of fiscal equity among states with different demographic transition dynamics. While we modify the devolution formula to arrive at a better devolution strategy, we make sure that the progressivity of horizontal transfers is maintained. The objective of this article is to propose an optimal fund devolution strategy that addresses concerns related to horizontal equity emerging from demographic transition differences among the states.

The empirical approach involves conducting a sensitivity analysis of each state's share in tax devolution from the Finance Commission (FC), following the FC's horizontal devolution formula. This analysis will be carried out by assigning hypothetical weights to the age structure of the population. During the modelling exercises, a constraint will be imposed to ensure that the progressivity of horizontal devolution is maintained at a level, at least as much as it is stipulated in the current formula.

2. Finance commission devolution based on population.

The fifteenth Finance Commission proposed a shift in the methodology for horizontal devolution by recommending a 15% weightage to population, using data from the 2011 census. This marks a departure from the longstanding practice of relying on the 1971 census figures. As rightly noted by Bhattacharjee (2021), this approach tends to penalize states that have effectively managed their population growth, as outlined in the National Population Policy of 1976. Particularly those states with a higher proportion of elderly people may suffer the most.

The population criteria have a twofold impact on the horizontal share of a particular state. Firstly, it results in a decrease in the percentage share of a state in the total population, leading to a loss. Secondly, population serves as a scaling factor in assessing the distance of per capita income and tax effort. Due to these two effects, states such as West Bengal, Andhra Pradesh, and Tamil Nadu underwent substantial decreases in FC's devolution, with West Bengal registering the most significant decline at (-0.55 % point), followed closely by Andhra Pradesh at (-0.54 % point) and Tamil Nadu at (-0.52% point). In contrast, Uttar Pradesh, Bihar, and Rajasthan emerged as the primary beneficiaries, experiencing substantial increases in their inter-state shares.

Demographic transition at this moment may appear to be a “rich states” problem because states that have currently a higher share of 60 plus population are relatively well-to-do. However, this may not necessarily be the case in future. For instance, one of the poorest states Odisha and West Bengal, a middle-income state, has already achieved replacement-level fertility (RLF). States in the northeastern part of India, such as Assam, have already achieved RLF. The average Total Fertility Rate (TFR) for the northeastern states, as per the 2020 population projection report, is lower than the replacement-level fertility, standing at 1.70. Therefore, not accounting for demographic structure within the devolution formula will cause a lot of ad-hoc arrangements giving undue discretionary power to the Union government. Therefore, it is important to tackle this challenge for establishing an optimal fund devolution framework to prevent states undergoing rapid demographic transitions from bearing an unwarranted burden of increased expenditure responsibilities.

To address this concern, our proposed solution involves the Finance Commission considering the age structure of the population. This approach involves assigning weightage to the percentage of the population aged 60 and above in the total population, introducing a more nuanced method for resource allocation. This approach will address the demographic realities and ensure a more equitable distribution of financial resources among the states.

3. Exploring the Inclusion of Population Ageing as a Variable in FC's Devolution Strategy

Here, we have incorporated a new variable denoted as the "share of 60 and above in the total population," derived from the 2011 census data in the FC formula. This variable is assigned a weightage of 5% in the overall horizontal devolution calculation. As part of this adjustment, we have decreased the weightage assigned to the Total Population variable from 15% (as stipulated in the XV Finance Commission) to 10%. To avoid the issue of double counting, the population considered for this adjustment is limited to individuals falling within the age bracket of 0-59. We have arrived at the weights of 5 % and 10 % after accounting for different combinations and considering the issue of progressivity. This measure does not disturb the existing level of distribution to a great extent. We present the details of the existing and the proposed formula in Table 1. Other than modifying the population variable, we do not make any other changes in the 15th FC formula. There is an obvious question of not using dependency ratio and using ageing population specifically. The argument is that both of these demographic segments do not contribute productively to the economy and therefore needs to be considered together when considering different aspect of demography.

However, we need to take consideration of the fact that one portion of the dependent population, i.e. the share of population below 15 years, is already counted and taken care of. That is there exists various schemes under both Union and state government, as well as finance commission sector specific grants, to take care of various aspect of the lives of the younger population such as health and education. However, while the elderly is counted there needs are not addressed anywhere in the discussion. Hence, we propose the following alternative.

Table- 1 : Criteria and Weights (%) for Horizontal Devolution by 15 the FC and the New Formula

Criteria	15 th FC	New Formula
Income Distance	45.0	45.0
Area	15.0	15.0
Population (2011)	15.0	10.0
Demographic Performance	12.5	12.5
Population Ageing (2011)	-	5
Forest and Ecology	10.0	10.0
Tax and fiscal efforts	2.5	2.5

Source: Authors' computations

4. Devolution Based on New Formula

The table 2 presents the comprehensive breakdown of horizontal tax share devolution resulting from the Finance Commission, based on our revised formula. The computation of each state's share, based on individual variables, adheres to the methodology outlined in Volume-II Annexes of the XV Finance Commission.

A) Income Distance

This criteria is aimed at enhancing the equalizing and progressive nature of the devolution formula, ensuring higher allocations for states with lower per capita income. In this context, per capita Gross State Domestic Product (GSDP) serves as a proxy for measuring the disparity in tax capacity among states. The calculation of each state's share involves considering the inter se share based on income distance, as specified in the XV Finance Commission's Annex 6.2. Multiplying this value by the designated weightage for income distance in the total devolution formula (45%) yields each state's share based on income distance.

B) Area

Finance Commissions have consistently incorporated area criteria in the devolution formula, justifying its inclusion based on the principle of need. The larger the geographical area, the higher the expenditure requirement for delivering services of a comparable nature. The computation of a state's share based on area involves the utilization of adjusted area shares, as specified in the XV Finance Commission's Annex 6.2. This share is then multiplied by the designated weightage for area in the total devolution formula, which is set at 15%.

C) Population

The population of a state serves as an indicator of the state's needs and requisites for financial expenditure in providing services to its residents. The allotment for each state is determined by their respective share of the population in the age group of 0-59, relative to the overall population (0-59) of all Indian states. In the proposed devolution formula,

a weightage of 10% is attributed to population, while in the existing formula, the weightage is 15 %.

D) Demographic Performance

This criteria aims to recognize and reward the efforts of states in improving human capital outcomes in education and health. The assessment of demographic performance involves utilizing the total fertility rate (TFR) data for all states. This calculation is achieved by employing the inverse of the TFR for each state, which is then scaled by the population data from Census 1971. In the total devolution formula, a weightage of 12.5 percent is allocated to demographic performance.

E) Population ageing

We introduce this criteria to prevent states undergoing rapid demographic transitions from shouldering an undue burden of heightened expenditure responsibilities. The computation of each state's allocation based on the population aging parameter involves determining the share of each state's population aged 60 and above in the total number of individuals aged 60 and above among all Indian states. In the total devolution formula, a weightage of 5 percent is designated for population aging.

F) Forest and Ecology

The utilization of forest cover as a criterion is employed with the reasoning that while the forest cover maintained by states yields broader ecological advantages, it also incurs opportunity costs that require compensation. The computation of state shares based on forest cover involves multiplying the inter se share of forest and ecology (as outlined in the XV Finance Commission's Annex 6.2) by the designated weightage for forest and ecology in the total devolution formula, which is set at 10%.

G) Tax effort

The inclusion of tax effort as a criterion aims to acknowledge and reward states demonstrating higher efficiency in tax collection. The tax effort of states is determined by initially computing the ratio of per capita own tax revenue to per capita Gross State Domestic Product (GSDP) over the period of three years (2016-17 to 2018-19). Subsequently, this ratio is scaled by the population of the state. In the overall devolution formula, a weightage of 2.5 percent is assigned to the tax effort.

Table 2: Inter se Shares of States based on new formula

State	2011,0-59 Pop'n (10%)	Demographic Performance (12.5%)	60+ Pop'n (5%)	Area (15%)	Forest Cover (10%)	Income Distance (45%)	Tax Effort (2.5%)	Total Inter se Share New Formula	Improvement (+)/ Deterioration (-)
Andhra Pradesh	0.41	0.83	0.25	0.69	0.41	1.38	0.11	4.07	0.0285
Arunachal Pradesh	0.01	0.01	0.00	0.35	1.33	0.05	0.00	1.75	-0.0035
Assam	0.27	0.32	0.11	0.33	0.34	1.69	0.05	3.11	-0.0185
Bihar	0.90	0.69	0.35	0.40	0.09	7.36	0.19	9.98	-0.0752
Chhattisgarh	0.22	0.23	0.10	0.57	1.01	1.21	0.06	3.40	-0.0096
Goa	0.01	0.02	0.00	0.30	0.03	0.01	0.00	0.38	-0.0020
Gujarat	0.52	0.63	0.27	0.83	0.14	0.99	0.12	3.49	0.0145
Haryana	0.22	0.21	0.11	0.30	0.01	0.20	0.05	1.09	0.0007
Himachal Pradesh	0.06	0.10	0.04	0.30	0.26	0.07	0.01	0.84	0.0060
Jharkhand	0.28	0.26	0.12	0.34	0.32	1.92	0.06	3.29	-0.0136
Karnataka	0.51	0.78	0.29	0.81	0.66	0.49	0.14	3.67	0.0229
Kerala	0.27	0.57	0.22	0.30	0.29	0.26	0.07	1.99	0.0656
Madhya Pradesh	0.62	0.55	0.27	1.30	1.06	3.86	0.16	7.81	-0.0346
Maharashtra	0.94	1.27	0.55	1.30	0.75	1.31	0.26	6.37	0.0554
Manipur	0.02	0.03	0.01	0.30	0.19	0.16	0.00	0.71	-0.0059
Meghalaya	0.03	0.01	0.00	0.30	0.25	0.16	0.01	0.76	-0.0077
Mizoram	0.01	0.01	0.00	0.30	0.15	0.03	0.00	0.50	-0.0024
Nagaland	0.02	0.01	0.00	0.30	0.15	0.08	0.00	0.56	-0.0048
Odisha	0.35	0.53	0.20	0.66	0.73	1.99	0.09	4.54	0.0148
Punjab	0.23	0.35	0.14	0.30	0.02	0.72	0.06	1.83	0.0214
Rajasthan	0.59	0.44	0.26	1.44	0.11	3.02	0.14	6.00	-0.0273
Sikkim	0.01	0.01	0.00	0.30	0.07	0.00	0.00	0.39	-0.0010
Tamil Nadu	0.60	1.25	0.39	0.55	0.38	0.83	0.16	4.15	0.0724
Telangana	0.30	0.45	0.16	0.47	0.27	0.37	0.09	2.11	0.0055
Tripura	0.03	0.04	0.01	0.30	0.15	0.16	0.00	0.70	-0.0045
Uttar Pradesh	1.71	1.54	0.70	1.01	0.17	12.20	0.47	17.81	-0.1275
Uttarakhand	0.09	0.10	0.05	0.30	0.46	0.11	0.02	1.12	0.0022
West Bengal	0.78	1.26	0.41	0.37	0.18	4.37	0.17	7.55	0.0281

With Population ageing being introduced in the existing FC's devolution formula, states with a population percentage of 60 and above are set to receive increased shares. Tamil Nadu is found to be the primary beneficiary, with a substantial gain of 0.0724%, followed by Kerala at 0.0656% and Maharashtra at 0.0554%. It is to be noted that the revised devolution formula ensures that even economically disadvantaged states like Odisha and middle-income states like West Bengal will experience positive outcomes.

From table 4, we see that the overall redistribution of the sharable resources between the states based on the new formula have not been radically different from the existing formula, implying that the proposed formula addresses the issue of aging without disturbing the status-quo to a great extent. However, to confirm the same, further analysis is required, which is presented in the following section.

5. Progressivity analysis current and new formula

In accordance with the study conducted by Anand et al. in (2016), we assess the current devolution formula's progressive nature. This is conducted to ensure that the states exhibiting lower per capita Gross State Domestic Product (GSDP) tend to receive significantly larger transfers per capita, on average. To ensure progressivity, we employ a cross-sectional regression analysis for the 20 major states. The model employed here uses the logarithm of per capita tax devolution as the dependent variable and the logarithm of per capita GSDP as the independent variable. The regression model is as follows:

$$In_pct = \beta_1 + \beta_2 * In_pcgdp$$

where: In_pct = log of per capita fund transfer to a state

In_pcgdp = log of per capita GSDP of a state

We present the regression results for the existing and the new formula in Table 3.

Table-3 Progressivity analysis current and new formula

Independent Variable	Fifteenth FC Formula	New Formula
In_pcgdp	-1.05***	-1.04***
constant	5.796***	5.738***
R-squared	0.476	0.470

Source: Authors' computations

The findings reveal that both the XV FC's formula and the new formula demonstrate a progressive character. The coefficient β_2 is determined to be statistically significant at the 5 percent level. Under XV the FC's formula, a 1 percent increase in per capita GSDP results in a -1.05 percent decrease in per capita tax devolution to the states. In the case of the new formula, although the value of β_2 experiences a marginal reduction to -1.04, it still maintains a progressive nature. It is important to point out that the inclusion of the population aging variable has only a limited impact on progressivity.

From the regression analysis, we confirm that the inclusion of population aging does not reduce the progressive nature of the devolution formula and the impact of population aging on progressivity is rather minimal (0.01 %).

6. Conclusion

The current study proposed an adjustment to the Finance Commission's devolution formula to incorporate the share of the population aged 60 and above, aiming to mitigate the fiscal challenges posed by demographic transition. In the new formula, we introduced a variable called population aging to account for the differential nature of demographic transition among the Indian states, with a weightage of 5 %. The new formula seeks to address the potential inequities arising from the varying pace of ageing among states. From the analysis, we demonstrated that the inclusion of the population ageing variable

results in slight increase in the shares of states with higher elderly populations. However, the newly proposed formula has limited impact on the overall progressivity of fiscal transfers and therefore could be considered as an alternative to the existing mechanism.

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5

Reassessing Kerala's Central Tax Share Loss for Enhanced Outcomes in Horizontal Devolution: A Contemplation for the 16th Finance Commission ¹¹

Abstract

This report reviews Kerala's experience under the 15th Finance Commission (FC) and proposes strategies for the 16th FC to enhance the state's share in horizontal devolution. It analyses three criteria: demographic performance, income distance, and tax effort. The most significant shifts occur due to changes in the income distance criterion, as Kerala's most significant loss stems from this criterion, whereas adjustments in other criteria lead to only marginal increases in the overall share. For demographic performance, considering the old-age population increases Kerala's share in DP from 4.5% to 4.77% (1.925% to 1.96%) and to 6.05% (from 1.925% to 2.12%) when focusing on the share of the old-age population. On income distance, there will be a slight increase in Kerala's share using the latest data due to a decrease in per capita income, with 2011 census data showing a higher share of 0.878 compared to 0.818 with projected 2021 data. For tax effort, if there is no scaling by population, Kerala's share rises significantly from 2.95% (15th FC) to 6.56%, but adjustments for population reduce it back to 2.95%. This report suggests that if the criterion is performance-based, states should be rewarded accordingly, avoiding the multiplicative effect of population, as this would significantly benefit states like Kerala.

Contents

As we approach the Sixteenth Finance Commission (16th FC), it is essential to review Kerala's experience, particularly its losses during the 15th FC, and to identify strategies that could be beneficial for the state. This contemplation explores Kerala's challenges under the 15th FC and highlights key areas where adjustments could prove advantageous, particularly in horizontal devolution. It provides an analysis of Kerala's losses by examining three different criteria under horizontal devolution and proposes a projected share for the 16th FC based on latest data.

Abstract of Key Analyses

¹¹ Prepared by Dr ShamnaThacha Paramban, Assistant Professor, GIFT.

I. Population Criterion

In contrast to preceding FCs, here weightage is given based on 2011 census data. So, there was widespread criticism from southern states that the criterion for revenue devolution was disadvantageous to them as they had implemented population control programs better than states in the north. For this 15th Fc introduced a new criterion based on performance, '**demographic performance**'. This part analyses about the drawback of this formula in attaining its objective as an incentive to such states.

- **Old-Age Population Inclusion:** Proposes the inclusion of a need-based share for the old-age population, suggesting that demographic performance should be evaluated either based on the old-age population or share of old age population/dependency ratio as a compensatory or performance basis.
- **Results:** The analysis shows that including the elderly population in any form would benefit Kerala. If demographic performance is calculated based on the old-age population, Kerala's share in DP increases from 4.5% to 4.77%. Moreover, using the share of the old-age population, Kerala's share rises significantly to 6.05% from 4.5%, but this affects other states. Additionally, the total tax share rises from 1.925% to 1.96% when calculated with the old-age population and increases further to 2.12% based on the share of the old-age population.

II. Income-Distance Criterion

- **Justification for Kerala's Losses:** Kerala's most significant loss stems from this criterion. The 15th FC assigned a weightage of 45% to income distance. This segment seeks to elucidate how Kerala incurred such a substantial loss and analyzes Kerala's share using latest data.
 - **15th FC Method:** Kerala's share in the Income Distance Criterion is 0.578, calculated by averaging per capita income and multiplying it by the 2011 population.
 - **Using the latest data,** Kerala's share is projected for the 16th Finance Commission using the same method as the 15th Finance Commission. Based on the 2011 census, Kerala's share would rise to 0.878, while using the projected 2021 census data, the share would be slightly lower at 0.818. This indicates that the 2011 census data shows a higher relative share for Kerala compared to the projected 2021 census data. It's clear that there will be a slight increase in Kerala's share using the latest data, due to a decrease in per capita income.

III. Tax Effort Criterion

- **Assessment Based on Performance:** If tax effort is the criterion for determining performance, states should be rewarded based on their tax performance, without the influence of population size. Currently, multiplying the tax-to-GSDP ratio by the 2011 population skews the results in favor of states with larger populations.

By avoiding population scaling, states like Kerala would benefit more, as their performance would be more accurately reflected in the distribution.

- Results: Evaluating tax effort based on performance increases Kerala's share from 2.95 (as per the 15th FC) to 6.56. Consequently, the total share also rises, moving from 1.925 to 2.008. However, multiplying this by the 2011 population reduces it back to 2.95.

Projected Change in Value with Different Share Percentages for Kerala							
		(%)- Change in Value with Different Share Percentages					
Years	divisible pool (crore)	1.95	2	2.1	2.2	2.3	2.4
2023-24 RE	11,04,493.71	21537.63	22089.87	23194.37	24298.86	25403.36	26507.85
2024-25 BE	12,19,782.85	23785.77	24395.66	25615.44	26835.22	28055.01	29274.79

Note: Author's calculation based on Union budget 2024-25. This table reflects a marginal increase in share when point-wise changes occur.

Note

- *This analysis has been prepared as an input to the Finance Department, examining the reasons for Kerala's significant losses in the last Finance Commission and highlighting the points which the state could potentially benefit. This analysis does not argue for changes in every criterion but aims to demonstrate that altering any single variable results in variation in the total tax share. The most significant shifts occur due to changes in the income distance criterion, whereas adjustments in other criteria lead to only marginal increases in the overall share.*
- *If the criterion for performance, states should be rewarded accordingly. Avoiding the multiplicative effect of population, and focusing solely on performance-based criteria, states like Kerala are expected to benefit significantly even if given a small weightage.*

I. Population Criterion: Fulfilling the Need-Based Principle

Introduction

The Fifteenth Finance Commission (FC) adjusted the methodology for determining states' shares, incorporating considerations of "fiscal needs, equity, efficiency, and performance." Accordingly, the Commission allocated weightage as follows: 45% to income, 15% each to population and area, 10% to forest and ecology, 12.5% to demographic performance, and 2.5% to tax and fiscal efforts. Unlike previous Commissions, the Fifteenth FC emphasized 2011 census data over older datasets, sparking criticism, particularly from southern states that had more effectively implemented population control measures compared to northern states. To address these concerns, the Fifteenth FC introduced a new criterion "demographic performance" focused on performance, this analysis examines the limitations of this formula in achieving its intended goal of incentivizing states that have successfully managed their population growth.

Rationale and Importance

The population criterion serves as a fundamental mechanism for resource allocation, ensuring that states receive resources proportionate to their population size and needs. The Fifteenth Finance Commission opted to use the 2011 census data rather than the outdated 1971 census data, aiming to more accurately reflect current demographic realities. This decision adversely impacts states that have effectively controlled their population growth and have invested more in human capital, resulting in a growing elderly population. This raises questions about whether the FC's recommendations genuinely adhere to the need-based principle, which should consider the specific needs of states with aging populations. It is crucial to assess whether the current criteria effectively balance the needs of an aging population with the allocation of resources.

Focus on *Demographic Performance Criterion*

The Finance Commission introduced the new criterion based on performance to incentivize states that have effectively controlled population growth. This criterion, weighted at 12.5%, evaluates states based on their Total Fertility Rate (TFR), with higher scores awarded to states with higher TFRs and vice versa.

Criteria and Calculation Method:

- According to the Terms of Reference (TOR) of the Fifteenth FC, states are evaluated on demographic performance based on their TFR. The score is calculated using the reciprocal of TFR, multiplied by the 1971 census data. As a result, states with larger populations, such as Uttar Pradesh (12.32), Maharashtra (10.12), West Bengal (10.11), and Bihar (5.1), receive a larger share of resources. Despite being a performance-based criterion, it still uses population as a parameter, leading to questions about its fairness. The significant question arises: What does the use of population in this context imply about the aging population? The impact of prior population control measures and investments in human capital is evident in a higher old-age dependency ratio. If the criterion is performance-based, states should be rewarded accordingly.

Proposal to Increase Kerala's Share

- Here analysis indicates that if the calculation is based on the old-age population, Kerala's share in DP will increase from 4.5% to 4.77% (based on the 2011 old-age population, 60 and above). It is proposed that if it's based on the population (projected) census for 2021 (Appendix, Table 1.3), Kerala's share will increase to 5.07%. However, if the calculation is based on the old-age share, Kerala's share would rise significantly from 4.5% to 6.05%. The same effect is observed when scaled by the old-age dependency ratio, where Kerala's share will increase to 6.1%, while the shares of other states would decrease (Table 1.4).
- Also, if calculated using the old-age population, the total tax share would increase from 1.925% to 1.96%. Conversely, if based on the share of the old-age population, the total share would rise from 1.925% to 2.1%.
- This indicates incorporating the elderly population in any form would benefit Kerala.

Conclusion

The current methodology for evaluating demographic performance and population criteria for resource allocation, particularly the use of population multipliers, does not fully address the needs and realities of states with aging populations or those that have effectively managed population growth. To achieve a more just allocation, the Commission should consider incorporating more relevant metrics, such as old age population or share of old age population, which would better reflect the demographic performance and specific needs of states, particularly those with higher proportions of elderly citizens. This approach would ensure that the allocation of resources is fair, equitable, and reflective of the current demographic realities, thereby supporting inclusive growth and development across all states.

Table .1. Demographic performance criterion-A comparison

States	Share in 15th FC	Rec of TFR* SOP	Rec of TFR*OAP
Andhra Pradesh	6.635	5.457	6.434
Arunachal Pradesh	0.08	1.775	0.059
Assam	2.596	2.643	1.944
Bihar	5.513	2.158	5.325
Chhattisgarh	1.836	2.743	1.670
Goa	0.195	6.147	0.212
Gujarat	5.043	3.320	4.767
Haryana	1.659	3.208	1.917
Himachal Pradesh	0.763	4.986	0.814
Jharkhand	2.09	2.314	1.820
Karnataka	6.207	3.632	6.473
Kerala	4.573	6.051	4.772
Madhya Pradesh	4.376	2.575	4.412
Maharashtra	10.12	4.415	11.738
Manipur	0.221	3.242	0.219
Meghalaya	0.107	1.129	0.079
Mizoram	0.05	2.107	0.055
Nagaland	0.095	2.141	0.100
Odisha	4.25	4.155	4.129
Punjab	2.793	4.770	3.145
Rajasthan	3.528	2.316	3.740
Sikkim	0.056	3.965	0.057
Tamil Nadu	9.998	5.619	9.615
Telangana	3.632	4.734	3.937
Tripura	0.345	3.930	0.342
Uttar Pradesh	12.318	2.509	11.924
Uttarakhand	0.809	3.587	0.861
West Bengal	10.113	4.374	9.446

Note: SOP = Share of Old Age Population (60+), OAP = Old Age Population (60+), Rec TFR = Reciprocal of Total Fertility Rate.

The table attempts to compare the 15th Finance Commission (FC) with the proposed criterion. The first column gives the share based on the 15th FC's calculation; the second

column shows the share when considering SOP, and the last column is based on OAP. Here, we used 2011 census data. It is proposed that if we take 2021 census data (not available but using projected data in Elderly in India, 2021), Kerala's share is shown to increase to 5.07%. If it is based on the old age share of the latest 2021 census, the share will further significantly improve.

II. Income distance criterion

Kerala's most significant loss stems from this criterion. The 15th FC assigned a weightage of 45% to income distance. This segment seeks to elucidate how Kerala incurred such a substantial loss.

Kerala's position; According to the TOR of the 15th Finance Commission, Kerala ranks second highest in income distance after Haryana (since Goa and Sikkim are not reference states, see Table. 2). In effect, Kerala is categorically treated as first because the FC calculated income distance by averaging the three-year per capita income and multiplying it by the 2011 population (see, 15th FC vol 11 annexes, annex 6.4, page 273). Kerala suffers greatly in this regard, exacerbated by rapid per capita income growth. The income distance criterion is based on the equity principle, meaning states with the lowest income receive a larger share. However, due to the population factor (considered twice, in per

$$\text{Inter se share of } i^{\text{th}} \text{ state} = \frac{D_i}{\sum_{j=1}^{28} D_j} \quad D_i = d_i * \text{POP}_{i2011}$$

capita income and multiplied by the 2011 population), states like Kerala and Haryana are perceived as highest in rank yet receive the lowest share (Table.2.1).

d_i = Per capita income distance

Kerala's Share Increase:

- a) **Based on the 15th FC's calculation:** Kerala's share is 0.578, determined by averaging the three-year per capita income and multiplying it by the 2011 census.
- **Using the latest data,** Kerala's share is projected to increase significantly. Based on the 2011 census, Kerala's share would rise to 0.878, while using the projected 2021 census; the share would be slightly lower at 0.818. This indicates that the 2011 census data shows a higher relative share for Kerala compared to the projected 2021 census data (Table.2.2). It's clear that there will be a slight increase in Kerala's share using the latest data, due to a decrease in per capita income.

Table 2:1 A comparison of income distance

State	D* based on PI as in 15th FC	States	D* based on GSDP
Goa	20433	Maharashtra	881936.7
Sikkim	20433	Tamil Nadu	881936.7
Hariyana	20433	Uttar Pradesh	906867
Kerala	20433	Karnataka	1009478
Karnataka	21128	Gujarat	1138136
Himachal Pradesh	27604	West Bengal	1377626
Telangana	28042	Rajasthan	1521506
Uttarakhand	28889	Andhra Pradesh	1573152
Tamil Nadu	30170	Telangana	1602765
Maharashtra	30550	Kerala	1643792
Gujarat	43013	Madhya Pradesh	1656946
Mizoram	60428	Haryana	1723624

Note: This table is provided to illustrate Kerala's loss. D* represents adjusted distance.

The second column shows the calculation based on per capita income as in the 15th Finance Commission (FC), while the fourth column shows income distance based on the average of Gross State Domestic Product (GSDP), using the same data as in the 15th FC. See the 15th FC Vol. II annexes, Annex 6.4, page 273. When per capita income distance is used, the distance is 20,433 (as per the FC's calculation where D* is multiplied by the 2011 census data). However, if it is based on the GSDP, the income distance is 1,643,792.

The table.2.2 provides a comparison of Kerala's share under income distance criterion. It compares the income distance criterion weights assigned by the 15th Finance Commission (FC) with those projected for the 16th Finance Commission based on recent data. The second column shows the share as determined by the 15th FC. The third and fourth columns project the share based on the latest data, with the third column reflecting the income distance scaled by the 2011 census and the fourth by the 2021 projected census data. The last column provides for understanding the share based on population. It clears based on the 2011 census, Kerala's share would rise to 0.878, while using the projected 2021 census data, and the share would be slightly lower at 0.818. This indicates that the 2011 census data shows a higher relative share for Kerala compared to the projected 2021 census data.

Table: 2.2 A Comparison of Income Distance Criterion Weights

1	2	3	4	5
States	share in 15 th FC	Projected Share Based on 2011 Census	Projected Share Based on 2021 Census	Share Based on Population
Andhra Pradesh	3.069	2.687	2.508	4.208
Arunachal Pradesh	0.1	0.065	0.063	0.117
Assam	3.752	3.767	3.708	2.649
Bihar	16.361	17.117	17.742	8.836
Chhattisgarh	2.692	2.741	2.775	2.168
Goa	0.025	0.004	0.004	0.124
Gujarat	2.201	0.966	0.977	5.130
Haryana	0.439	0.140	0.143	2.152
Himachal Pradesh	0.16	0.303	0.286	0.583
Jharkhand	4.262	4.593	4.695	2.800
Karnataka	1.093	0.182	0.174	5.186
Kerala	0.578	0.878	0.818	2.835
Madhya Pradesh	8.577	8.246	8.413	6.164
Maharashtra	2.907	3.613	3.507	9.538
Manipur	0.358	0.368	0.357	0.242
Meghalaya	0.354	0.363	0.352	0.252
Mizoram	0.056	0.051	0.050	0.093
Nagaland	0.179	0.203	0.197	0.168
Odisha	4.412	4.375	4.176	3.563
Punjab	1.611	1.798	1.724	2.355
Rajasthan	6.702	6.831	6.927	5.818
Sikkim	0.011	0.002	0.002	0.052
Tamil Nadu	1.843	1.245	1.156	6.124
Telangana	0.831	0.104	0.098	2.971
Tripura	0.36	0.357	0.347	0.312
Uttar Pradesh	27.105	28.634	29.009	16.959
Uttarakhand	0.247	0.452	0.448	0.856
West Bengal	9.714	9.916	9.345	7.747
	100	100.000	100.000	100.0000

Source: Author's computation based on 15th FC data.

Note: 15th FC Share = The share determined by the 15th Finance Commission, primarily based on 2011 census data and per capita income distance. 3rd column gives projected share using the latest data scaled to the 2011 census and 2nd column to 2021 census. The last column is given to compare with share based on population.

III. Tax Effort and Resource Allocation

The 15th Finance Commission (FC) has provided a framework for calculating tax effort that includes both performance and population factors. However, this framework has led to some unintended consequences, particularly disadvantaging states with smaller populations like Kerala when compared to larger states such as Bihar and Uttar Pradesh. Here's a detailed analysis of the issue and suggestions for addressing these disparities.

III- Tax Effort Criterion

Tax effort is measured by the Finance Commission (FC) as the ratio of a state's own per capita tax revenue to its per capita Gross State Domestic Product (GSDP). This calculation is based on data from a three-year period (2016–2019) and is then multiplied by the 2011 population (as detailed in the 15th FC, Volume II, Annexes, Annex 6.5, page 274).

Impact of Population Multiplication:

- States with a higher ratio of Tax/GSDP benefit more based on their tax performance. However, multiplying this ratio by the 2011 population skews the results in favour of states with larger populations. This results in states like Bihar and Uttar Pradesh appearing to have disproportionately high tax efforts, even if their actual performance might not be as robust as smaller states with better tax collection efficiency.

Example - Kerala:

1. Based solely on performance criteria, Kerala's tax effort share increases significantly from 2.95 to 6.56. Consequently, the total share also rises, moving from 1.925 to 2.008. However, when this figure is multiplied by the 2011 population, Kerala's share reverts to 2.95, illustrating the adverse impact of population multiplication on smaller states (Table.3).
2. Similar distortions occur in demographic performance criteria, where multiplying by population metrics can distort the overall assessment. For instance, Uttar Pradesh's share in this parameter becomes excessively high due to the inverse of fertility ratios scaled by population.

Table.3 difference in share based on Tax effort

As per 15 th FC (%)		Avoiding population scaling	
State	Share	State	Share
Uttar Pradesh	18.825	Goa	8.08
Maharashtra	10.546	Telangana	7.55
Bihar	7.651	Chhattisgarh	7
West Bengal	6.682	Uttar Pradesh	7
Madhya Pradesh	6.572	Maharashtra	6.97
Tamil Nadu	6.284	Madhya Pradesh	6.72
Rajasthan	5.645	Karnataka	6.63
Karnataka	5.454	Kerala	6.56
Gujarat	4.83	Andhra Pradesh	6.5
Andhra Pradesh	4.336	Tamil Nadu	6.47
Telangana	3.558	Punjab	6.3
Odisha	3.468	Haryana	6.25
Kerala	2.95	Odisha	6.14
Chhattisgarh	2.406	Rajasthan	6.12
Punjab	2.354	Gujarat	5.94
Jharkhand	2.235	Bihar	5.46
Haryana	2.133	West Bengal	5.44
Assam	2.042	Uttarakhand	5.11
Uttarakhand	0.694	Meghalaya	5.09
Himachal Pradesh	0.467	Himachal Pradesh	5.05
Meghalaya	0.203	Jharkhand	5.03
Tripura	0.176	Assam	4.86
Goa	0.159	Arunachal Pradesh	3.89
Manipur	0.121	Tripura	3.55
Arunachal Pradesh	0.073	Manipur	3.16
Nagaland	0.071	Sikkim	2.93
Mizoram	0.043	Mizoram	2.91

Source: Author's computation based on 15th FC data.

Note: Tax Effort (15th FC): Calculated using the ratio of a state's own per capita tax revenue to its per capita Gross State Domestic Product (GSDP), multiplied by the 2011 census data. Tax Effort (Without Population Multiplication): Calculated without multiplying by the population, providing a clearer assessment of tax effort without population bias.

Suggestions

- **Impact of Population Multiplication:** When tax effort is evaluated based on performance criteria alone, states with efficient tax collection like Kerala see significant benefits. However, multiplying by population once again shifts the advantage to states with larger populations. To ensure fair resource allocation, the tax effort calculation should focus solely on performance criteria without multiplying by population. This would more accurately reward states for their tax collection efforts.

Conclusion

Addressing these disparities is crucial for fostering inclusive growth and upholding the principles of cooperative federalism in India. While the Finance Commission's criteria aim to ensure equitable distribution, they must evolve to reflect the changing dynamics of state economies and their developmental priorities to ensure a fair allocation of resources among states. It is imperative to evaluate the criteria for resource allocation, considering the principles of fiscal federalism and the specific needs of each state, or to compensate with grants considering inter-state disparities.

Way forward for the 16th Finance Commission – A general perspective:

- **Revisit devolution formula:** Revisit the devolution formula to ensure fairness by reassessing the current structure, with a focus on fiscal federalism principles and addressing the unique needs of each state within the GST framework.
- **Include Cess and Surcharges:** Take measures to enhance revenue sharing among states by including a portion of cess and surcharges in the divisible pool.
- **Reevaluate Borrowing Restrictions:** Reassess the imposition of borrowing restrictions to prevent undue hindrance to states' ability to meet their financial obligations.
- **Balance Fiscal Discipline and State Needs:** Strike a balance between fiscal discipline and the necessity for states to finance development projects and welfare schemes.
- **Evaluate Resource Allocation Criteria:** Evaluate the criteria for resource allocation, considering fiscal federalism principles and state-specific needs. Alternatively, consider compensating with grants to address interstate disparities or support highly meritorious projects.
- **Reduce the emphasis on income distance** by lowering its weight from 45% and incorporating a composite index that combines per capita income with other indicators. This would better capture fiscal capacity and ensure more equitable distribution of resources.

Points which are beneficial to Kerala

- **Include a Share for the Old-Age Population:** Whether compensatory or performance-based, demographic performance should be based on the old-age population. If the share is based on the share of the old-age population or the old-age dependency ratio, it will be highly beneficial to Kerala but may affect other states.
- Or compensating by other measures. For example, grant related to old-age care (to foster the care economy).
- **Performance-Based Criteria:** If the criterion is performance-based, states should be rewarded accordingly. By avoiding the multiplicative effect of population and focusing solely on performance-based criteria, states like Kerala are expected to benefit significantly.
- **Reduce Emphasis on Income Distance:** Reduce the emphasis on income distance based on per capita income including a combined measure.

- **Decrease Weightage given to Area:** Reducing the weightage assigned to area, and considering factors like forest and ecology, as this criterion leads to a smaller share for Kerala.
- **Capital Investment grants:** One of the major confronting issues for Kerala is the growing revenue expenditure intertwined with committed expenditure. While Kerala gained from Revenue Deficit Grants in the fifteenth Finance Commission, there are arguments against these grants, suggesting that they could discourage efforts to curtail revenue expenditure. This concern is particularly relevant in the context of diminishing fiscal space for capital expenditure. Given this situation, states like Kerala would benefit from such a grant.

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Appendix

Table: 1.3 Demographic performances

States	SOA 2011	OAP	TFR	RT=recTFR	RT*SOP	RT*OAP	15th FC	SOA	OAP
Andhra Pradesh	10.1	5025	1.6	0.63	6.363	3165.75	6.635	5.457	6.434
Arunachal Pradesh	4.6	64	2.24	0.45	2.07	28.8	0.08	1.775	0.059
Assam	6.7	2079	2.16	0.46	3.082	956.34	2.596	2.643	1.944
Bihar	7.4	7707	2.93	0.34	2.516	2620.38	5.513	2.158	5.325
Chhattisgarh	7.8	2004	2.43	0.41	3.198	821.64	1.836	2.743	1.670
Goa	11.2	163	1.56	0.64	7.168	104.32	0.195	6.147	0.212
Gujarat	7.9	4787	2.03	0.49	3.871	2345.63	5.043	3.320	4.767
Haryana	8.7	2194	2.32	0.43	3.741	943.42	1.659	3.208	1.917
Himachal Pradesh	10.2	703	1.74	0.57	5.814	400.71	0.763	4.986	0.814
Jharkhand	7.1	2357	2.61	0.38	2.698	895.66	2.09	2.314	1.820
Karnataka	7.7	5791	1.81	0.55	4.235	3185.05	6.207	3.632	6.473
Kerala	12.6	4193	1.79	0.56	7.056	2348.08	4.573	6.051	4.772
Madhya Pradesh	7.9	5713	2.63	0.38	3.002	2170.94	4.376	2.575	4.412
Maharashtra	9.9	11107	1.91	0.52	5.148	5775.64	10.12	4.415	11.738
Manipur	7	200	1.86	0.54	3.78	108	0.221	3.242	0.219
Meghalaya	4.7	139	3.63	0.28	1.316	38.92	0.107	1.129	0.079
Mizoram	6.3	69	2.56	0.39	2.457	26.91	0.05	2.107	0.055
Nagaland	5.2	103	2.08	0.48	2.496	49.44	0.095	2.141	0.100
Odisha	9.5	3984	1.98	0.51	4.845	2031.84	4.25	4.155	4.129
Punjab	10.3	2866	1.86	0.54	5.562	1547.64	2.793	4.770	3.145
Rajasthan	7.5	5112	2.8	0.36	2.7	1840.32	3.528	2.316	3.740
Sikkim	6.7	41	1.44	0.69	4.623	28.29	0.056	3.965	0.057
Tamil Nadu	10.4	7510	1.58	0.63	6.552	4731.3	9.998	5.619	9.615
Telangana	9.2	3229	1.67	0.6	5.52	1937.4	3.632	4.734	3.937
Tripura	7.9	290	1.73	0.58	4.582	168.2	0.345	3.930	0.342
Uttar Pradesh	7.7	15440	2.61	0.38	2.926	5867.2	12.318	2.509	11.924
Uttarakhand	8.9	901	2.13	0.47	4.183	423.47	0.809	3.587	0.861
West Bengal	8.5	7742	1.68	0.6	5.1	4645.2	10.113	4.374	9.446

Table.1.4 Demographic performance based on projected data for 2021

States	FC ' share	F* OAP 2021
Andhra Pradesh	6.64	6.39
Assam	2.60	2.06
Bihar	5.51	4.98
Chhattisgarh	1.84	1.64
Gujarat	5.04	5.40
Haryana	1.66	1.92
Himachal Pradesh	0.76	0.85
Jharkhand	2.09	1.91
Karnataka	6.21	6.52
Kerala	4.57	5.07
Madhya Pradesh	4.38	4.21
Maharashtra	10.12	11.71
Odisha	4.25	4.10
Punjab	2.79	3.20
Rajasthan	3.53	3.81
Tamil Nadu	10.00	10.16
Telangana	3.63	3.86
Uttar Pradesh	12.32	11.04
Uttarakhand	0.81	0.88
West Bengal	10.11	10.26
All States	100.00	100.00

Note: Authors' own calculations are based on data from Elderly in India 2021. It is also assumed that if the aged population is 65+, Kerala would benefit more. However, due to the non-availability of data, this assumption cannot be verified.

Table: 1.5 Demographic performances based on ODR

States	TFR	rec of TFR	ODR	F*ODR2011	Share of each state	Ranking	
Andhra Pradesh	1.6	0.63	15.4	9.70	5.41	Kerala	6.14
Arunachal Pradesh	2.24	0.45	7.71	3.47	1.94	Goa	5.99
Assam	2.16	0.46	11.02	5.07	2.83	Tamil Nadu	5.55
Bihar	2.93	0.34	14.2	4.83	2.69	Andhra Pradesh	5.41
Chhattisgarh	2.43	0.41	13.07	5.36	2.99	Himachal Pradesh	5.11
Goa	1.56	0.64	16.77	10.73	5.99	Punjab	4.84
Gujarat	2.03	0.49	12.61	6.18	3.45	Maharashtra	4.54
Haryana	2.32	0.43	14.07	6.05	3.38	Karnataka	4.53
Himachal Pradesh	1.74	0.57	16.06	9.15	5.11	West Bengal	4.42
Jharkhand	2.61	0.38	12.65	4.81	2.68	Odisha	4.40
Karnataka	1.81	0.55	14.76	8.12	4.53	Tripura	3.96
Kerala	1.79	0.56	19.64	11.00	6.14	Uttarakhand	3.91
Madhya Pradesh	2.63	0.38	13.43	5.10	2.85	Sikkim	3.90
Maharashtra	1.91	0.52	15.66	8.14	4.54	Gujarat	3.45
Manipur	1.86	0.54	11.2	6.05	3.37	Haryana	3.38
Meghalaya	3.63	0.28	8.45	2.37	1.32	Manipur	3.37
Mizoram	2.56	0.39	10.21	3.98	2.22	Chhattisgarh	2.99
Nagaland	2.08	0.48	7.71	3.70	2.06	Uttar Pradesh	2.94
Odisha	1.98	0.51	15.45	7.88	4.40	Madhya Pradesh	2.85
Punjab	1.86	0.54	16.06	8.67	4.84	Assam	2.83
Rajasthan	2.8	0.36	12.96	4.67	2.60	Bihar	2.69
Sikkim	1.44	0.69	10.12	6.98	3.90	Jharkhand	2.68
Tamil Nadu	1.58	0.63	15.79	9.95	5.55	Rajasthan	2.60
Telangana	1.67	0.6		0.00	0.00	Mizoram	2.22
Tripura	1.73	0.58	12.24	7.10	3.96	Nagaland	2.06
Uttar Pradesh	2.61	0.38	13.85	5.26	2.94	Arunachal Pradesh	1.94
Uttarakhand	2.13	0.47	14.91	7.01	3.91	Meghalaya	1.32
West Bengal	1.68	0.6	13.19	7.91	4.42	Telangana	NA
All States	2.17	0.46	13.08	179.24	100.00		

Note: The data is based on 2011 census Therefore, Telangana is not included. ODR= Old Age Dependency ratio.

Table 2.1 Share based on Income Distance Criterion scaling by 2011 census

YEAR	GSDP			Per capita			Average	D=Distance	D*2011	Inter-state share
	2021	2022	2023	2021	2022	2023				
Andhra Pradesh	978581.5	1148471	1303524	527.87	2168.07	2456.65	2159.52	803.73	1735671	2.687
Arunachal Pradesh	30525.35	34774.76	39629.96	15.33	2246.43	2573.37	2270.34	692.91	1573141	0.065
Assam	339803	411453.8	493166.6	350.43	1163.02	1387.64	1173.44	1789.81	2100235	3.767
Bihar	567262.5	650302.4	751395.6	1230.83	520.58	593.52	524.99	2438.26	1280062	17.117
Chhattisgarh	352327.5	410524.9	464399	294.93	1375.94	1545.42	1371.99	1591.26	2183193	2.741
Goa	74157.92	84266.24	93672.38	15.59	5377.55	5939.91	5358.07	44.06	236076.6	0.004
Gujarat	1616106	1928683	2230609	697.88	2729.99	3133.32	2726.35	236.9	645872.3	0.966
Haryana	729078.7	868905.4	984055.4	294.83	2911.3	3259.76	2881.31	81.94	236094.5	0.140
Himachal Pradesh	151601.3	172161.8	191727.6	73.94	2316.81	2556.71	2307.95	655.3	1512400	0.303
Jharkhand	296664	358862.6	393722	384.71	920.89	1004.39	898.81	2064.44	1855539	4.593
Karnataka	1641460	1978094	2269995	668.45	2940.62	3361.31	2919.18	44.07	128648.3	0.182
Kerala	771723.9	934541.8	1046188	354.89	2622.69	2923.13	2573.45	389.8	1003131	0.878
Madhya Pradesh	946627.9	1092964	1246471	845.16	1277.6	1441.01	1279.56	1683.69	2154382	8.246
Maharashtra	2627542	3108022	3630000	1244.37	2478.27	2869.79	2486.53	476.72	1185379	3.613
Manipur	29776.09	36594.47	43000	31.65	1145.73	1075	1053.84	1909.41	2012213	0.368
Meghalaya	33776.16	38784.7	42697.08	32.88	1168.92	1255.8	1150.66	1812.59	2085675	0.363
Mizoram	23922.94	27823.5	31899.9	12.16	2267.6	2587.18	2274.04	689.21	1567291	0.051
Nagaland	29831.64	31038.3	35642.97	21.92	1402.54	1556.46	1439.98	1523.27	2193478	0.203
Odisha	540150.4	662885.6	753177	456.96	1441.46	1629.2	1417.57	1545.68	2191110	4.375
Punjab	540852.6	617191.7	676164.3	303.39	2021.26	2202.49	2002.15	961.1	1924266	1.798
Rajasthan	1017329	1193489	1365849	792.81	1489.01	1684.15	1485.45	1477.8	2195198	6.831
Sikkim	33017.83	37557.4	42756.17	6.77	5498.89	6196.55	5524.17	44.06	243394.9	0.002
Tamil Nadu	1788074	2071286	2364514	764.02	2702.94	3078.79	2707.36	255.89	692786.4	1.245
Telangana	943078	1124204	1308034	377.25	2965.69	3424.17	2963.25	44.06	130560.8	0.104
Tripura	53504.12	62550.44	72635.62	40.71	1522.28	1733.55	1523.37	1439.88	2193470	0.357
Uttar Pradesh	1644946	1975595	2258040	2309.07	846.82	955.58	838.26	2124.99	1781294	28.634
Uttarakhand	225616.8	267143.2	303780.7	113.99	2319.35	2598.64	2299.09	664.16	1526964	0.452
West Bengal	1141802	1329238	1531758	981.25	1348.06	1545.2	1352.29	1610.96	2178485	9.916

Table 2.1 Share based on Income Distance Criterion scaling by 2021 census

YEAR states	GSDP			Per capita			Average	D=Distan ce	D*2021	Inter-state share
	2021	2022	2023	2021	2022	2023				
Andhra Pradesh	978581.5	1148471	1303524	527.87	2168.07	2456.65	2159.52	803.73	424265	2.687
Arunachal Pradesh	30525.35	34774.76	39629.96	15.33	2246.43	2573.37	2270.34	692.91	10622.31	0.063
Assam	339803	411453.8	493166.6	350.43	1163.02	1387.64	1173.44	1789.81	627203.1	3.708
Bihar	567262.5	650302.4	751395.6	1230.83	520.58	593.52	524.99	2438.26	3001084	17.742
Chhattisgarh	352327.5	410524.9	464399	294.93	1375.94	1545.42	1371.99	1591.26	469310.3	2.775
Goa	74157.92	84266.24	93672.38	15.59	5377.55	5939.91	5358.07	44.06	686.8954	0.004
Gujarat	1616106	1928683	2230609	697.88	2729.99	3133.32	2726.35	236.9	165327.8	0.977
Haryana	729078.7	868905.4	984055.4	294.83	2911.3	3259.76	2881.31	81.94	24158.37	0.143
Himachal Pradesh	151601.3	172161.8	191727.6	73.94	2316.81	2556.71	2307.95	655.3	48452.88	0.286
Jharkhand	296664	358862.6	393722	384.71	920.89	1004.39	898.81	2064.44	794210.7	4.695
Karnataka	1641460	1978094	2269995	668.45	2940.62	3361.31	2919.18	44.07	29458.59	0.174
Kerala	771723.9	934541.8	1046188	354.89	2622.69	2923.13	2573.45	389.8	138336.1	0.818
Madhya Pradesh	946627.9	1092964	1246471	845.16	1277.6	1441.01	1279.56	1683.69	1422987	8.413
Maharashtra	2627542	3108022	3630000	1244.37	2478.27	2869.79	2486.53	476.72	593216.1	3.507
Manipur	29776.09	36594.47	43000	31.65	1145.73	1075	1053.84	1909.41	60432.83	0.357
Meghalaya	33776.16	38784.7	42697.08	32.88	1168.92	1255.8	1150.66	1812.59	59597.96	0.352
Mizoram	23922.94	27823.5	31899.9	12.16	2267.6	2587.18	2274.04	689.21	8380.794	0.050
Nagaland	29831.64	31038.3	35642.97	21.92	1402.54	1556.46	1439.98	1523.27	33390.08	0.197
Odisha	540150.4	662885.6	753177	456.96	1441.46	1629.2	1417.57	1545.68	706313.9	4.176
Punjab	540852.6	617191.7	676164.3	303.39	2021.26	2202.49	2002.15	961.1	291588.1	1.724
Rajasthan	1017329	1193489	1365849	792.81	1489.01	1684.15	1485.45	1477.8	1171615	6.927
Sikkim	33017.83	37557.4	42756.17	6.77	5498.89	6196.55	5524.17	44.06	298.2862	0.002
Tamil Nadu	1788074	2071286	2364514	764.02	2702.94	3078.79	2707.36	255.89	195505.1	1.156
Telangana	943078	1124204	1308034	377.25	2965.69	3424.17	2963.25	44.06	16621.64	0.098
Tripura	53504.12	62550.44	72635.62	40.71	1522.28	1733.55	1523.37	1439.88	58617.51	0.347
Uttar Pradesh	1644946	1975595	2258040	2309.07	846.82	955.58	838.26	2124.99	4906751	29.008
Uttarakhand	225616.8	267143.2	303780.7	113.99	2319.35	2598.64	2299.09	664.16	75707.6	0.448
West Bengal	1141802	1329238	1531758	981.25	1348.06	1545.2	1352.29	1610.96	1580755	9.345

Note: Follows the same method of calculation in the 15th FC to find share of each state. D=Per capita distance. In the table 2.1, 'D' is multiplied by 2011 census and in the table 2.2 the same reproduced by 2021 census.

6

Ecological Federalism: It's Time to Revisit Disaster Fund Allocation Criteria ¹²

Executive Summary

- India's disaster response funding system has a critical flaw that leaves certain states vulnerable as natural calamities increase in frequency and intensity. The State Disaster Response Fund (SDRF) allocation mechanism suffers from serious shortcomings in both criteria and methodology.
- The current parameters - population, geographical area, and Below Poverty Line (BPL) population - unfairly disadvantage states successful in managing demographics and reducing poverty, thus penalizing high performers. These criteria are largely irrelevant for disaster response funding.
- In disaster management, risk is seen as the interaction between the likelihood of disasters and vulnerability, typically measured by the Disaster Risk Index (DRI). According to established risk theory, DRI should be calculated by multiplying disaster probability and vulnerability. However, the Finance Commission uses an additive model, simply summing these factors, which does not capture their true interaction.
- Further, the current vulnerability measure, focusing primarily on poverty, fails to accurately reflect vulnerability to specific natural disasters.
- This report suggests revised parameters including population density and specific geographical features like wetlands, hilly areas, and coastal length for fund allocation. It also advocates replacing the poverty-based vulnerability measure with a comprehensive disaster vulnerability index.
- Under this revised approach, Kerala's allocation would increase from Rs. 1389.60 crore to Rs. 2321.80 crore. The proposed revised framework better aligns with the principles of ecological federalism and more accurately reflects states' disaster risks and vulnerabilities..

¹² Prepared by Shri Rju, PhD Scholar, GIFT and Dr Aswathy Rachel Varughese, Assistant Professor, GIFT.

9. Introduction

The escalating risks of environmental degradation and climate change necessitate fiscal interventions to implement effective mitigation, adaptation, and resilience measures. Considering the quality of the environment being a “local” public good, and aligning with the “principle of subsidiarity” or Oates theorem (suggesting local governments closer to citizens are more efficient in public service provisioning than higher tiers of government), fiscal decentralisation emerges as a key driver for fiscal interventions that promote ecological conservation, efficiency and equality in the economy (Chakraborty, 2021; Kaur et. al., 2021).

Ecological fiscal federal transfers (EFTs) represent a critical financial mechanism to promote sustainable development and environmental conservation along the lines of fiscal decentralisation. This system involves reallocating funds from national to sub-national governments based on ecological criteria. Dasgupta and Srikanth (2021) emphasize that well-designed transfers can enhance ecological values and support climate goals. By directing funds to states essential for their contributions to climate mitigation, India can incentivize states to adopt greener policies and practices that would ultimately leading to a reduction in greenhouse gas emissions. By incentivizing states to maintain and improve their ecological health, these transfers can also help mitigate issues such as deforestation, pollution, and loss of biodiversity. Sankar (2009) highlights that fiscal transfers not only support environmental sustainability but also build capabilities in local bodies, which are crucial for effective ecological management.

In the Indian context, ecological federal transfers take the route of tax devolution and Finance Commission (FC) grants. Disaster risk financing through FC grants has been in place since the Second Finance Commission, later, it was replaced with a Calamity Relief Fund and a National Calamity Contingency Fund (NCCF) as well as National Disaster Relief Fund (NDRF). Those fund allocations followed an expenditure-based criterion, considering only the past expenditure incurred by the states for disaster responses. However, the 15th FC deviated from this approach and adopted a comprehensive methodology with population, area and disaster risk scores for determining the states’ share. However, the current mechanism of determining state government shares in the State Disaster Response Fund (SDRF) has significant flaws, particularly in its criteria and methodology. Therefore, the present report critically examines the existing criteria and methodology for the disaster response funding in India. In the wake of submitting inputs for the 16th FC – memorandum of the state of Kerala, the report suggests alternative criteria to overcome the flaws in the previous and current approaches.

10. History of Disaster Financing through Finance Commission Grants

Disaster financing in India was first introduced by the Second Finance Commission. It implemented a ‘Margin Money Scheme’ for disaster relief by incorporating a margin in each state's annual revenue calculations (Sharma, 2023). This approach allowed states to accumulate substantial funds for potential natural calamities. The Commission advised states to establish separate funds and annually deposit the calculated amounts. This framework remained largely unchanged from the Third to the Eighth Finance Commissions, with only minor modifications to the disaster funding recommendations.

The Margin Money Scheme allowed states to incorporate a financial buffer in their annual revenue calculations for potential disaster-related expenses. Finance Commissions advised states to allocate this calculated amount to a dedicated fund. The central government supplemented these funds through grants and loans. When a state's disaster expenses exceeded its margin fund, the Union provided additional support. During natural calamities, the Centre covered 75 percent of the expenditure, with 67 percent as loans and 33 percent as grants. States were responsible for the remaining 25 percent, sourced from their own funds or third-party loans. These central loans were offered on favourable terms. However, subsequent Finance Commissions phased out this loan-based approach.

The Ninth Finance Commission introduced a significant change by recommending the establishment of the Calamity Relief Fund (CRF), granting states more autonomy in fund utilization compared to previous schemes. The Tenth FC expanded funding to include "calamities of rare severity," though this term remained undefined due to India's diverse geography, demographics, and hazard profiles, necessitating case-by-case evaluation. The Eleventh FC noted that the CRF had become inadequate to address the states' growing needs in response to increasing natural calamities. Subsequently, the Twelfth FC maintained both the CRF and National Calamity Contingency Fund (NCCF) while broadening the range of calamities covered under these programs.

The Disaster Management Act of 2005 mandated the establishment of the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF). The Thirteenth Finance Commission recommended transitioning from the Calamity Relief Fund (CRF) and National Calamity Contingency Fund (NCCF) to these new funds, which was implemented by the Fourteenth Finance Commission. The Fifteenth Finance Commission also consolidated the CRF into the SDRF and adopted an expenditure-based approach for fund allocation, using the average disaster response spending from the previous seven years as the basis for state-level distributions.

11. Current Methodology

The Fifteenth Finance Commission (FC) (2021-22 to 2025-26) revised the methodology for determining state shares in the SDRF. Unlike previous FCs that relied solely on past expenditure for disaster relief fund allocation, the 15th FC considered population, area, average past expenditure, and the Disaster Risk Index (DRI). The DRI assessed hazard probabilities, such as cyclones, landslides, floods, and earthquakes, alongside vulnerability, which is based on the population below the poverty line. Under this framework population and area have a weight of 15 percent each while the average of past expenditure was given a weight of 70 percent. Even in the revised methodology past expenditure is considerably represented. Third important variable for fund allocation is the risk profile of the state which is captured through a Disaster Risk Index (DRI). It includes the probability of hazards and vulnerability, thus arriving at composite score. The hazards mainly focus on the probability of events such as landslides, flood, earthquakes, drought and other natural calamities. For the calculation of DRI, hazards have the highest score of 70 while vulnerability has 30. The vulnerability measure considers the population below the poverty line (BPL). The hazard scoring system employs three tiers: fifteen, ten, and five points, correlating with the highest to lowest probability of natural disaster occurrence (Table 1). An additional uniform score of ten is

assigned to all states for rare, unforeseen disasters, bringing the total hazard score to 70. The BPL population, determined using the Tendulkar Committee's calorie-intake methodology, forms the basis for vulnerability scoring. As shown in Table 1 the states with less than 13 percent poverty receive 10 points, those between 13-26 percent get 20 points, and states exceeding 26 percent BPL population are assigned 30 points. This system aims to quantify both disaster risk and socioeconomic vulnerability in fund allocation decisions.

Table 1: Summary of the Scoring Scheme for DRI

Disasters	High	Medium	Low	Scoring System	Poverty
Floods	15.00	10.00	5.00	Low - 10.00	Below 13%
Drought	15.00	10.00	5.00	Medium - 20.00	Between 13% and 26%
Cyclone	15.00	10.00	5.00	High - 30.00	Between 26% and 40%
Earthquake	15.00	10.00	5.00		
Others		10.00			

Source: 15th Finance Commission Report, 2020.

12. Calculation of SDRF Share of States

After fixing the parameters, for the calculation of shares, 70 percent of the weight is assigned to the past expenditure. 15 percent of weights each has been allotted for population and geographical area. Hence a score is arrived at

$$W = Expenditure_{70} + Area_{15} + Population_{15} \quad (1)$$

Once W is calculated, this score is multiplied with the respective DRIs of the states to get a score of Y,

$$Y = W * DRI \quad (2)$$

The final score is Z in equation (3) which is the base value of a state.

$$Z = Y + W \quad (3)$$

The base value considers 5 percent inflation and then arrive at the final figure which reflects the share of respective states in disaster funding.

In the domain of disaster management, risk is fundamentally perceived as an interaction between the likelihood of disasters and the degree of vulnerability. This interactive effect can be quantitatively assessed through the calculation of the Disaster Risk Index (DRI), wherein risk is expressed as the product of disaster probability and vulnerability, aligning with established risk theory (Blaikie et al., 1994). Contrary to this approach, the Finance Commission's DRI calculation method employs an additive model by summing disaster probability and vulnerability, which merely reflects a cumulative effect rather than a true interaction between these elements. For a more precise representation of risk that encapsulates the dynamic interplay between disaster probability and vulnerability, it is imperative to utilize a model that emphasizes their interactive effect. Employing such an approach ensures a more accurate depiction and understanding of potential risks.

Table 2: DRI Scores of the States

States	Hazard (H)	Vulnerability (I)	Total
Andhra Pradesh	55	10	0.65
Arunachal Pradesh	40	30	0.70
Assam	40	30	0.70
Bihar	50	30	0.80
Chhattisgarh	25	30	0.55
Goa	25	10	0.35
Gujarat	60	20	0.80
Haryana	35	10	0.45
Himachal Pradesh	35	10	0.45
Jharkhand	30	30	0.60
Karnataka	40	20	0.60
Kerala	45	10	0.55
Madhya Pradesh	30	30	0.60
Maharashtra	50	20	0.70
Manipur	30	30	0.60
Meghalaya	30	10	0.40
Mizoram	30	20	0.50
Nagaland	30	20	0.50
Odisha	60	30	0.90
Punjab	35	10	0.45
Rajasthan	35	20	0.55
Sikkim	30	10	0.40
Tamil Nadu	45	10	0.55
Telangana	35	10	0.45
Tripura	40	20	0.60
Uttar Pradesh	45	30	0.75
Uttarakhand	40	50	0.50
West Bengal	55	20	0.75

Source: 15th Finance Commission Report, 2020.

Table 2 shows the composite DRI scores for states as calculated in the 15th Finance Commission by combining Hazard and Vulnerability with a weight of 70 and 30 respectively.

Table 3: SDRF Allocation for the States during 15th Finance Commission

States	Total SDRF allocated	Centre's Share
Andhra Pradesh	6591.20	4943.40
Arunachal Pradesh	1228.80	1105.92
Assam	3793.60	3414.24
Bihar	8345.60	6259.20
Chhattisgarh	2546.40	1909.80
Goa	66.40	49.80
Gujarat	7802.40	5851.80
Haryana	2895.20	2171.40
Himachal Pradesh	2006.40	1504.80
Jharkhand	3345.60	2509.20
Karnataka	4659.20	3494.40
Kerala	1852.80	1389.60
Madhya Pradesh	10728.80	8046.60
Maharashtra	18989.60	14242.20
Manipur	208.00	187.20
Meghalaya	322.40	241.80
Mizoram	229.60	206.64
Nagaland	203.20	182.88
Odisha	9455.20	7091.40
Punjab	2918.40	2188.80
Rajasthan	8730.40	6547.80
Sikkim	248.00	223.20
Tamil Nadu	6012.80	4509.60
Telangana	2648.00	1986.00
Tripura	336.00	302.40
Uttar Pradesh	11396.80	8547.60
Uttarakhand	4601.60	4141.44
West Bengal	5960.00	5364.00
All states	128122.40	98613.12

Source: 15th Finance Commission Report, 2020.

Note: Centre's share here refers to 75% and 90% of the total SDRF allocation for general and special category states respectively.

As shown in Table 3, the 15th Finance Commission allocated a total of Rs. 1,28,122 crores for the SDRF. Under this allocation, for general category states, 75 percent of the fund will be shared by the Union government, with the remaining 25 percent allocated by the state government. Special category states, however, will have a different allocation ratio, with 90 percent of the fund shared by the Union and 10 percent by the state government. Based on current criteria, Maharashtra, Uttar Pradesh, Madhya Pradesh, Odisha, and Rajasthan top the list of recipients for the SDRF, while the North-Eastern states, Kerala, Himachal Pradesh, Chhattisgarh, and Telangana receive the least.

13. Problems in the Allocation Criteria

Despite this comprehensive approach, the inappropriate parameters for SDRF fund allocation have resulted in significant fiscal discrimination against certain states. The

current framework's inclusion of population, geographical area and BPL population criteria results in those states receiving a higher share of SDRF funds which may not be necessarily high-risk category in terms of hazards and exposure to natural disasters. Hence, it turns out to be highly unfair.

a. Population Criterion Penalises States Successful in Population Control

Using the 2011 census population as a key factor has been contentious, penalizing states like those in South India that have successfully implemented population control measures. These states have voiced discontent, arguing that the population criterion unfairly reduces their share of federal resources. In tax devolution, this concern was addressed by incorporating demographic performance alongside population weight. While population is a need-based criterion for resource allocation and ensuring larger populations receive adequate resources, the SDRF fund allocation should focus on risk and vulnerability rather than sheer population size.

b. Geographical Area Does Not Accurately Reflect Disaster Vulnerability

Using geographical area as a criterion for SDRF fund allocation is flawed. Natural disasters impact specific geographical divisions like hilly regions, wetlands, and coastal areas more than others. Simply using the geographical size of a state does not address the unique risks posed by cyclones, earthquakes, floods, and landslides. While geographical area is relevant for general resource allocation, it falls short in addressing the specific needs of natural disaster relief. Geographically larger states receive more funds even if they face less risk or vulnerability, leading to unfair distribution. In the current SDRF framework, both area and population have a 15 percent weight each. However, this approach does not accurately reflect the needs of states with higher disaster risk. To ensure fairness and effectiveness, the allocation criteria should prioritize factors directly related to disaster risk and vulnerability rather than relying on population and area alone.

This study prioritized coastal regions in our climate impact assessment by assigning them a 7 percent weight due to their heightened vulnerability to adverse climatic events. Coastal regions frequently encounter cyclones, rising sea levels, coastal erosion, and saltwater intrusion, all of which endanger millions of lives by displacing communities and threatening agriculture, freshwater resources, and infrastructure. The Indian western and eastern coastal plains constitute approximately 7 percent of the nation's land area but are home to about 17 percent of the population, equating to nearly 211.93 million people across 640 districts, including states such as Kerala, Tamil Nadu, and Odisha that are acutely susceptible to climate change.

Further, hilly terrains and wetlands were each given a 4 percent weight due to their exposure to distinct climate challenges. Hilly and mountainous regions comprise roughly 16.2 percent of India's land area, encompassing the northern Himalayas and the Eastern and Western Ghats, which face significant climatic challenges like glacial retreat, erratic rainfall patterns, landslides, and flash floods. These challenges notably affect ecosystems and biodiversity in states such as Himachal Pradesh, Uttarakhand, Jammu and Kashmir. Collectively, these areas account for approximately 3.64 percent of India's population or around 44.06 million individuals as recorded in 2011.

Wetlands, which cover about 4.86 percent of India's geographical area amounting to 15.26 million hectares, are biologically enriched yet highly sensitive environments vulnerable to sea-level rise and frequent flooding that heighten salinity levels impacting ecosystem functionality and community livelihoods. A higher weighting is allocated to wetlands in acknowledgment of India's robust commitment to their conservation with India recognized for safeguarding 49 Ramsar sites covering an expanse of 10,93,636 hectares—the largest in South Asia.

Desert regions, which occupy approximately 10% of the nation's land area and account for about 5% of its population, remain an important geographical area worthy of study, though they are not included in our current analysis. These regions are characterized by sparse populations due to limited water resources and challenging living conditions. However, they are increasingly afflicted by intensifying droughts, extreme heat waves, and water scarcity. These issues exacerbate desertification, lead to declining groundwater levels, and adversely affect food security and local ecosystems. Going by the land area and related inhabitants, the study takes into account disaster vulnerability in areas such as coastal lands, wetlands and hilly terrain.

c. Past Expenditure

Despite there being a departure from the previous methodology, the current mechanism also heavily relies on the average expenditure on relief measures from the past seven years, which accounts for 70 percent of the allocation criteria. This predominant focus on historical expenditure means that states with higher past expenditures receive more funds, regardless of their current risk and vulnerability to natural disasters. This approach can perpetuate inequalities, as it doesn't necessarily address the actual needs or future risks faced by different states. To create a more balanced and fair allocation system, it would be beneficial to consider current and projected risks and vulnerabilities alongside past expenditures.

14. Concerns with Disaster Risk Index Calculation

In the domain of disaster management, risk is fundamentally perceived as an interaction between the likelihood of disasters and the degree of vulnerability. This interactive effect can be quantitatively assessed through the calculation of the Disaster Risk Index (DRI), wherein risk is expressed as the product of disaster probability and vulnerability, aligning with established risk theory (Blaikie et al., 1994). Contrary to this approach, the Finance Commission's DRI calculation method employs an additive model by summing disaster probability and vulnerability, which merely reflects a cumulative effect rather than a true interaction between these elements. For a more precise representation of risk that encapsulates the dynamic interplay between disaster probability and vulnerability, it is imperative to utilize a model that emphasizes their interactive effect. Employing such an approach ensures a more accurate depiction and understanding of potential risks.

Currently, the DRI is a composite score derived from hazard and vulnerability scores. The hazard score, out of 70, is based on the probability of frequent natural disasters in India, with states classified as high, medium, or low risk. The vulnerability score, out of 30, is

based on the population Below Poverty Line (BPL), which is a rudimentary measure of vulnerability.

The current DRI formula while providing a starting point, overlooks crucial theoretical aspects of disaster risk. A clear contextual understanding of the two concepts, hazard and vulnerability is in order here.

The hazard dimension of the Disaster Risk Index (DRI) appears to consider only the technocratic perspective of hazard, whether natural or anthropogenic in their singular context. An objective approach should consider socio-natural hazards, associated with the combined dynamics of both natural and anthropogenic factors in their socio-political context (Burton et al. 2005). Moreover, factors like frequency, intensity, and spatial distribution of hazards are crucial for understanding disaster risk (UNISDR, 2009).

Coming to vulnerability, the DRI does not adequately account for a region's vulnerability, which refers to the susceptibility of communities to the impact of hazards. There are different ways of understanding vulnerability. One perspective, offered by Bohle et al. (1994), sees it as a complex social situation with many layers and influences. These influences include the resources available to people (political, economic, and institutional) depending on where they live and the times they live in. Another way to think about it, as Blaikie et al. (2004) suggest, is to focus on the characteristics of individuals or communities that affect their ability to handle the impacts of natural disasters. These characteristics influence how well they can anticipate, deal with, resist, and bounce back from such events.

For a more robust DRI which is in line with the theoretical considerations and thereby gives a more holistic picture of disaster risk, the Disaster Risk Index (DRI) should integrate hazard, vulnerability, and capacity assessments (UNISDR, 2009). That is, disaster risk is not static. Climate change, for instance, can alter hazard patterns. Therefore, the DRI should be adaptable to incorporate evolving risks (Jodha, 2012). As already indicated in the context of hazard, the DRI also needs to incorporate social factors that exacerbate vulnerability. This requires using a more comprehensive vulnerability index that has been constructed for states in India like the Disaster Score Card prepared for States and Union Territories (NDMA, 2018) which nevertheless, needs to be updated. Also, instead of considering disaster risk in terms of probability of disasters only and vulnerability separately, the comprehensive, traditional risk measure in terms of probability of disasters times vulnerability degree can be considered.

In this light, using the BPL population alone as a measure of vulnerability is problematic. That is, vulnerability is not a representation of only (income) poverty. It is now a generally accepted fact that poverty is multi-dimensional. Vulnerability should therefore, consider exposure to hazards and the population's capacity to adapt and be resilient. However, the current method unfairly penalizes states that have successfully reduced poverty, such as those in South India. As a result, there is a mismatch between hazard scores and vulnerability measures. For example, states like Odisha, Gujarat, West Bengal, Andhra Pradesh, Bihar, Maharashtra, Uttar Pradesh, Kerala, Tamil Nadu, and Arunachal Pradesh have high hazard scores. However, incorporating below poverty level populations as the primary vulnerability measure lowers the overall scores of states like Andhra Pradesh,

Kerala, and Tamil Nadu. Consequently, these states rank low in the overall DRI and receive less SDRF funding, despite being high or medium hazard states.

15. How to Address the Methodological Issues in Disaster Fund Allocation?

a. Population Density is a Better Indicator

To better address disaster risk, incorporating population density as a criterion would be more effective. Densely populated areas face higher risks, casualties, and losses during natural disasters. Adjusting the allocation to reflect this would ensure a more equitable distribution of funds, aligning resources with actual needs and vulnerabilities. Instead of considering population and area separately, a combined measure of population density, which is a recognised vulnerability dimension (Birkmann et al., 2006) and a higher risk factor, must be accounted for. Assigning a weight of 15 percent to population density would better address the high-risk factor for the population.

b. Geographical Sub-divisions

For ecological fiscal transfers, instead of considering only the geographical area, geographical sub-divisions more prone to natural disasters, such as hilly areas, wetlands, and coastal lines, need to be incorporated. Mere consideration of geographical area is irrelevant in the context of setting up disaster funding criteria. Natural disasters impact specific geographical divisions like hilly regions, wetlands, and coastal areas more than others. Instead of simply considering the area, the allocation criteria need to consider the proportion of wetlands, hilly regions and the length of coastal lines. Incorporating these sub-divisions with a weight of 15 percent would significantly represent states which are prone to the natural disasters.

c. Replacing Poverty Vulnerability with a Composite Score

Replacing the below poverty line population with a composite vulnerability score is essential. Composite index of National Disaster Management Authority (NDMA) would provide a more accurate picture. It considers unsafe buildings, social infrastructure, physical infrastructure, net cropped area, livestock population, industries, vulnerable women, children, disabled and aged population, rural- urban population, deforestation, depletion of mangroves and water stress. Inclusion of a composite vulnerability index will considerably represent those states which are really vulnerable to natural disasters, rather than merely taking the poverty vulnerability.

16. Empirical Estimation with the Proposed Revision in the Methodology

Following are the underlying assumptions of the proposed revision in the methodology:

1. It maintains the 70 percent weight given to the average expenditure on disaster relief measures over the past seven years, aligning with the previous approach.
2. Instead of considering population and area separately, the new methodology combines these factors by using population density per square kilometre, assigning it a weight of 15 percent. This change aims to better reflect the potential impact of disasters on densely populated areas.

3. The revision recognizes that geographical subdivisions are more relevant to disaster risk than overall state size. Consequently, it incorporates the share of wetlands and hilly areas, each weighted at 4 percent, and the length of coastal lines, weighted at 7 percent. These weights are assigned based on the likelihood of specific disasters (such as earthquakes, floods, droughts, and cyclones) affecting these terrains.
4. The proposed revision in the methodology includes a revision in the DRI scores as well. It replaces the current poverty-based vulnerability measure with a comprehensive vulnerability index provided by the National Disaster Management Authority (NDMA). While maintaining the 10, 20, and 30 scoring system for low, medium, and high vulnerability levels respectively, this change shifts the focus from poverty vulnerability to a more holistic assessment of disaster vulnerability. This adjustment aims to more accurately reflect each state's susceptibility to natural disasters rather than its economic conditions alone.

Table 4: Revised DRI Scores and Change in the Ranking

States	H	I	Total	New rank	Old Rank
Gujarat	60	30	0.90	↑ 1	↓ 3
Andhra Pradesh	55	30	0.85	↑ 2	↓ 9
West Bengal	55	30	0.85	↑ 3	↓ 5
Bihar	50	30	0.80	↓ 4	↑ 2
Maharashtra	50	30	0.80	↑ 5	↓ 8
Odisha	60	20	0.80	↓ 6	↑ 1
Tamil Nadu	45	30	0.75	↑ 7	↓ 18
Uttar Pradesh	45	30	0.75	↓ 8	↑ 4
Karnataka	40	30	0.70	↑ 9	↓ 11
Kerala	45	20	0.65	↑ 10	↓ 16
Rajasthan	35	30	0.65	↑ 11	↓ 17
Assam	40	20	0.60	↓ 12	↑ 7
Madhya Pradesh	30	30	0.60	↓ 13	↑ 12
Uttarakhand	40	20	0.60	↑ 14	↓ 21
Haryana	35	20	0.55	↑ 15	↓ 22
Himachal Pradesh	35	20	0.55	↑ 16	↓ 23
Punjab	35	20	0.55	↑ 17	↓ 24
Telangana	35	20	0.55	↑ 18	↓ 25
Arunachal Pradesh	40	10	0.50	↓ 19	↑ 6
Jharkhand	30	20	0.50	↓ 20	↑ 10
Tripura	40	10	0.50	↓ 21	↑ 14
Chhattisgarh	25	20	0.45	↓ 22	↑ 15
Manipur	30	10	0.40	↓ 23	↑ 13
Meghalaya	30	10	0.40	↑ 24	↓ 26
Mizoram	30	10	0.40	↓ 25	↑ 19
NAGaland	30	10	0.40	↓ 26	↑ 20
Sikkim	30	10	0.40	↓ 27	↓ 27
Goa	25	10	0.35	↓ 28	↓ 28

Source: Authors' own calculation based on data from NDMA's Disaster Score Card for States and Union Territories of India, 2018.

Based on the revised score and parameters shown in Table 4, the revised share entitled for the states as SDRF grants is given below (Table 5).

Table 5: Revised Share Entitlements for States as SDRF

States	Current		Estimated	
	Total SDRF allocated	Centre's Share	Total SDRF allocated	Centre's Share
Andhra Pradesh	6591.20	4943.40	6988.35	5590.68
Arunachal Pradesh	1228.80	1105.92	1423.64	1138.91
Assam	3793.60	3414.24	4847.05	3877.64
Bihar	8345.60	6259.20	11762.41	9409.93
Chhattisgarh	2546.40	1909.80	3167.11	2533.69
Goa	66.40	49.80	226.97	181.58
Gujarat	7802.40	5851.80	11188.24	8950.60
Haryana	2895.20	2171.40	4235.83	3388.66
Himachal Pradesh	2006.40	1504.80	2887.99	2310.39
Jharkhand	3345.60	2509.20	4190.93	3352.74
Karnataka	4659.20	3494.40	6494.80	5195.84
Kerala	1852.80	1389.60	2901.88	2321.50
Madhya Pradesh	10728.80	8046.60	13985.01	11188.01
Maharashtra	18989.60	14242.20	26765.11	21412.09
Manipur	208.00	187.20	263.52	210.81
Meghalaya	322.40	241.80	436.08	348.86
Mizoram	229.60	206.64	352.67	282.13
Nagaland	203.20	182.88	272.75	218.20
Odisha	9455.20	7091.40	12391.26	9913.01
Punjab	2918.40	2188.80	4111.55	3289.24
Rajasthan	8730.40	6547.80	11972.17	9577.73
Sikkim	248.00	223.20	593.09	474.47
Tamil Nadu	6012.80	4509.60	8918.30	7134.64
Telangana	2648.00	1986.00	3611.26	2889.01
Tripura	336.00	302.40	511.78	409.42
Uttar Pradesh	11396.80	8547.60	15470.50	12376.40
Uttarakhand	4601.60	4141.44	6342.30	5073.84
West Bengal	5960.00	5364.00	8777.44	7021.95
All states	128122.40	98613.12	175089.97	140071.98

Source: Authors' own calculation

As per the tables 4 and 5, the total SDRF allocation will increase from Rs. 128,122.40 crore to Rs. 175,089.97 crore. High risk states like Gujarat, Andhra Pradesh and Kerala would receive more funding. Kerala's share would increase from Rs 1389.60 crore to Rs 2321.50 crore with the revisions in the methodology.

17. A Clarion Call to Revisit SDRF Criteria: Specific Suggestions

1. In disaster management, risk is seen as the interaction between the likelihood of disasters and vulnerability, typically measured by the Disaster Risk Index (DRI). According to established risk theory, DRI should be calculated by multiplying

disaster probability and vulnerability. However, the Finance Commission uses an additive model, simply summing these factors, which does not capture their true interaction.

2. To make the SDRF more efficient and equitable, the 16th Finance Commission should revisit the existing criteria. The penalizing performers criterion of population and area should be replaced with population density with 15 percent weight, which better captures the risk and exposure to natural disasters.
3. For ecological fiscal transfers, rather than considering only the geographical area, subdivisions more prone to natural disasters—such as hilly areas, wetlands, and coastlines—should be included, with an overall weight of 15 percent. Out of this 15 percent, hilly areas and wetlands each receive a weight of 4 percent due to their disaster risk, while coastlines receive a weight of 7 percent due to the risk of flooding.
4. For the DRI, since the BPL population is a basic measure capturing only poverty vulnerability, a composite vulnerability index from authorized agencies like NDMA or self-computed figures should be used to reflect the actual vulnerability to natural disasters.
5. The risk measure should be calculated as the probability of disasters times the degree of vulnerability as per the theory of risk. However, the current approach considers risk in terms of probability of disasters only and vulnerability separately which is theoretically incorrect. Failure to revise these criteria could result in states receiving disproportionate amounts, insufficient to meet their disaster response needs effectively.
6. If this were done, states like Gujarat, Andhra Pradesh, West Bengal, Bihar, Maharashtra, Odisha, Tamil Nadu, Uttar Pradesh, Karnataka, and Kerala would be recognized as having high DRI scores and would justifiably receive more SDRF funds.

The proposed revisions to the SDRF allocation criteria represent a significant step towards more equitable and effective disaster response funding in India. By addressing the shortcomings of the current system, the states may receive funds proportionate to their actual disaster risks and vulnerabilities. The 16th Finance Commission needs to consider these recommendations to strengthen India's disaster preparedness and response capabilities in the face of growing climate-related challenges.

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Abstract

CSS (Centrally Sponsored Schemes) are specific-purpose transfers from the central government aimed at ensuring a minimum standard of living. However, the structure of CSS, where states are required to contribute amounts nearly equal to the central government without having any role in designing these schemes, becomes cumbersome for state government finances. The central government is gradually shifting away from schemes with 100% central funding and is instead promoting programs that require matching contributions from state governments. Broadly, tied transfers to state governments have increased. Between 2010 and 2016, the average share of tied transfers was 21%, but this rose to 58% during 2017–2021. Comparatively developed and good governed states have managed to secure resources from the central government due to the conditionalities, even though they require unconditional transfers to address their second- and third-generation development issues. The analysis suggests that the "one-size-fits-all" structure of CSS, which overlooks the heterogeneous needs of states, has ultimately resulted in a "one-size-fits-none" outcome.

Major Findings

- Grants under CSS have consistently exceeded the FC transfers, excluding tax devolution.
- The central share of Core of Core schemes in the total CSS outlay peaked in 2020–21 and then declined, while the share of Core schemes regained prominence. This suggests that the government is slowly moving away from schemes where they contributed 100 percent and is promoting schemes requiring matching contributions.
- Tied transfers to state governments have increased. Between 2010 and 2016, the average share of tied transfers was 21%, but this rose to 58% during 2017–2021.
- There is a comparatively higher gap between budget estimates and actuals in CSS central funds realized by low-developed states.
- States that utilized the central share more by fulfilling conditionalities are states with good governance. Many states cannot employ permanent employees to carry out the administrative needs for CSS. If states employ

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people, the employed personnel continue to remain on the payroll of the state government, which creates more burden on states. The purpose of CSS, which is to ensure a minimum basic public service, is being overturned because of conditionalities.

- Delays in central disbursement occur because of the high administrative burden on states, like the submission of utility certificates, and so on. For example, within SSA, there are about 26 interventions. States are required to submit proposals and prepare their budgets for 26 different interventions, and they cannot change them unless they get permission from the centre.
- Even though CSS has been restricted to 28 umbrella schemes, within these schemes, there are many more bifurcations, which narrow the fund base for particular purposes. Thinly distributed allocations have considerably diluted the scheme's benefits.

Introduction

Vertical and horizontal fiscal imbalances are inherent in the overall design of Indian fiscal federalism. The constitutional body established to rectify this problem, the Finance Commission, is set up every five years by the President to make recommendations on the share of taxes that should be transferred to the states and grants for different purposes, as per the given terms of reference. The Centre is primarily responsible for redistribution and stabilization, including broad-based taxation, money supply functions, and borrowing powers. States have a comparative advantage in delivering public services that cater to diverse tastes across jurisdictions, making them responsible for the majority of expenditure functions (Rao, 2015). Consequently, development-related entries in the 7th Schedule are more or less in the State List and Concurrent List. The theoretical rationale for this is that the governmental body closer to the people can cater more effectively to development responsibilities, as they can better understand the needs and aspirations than the Union government, and they are more accountable in that sense. Vertical fiscal imbalance is inherent, and the Finance Commission devolution cannot meet all the needs of state governments or the needs of the people, given that there are more than 60 expenditure responsibilities on state governments while their own revenue powers are way below 40 percent.

Apart from the Finance Commission, there was the Planning Commission, which shared a sizable amount every year for catering to the development needs of the nation through planning. Centrally Sponsored Schemes were among the grants that the central government transferred to states to fund national development agendas. There are general purpose transfers and specific purpose transfers. General purpose transfers aim to ensure that all states offer equivalent public services at comparable taxes, with an emphasis on enabling the states; therefore, these transfers are expected to be unconditional. Specific purpose transfers aim to establish minimum standards for public services, so they are conditional (Rao, 2017). Centrally Sponsored Schemes are specific purpose transfers with many conditionalities. The abolition of the Planning Commission in 2015 caused a significant rupture in the flow of funds from the union government to state governments. The 14th Finance Commission, being aware of this change, recommended a 10% increase

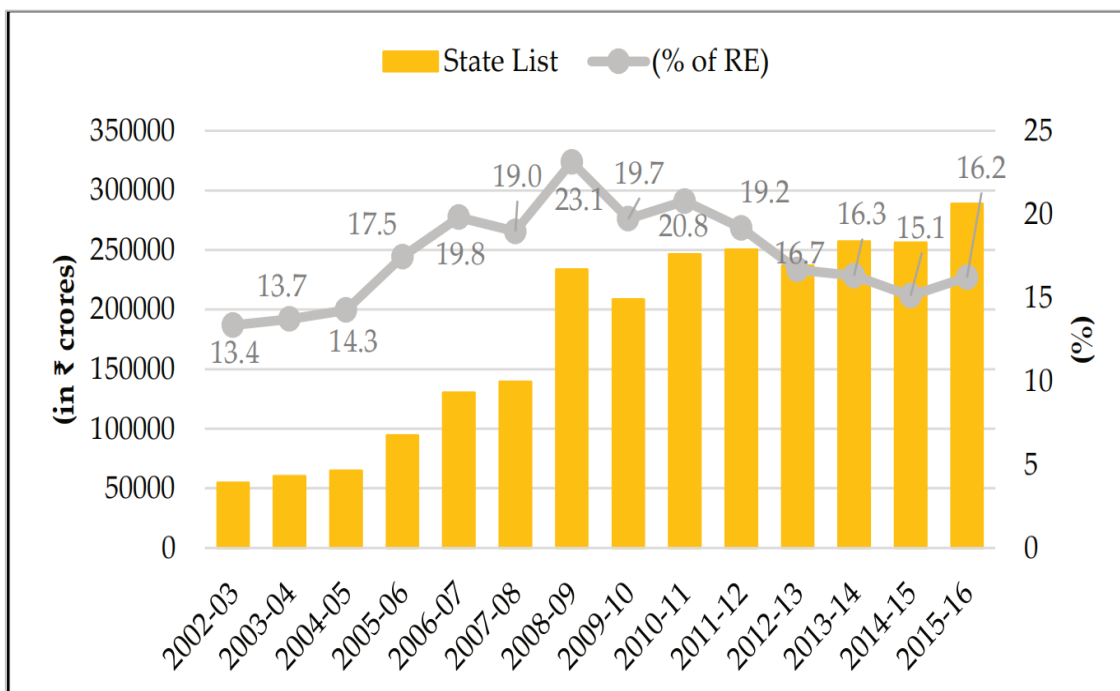
in the states' tax share. As a result, there was a need to rationalize the Centrally Sponsored Schemes as well as central sector schemes for the central government to keep their revenue expenditure targets in place. In 2015-16, a sub-group of chief ministers was constituted to rationalize the Centrally Sponsored Schemes, and the prevailing setup of CSS is largely based on the report of this sub-group. Even though Centrally Sponsored Schemes have a rationale for the National Development Agenda, there are widespread criticisms regarding their conditionalities and the 'one size fits all' nature of CSS. The rationalization has caused states to experience more fiscal stress, as the share of core schemes has changed. The 15th Finance Commission has raised concerns over the flexibility of the schemes and advised giving enough space to states for adaptation and innovation. The heterogeneous nature of the development paths of states must be addressed promptly through some changes in the structure of Centrally Sponsored Schemes.

National Development Agenda and the Heterogeneity of Needs

The objective of Centrally Sponsored Schemes (CSS) is to achieve the National Development Agenda. CSS are implemented at the state level, and their funding pattern varies (either shared in some proportion between the Union and the states or entirely borne by the Union). As previously stated, CSS aim to ensure a minimum standard of development while taking into account the spillover effects and externalities associated with the supply of merit goods such as healthcare and education (Jha et al., 2021). It is believed that the structure of CSS effectively internalizes these spillover effects and externalities, resulting in the optimal provision of merit goods compared to state-confined methods. Given this nature of CSS, they become a significant tool for equalizing the level of service provision in critical sectors among sub-national regions. However, states are experiencing a wide range of development issues, and the nature and causes of these issues differ from state to state. Some states lag significantly in areas such as poverty alleviation, healthcare, and education compared to others. States in the south, such as Kerala and Tamil Nadu, have already made great progress in meeting the basic needs of their people, such as primary healthcare and educational institutions. Now, they need to focus on second-generation problems, but the structure and implementation rigidities of CSS do not provide enough flexibility to address these issues.

While central government intervention in development is not inherently problematic, it is important to remember the rationale behind placing development-related responsibilities in the State and Concurrent Lists. The intent was to allow states the flexibility to address their unique development challenges effectively. However, the increasing Union expenditure on state matters has significantly constrained the fiscal capacity for items listed under Union responsibilities (Chakraborty et al., 2018). This shift has resulted in a misalignment of resources, limiting the ability of states to innovate and tailor solutions to their specific needs. To achieve a balanced and effective development strategy, it is crucial to provide states with the fiscal autonomy and flexibility needed to address their diverse and evolving challenges.

Figure 1: Union Expenditure on State List

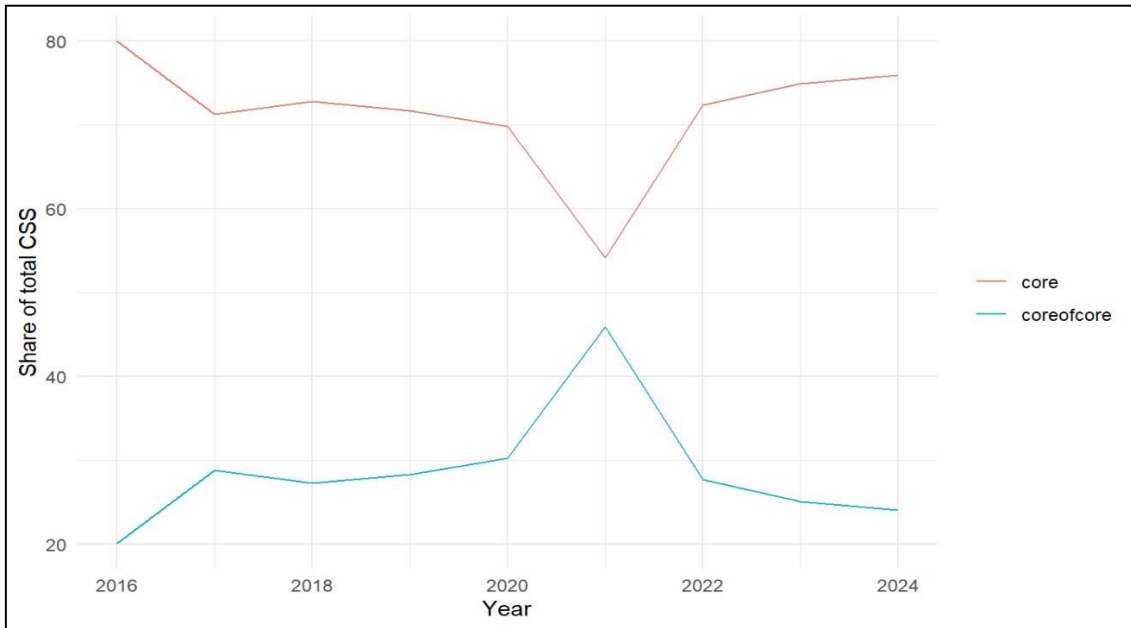


Source: Chakraborty et al. (2018)

The Current Trend in CSS

The National Development Agenda identifies ten priority sectors, and CSS has been restructured into Core of Core, Core, and Optional schemes. The Core of Core schemes are solely funded by the central government. For Core schemes, the Union government spends 60 percent, while the state government must provide a matching contribution of 40 percent. Optional schemes follow a 50:50 fund-sharing model. Following the rationalization measures taken by the Union government starting from the 2015-16 financial year, it was decided not to decrease spending on Core of Core schemes. During the pandemic years, to sustain the rural economy, there was increased reliance on the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and the National Social Assistance Program

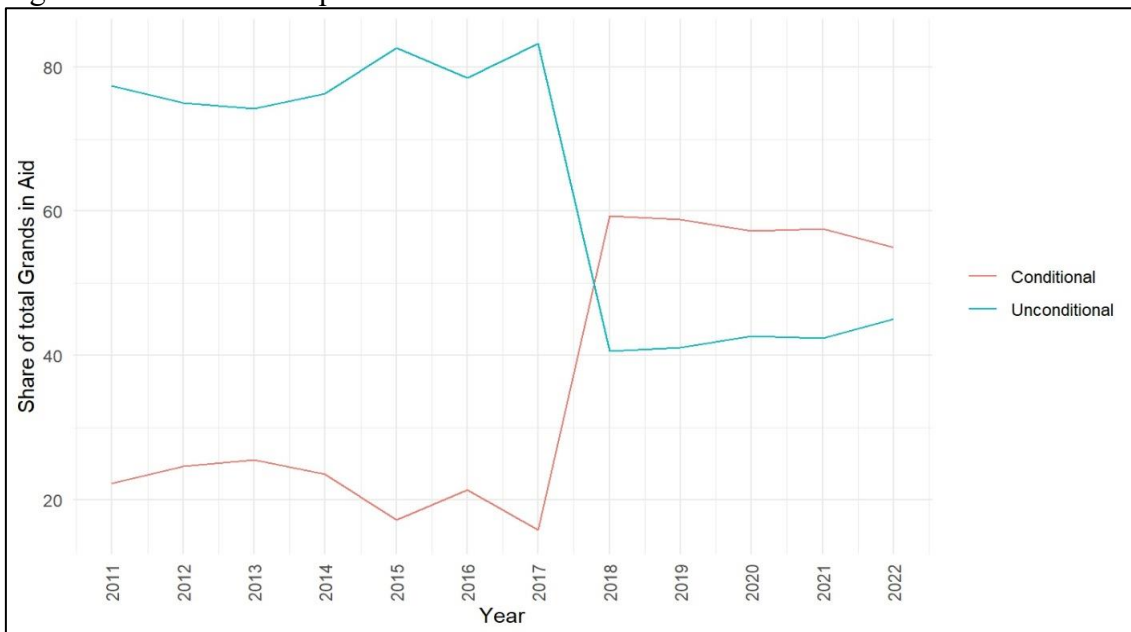
Figure 2: Share of Core and Core of Core schemes in total CSS expenditure



Source: CAG, Union Budget Documents

The trend shows (Figure 2) that the share of Core of Core schemes peaked in 2020-21 and then declined, while the share of Core schemes regained prominence. This suggests that the government is slowly moving away from schemes where they contributed 100 percent and is promoting schemes requiring matching contributions. There are criticisms that the changing composition of fund sharing has caused fiscal stress for states, and the increasing share of Core schemes in the total CSS outlay is a major concern for states.

Figure 3: Composition of Grants in Aid to states



Source: CAG, Union Budget Documents

In general, the percentage of Conditional grants as a proportion of total Grants in Aid is increasing. The GST compensation has to be removed from this analysis because it compensates for the revenue loss incurred by states due to the implementation of the Goods and Services Tax regime. According to the 2024-23 budget estimates, CSS constitutes 24.58 percent of the total transfers (including GST Compensation) and 55.8 percent of the total Grants in Aid by the central government to states. In 2021-22, 55 percent of the total Grants in Aid were conditional or tied transfers, compared to 22 percent in 2010-11. One important thing to note is that most of the unconditional grants come under the purview of Finance Commission grants. In the 2021-22 financial accounts, Finance Commission grants constitute 44% of the total Grants in Aid, while total unconditional transfers to states amount to 45% of total transfers. The literature provides enough evidence that Finance Commission grants are more progressive than CSS and other conditional transfers. A study by Jha et al. (2021) compares the progressivity of per-capita Finance Commission devolution and per-capita non-Finance Commission grants (largely CSS grants) for the major states, excluding Goa. They observed that the formula-based Finance Commission devolution is much more progressive compared to the discretionary CSS grants. While Finance Commission grants are not completely unconditional, they are allocated under broad headings, making them much more flexible than CSS grants.

Pro-cyclicality of CSS

The very purpose of CSS is to ensure a minimum standard of public services. According to the National Development Agenda, the priorities are:

- Poverty Elimination – Livelihoods, Jobs and Skill Development
- Drinking Water and Swachh Bharat Mission
- Rural Connectivity: Electricity; Access Roads and communication.
- Agriculture, including Animal husbandry, Fisheries Integrated
- Watershed Management and Irrigation
- Education, including Mid-Day Meal
- Health, Nutrition, Women and Children
- Housing for All: Rural and Urban
- Urban Transformation
- Law and Order, Justice Delivery Systems
- Others which may include Wildlife Conservation and Greening

The total objective is to achieve higher human development, livelihood security, and an improved standard of living. To achieve these priorities, resources must be utilized effectively. Literature suggests a pro-cyclical utilization of resources due to these fund-sharing arrangements. As GSDP rises, utilization rises, and the unspent balance falls, indicating that absorption capacity is proportional to per-capita GSDP. This also demonstrates the necessity for financial transfer changes to address the pro-cyclical and divergent nature of fund use, ensuring CSS fulfil their duty as a vehicle of state equalization (Jha et al., 2021).

States with low human development and various development issues, such as Bihar, Uttar Pradesh, Odisha, and Jharkhand, also lag in realizing the budgeted provision for CSS.

Bihar, which faces multiple developmental challenges and receives the largest share from the central government, shows a gap of more than 3.5 percent of GSDP on average. During the COVID-19 years, Core of Core schemes had a larger share than Core schemes, which require matching contributions from the state. Despite this, the gap persisted as in non-COVID years, indicating states' inability to cope with the conditionalities of CSS.

Table 1: Difference between Actuals and Budget Estimates of CSS outlay of Union Government to states whose HDI < 0.5

Difference of Actuals and Budget Estimates as percent of GSDP				
year	Bihar	Uttar Pradesh	Odisha	Jharkhand
2018	3.96	1.26	1.05	1.19
2019	3.91	1.12	0.73	1.36
2020	3.88	1.40	0.81	1.26
2021	4.08	1.22	1.17	1.27
2022	3.74	1.89	1.49	1.42

Source: CAG, Union Budget documents

Table 2: Difference between Actuals and Budget Estimates of CSS outlay of Union Government to states whose HDI > 0.5

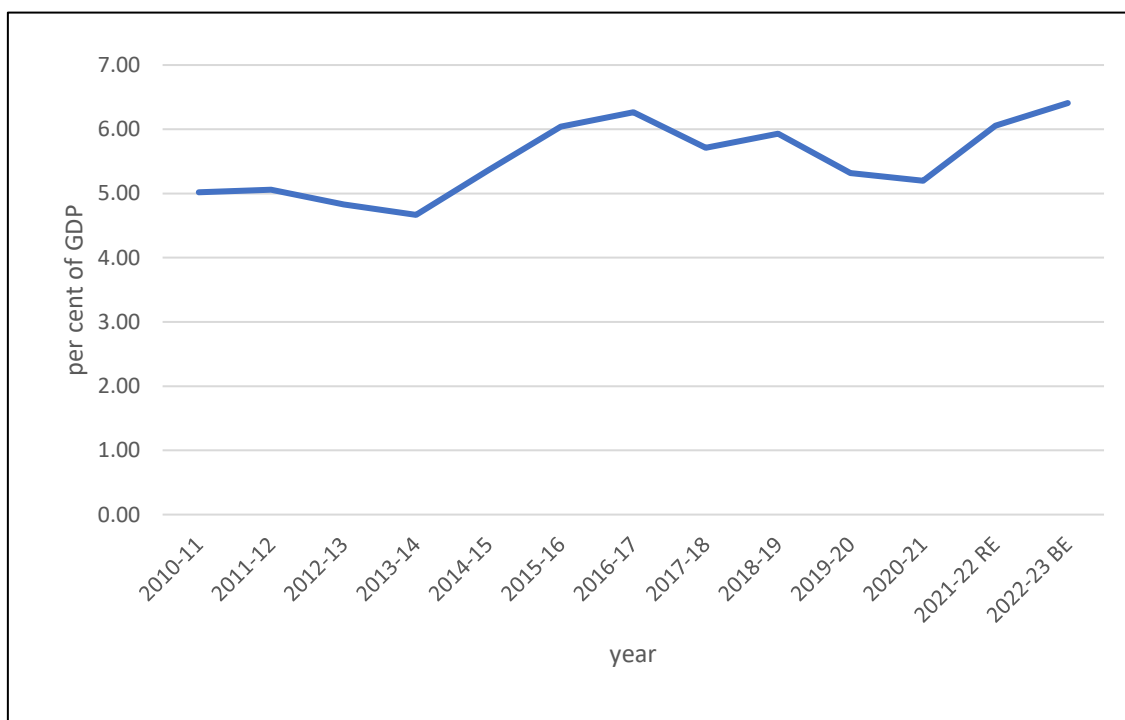
Difference of Actuals and Budget Estimates as percent of GSDP				
year	Tamil Nadu	Karnataka	Punjab	Kerala
2018	-0.61	-0.81	-0.65	0.68
2019	-0.10	0.09	-0.59	0.55
2020	0.05	-0.13	0.56	0.72
2021	0.19	0.00	0.45	0.51
2022	0.04	-0.18	0.71	0.59

Source: CAG, Union Budget documents

Compared to the low human development regions, the high human development states show greater commitment to the National Development Agenda, even though they are already ahead of the national average in many indicators. In some years, there is more outlay than budget provision, clearly showing the issue of procyclicality. This suggests that CSS cannot fully achieve their purpose due to structural difficulties. The utilization of resources does not necessarily cater to development needs. States with significant service deficiencies also suffer from poor governance. Delays in implementing schemes and submitting Utilization Certificates have resulted in delayed distribution of Union share instalments (Jha et al., 2021). States with higher realization are top performers in the Good Governance Index released by the Union Ministry of Home Affairs and Ministry of Cooperation, while states with lower realization rank lower on the list of good governance. One key observation from Das and Mitra (2013) is that in most CSS, states cannot use Central funds to hire permanent workers. Instead, they can only use salary-related funds for contract employees who can be readily dismissed. The government's reliance on CSS for new interventions in development sectors has led to a scarcity of permanent state government officials in these areas over the past decade (Das and Mitra, 2013). This points towards the issue of conditionalities, which must be addressed

The Fourteenth Finance Commission recommended increasing the share of net tax proceeds from 32% to 42%. As a result of the elimination of five-year national plans in 2016-17, states lost their plan subsidies and increased their share of centrally funded schemes from 25 per cent to 40 per cent. After accounting for these two factors, the effective increase from state devolution was far lower than the 10% rise in tax devolution (Mohan, 2023).

Figure 4 : Total Central government transfer as per cent of GDP



Source: CAG, Budget Documents

Some suggestions

Need for flexibility in CSS: While central government intervention in development is not inherently problematic, it is important to remember the rationale behind placing development-related responsibilities in the State and Concurrent Lists. The intent was to allow states the flexibility to address their unique development challenges effectively. However, the increasing Union expenditure on state matters has significantly constrained the fiscal capacity for items listed under Union responsibilities. This shift has resulted in a misalignment of resources, limiting the ability of states to innovate and tailor solutions to their specific needs. It is crucial to achieve a balanced and effective development strategy to provide states with the fiscal autonomy and flexibility needed to address their diverse and evolving challenges. While the central government can state the national agenda, the state governments should be given the flexibility to utilise funds for the national agenda by not making the funds conditional or tied.

Priority for progressivity: The literature proves that Finance Commission grants are more progressive than CSS and other conditional transfers. A study by Jha et al. (2021) compares the progressivity of per-capita Finance Commission devolution and per-capita

non-Finance Commission grants (largely CSS grants) for the major states, excluding Goa. They observed that the formula-based Finance Commission devolution is much more progressive than the discretionary CSS grants. While Finance Commission grants are not completely unconditional, they are allocated under broad headings, making them much more flexible than CSS grants.

On Grant-in-aid

Abstract

Ever since local governments gained prominence as the third tier in the federal finance structure of India with the 73rd and 74th Constitutional Amendment Acts (CAAs) of 1993, a large number of functions, functionaries and finances have been devolved to local governments in most of the states. Starting with the 11th Union Finance Commission (hereafter UFC), the specific Terms of Reference (ToR) of the UFCs with respect to Local Governments have been following the article 280 1bb itself; *'the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State.'* Considering the rising prominence of local governments in local service delivery, it is imperative that more funds should be devolved to adhere to the goals of equity and efficiency through decentralised governance. Starting with the 10th Union Finance Commission (UFC), the UFCs have been devolving substantial grants to the local governments. The grants to local bodies as a percent of the divisible pool has seen a rise from 1.3% in 10th UFC to about 4.3% in the 15th UFC. However, it is also perplexing to note that the increased proportion of tied and performance-based grants has also become a core feature of the 15th UFC recommendations which has derailed the spirits of devolution and participatory planning. For Kerala, which has implemented decentralised governance in its true spirit and has garnered impressive gains, it is essential to get increased funds based on performance and requirements. Therefore, in the background of the 16th UFC being constituted, the framework of grant-in-aid devolution to the local governments followed by the various UFCs are to be properly assessed for formulating the suggestions to the 16th UFC. Taking cues from the previous UFCs, this draft critically looks at the criteria, conditionalities and tied nature of previous UFC recommendations while suggesting a major overhaul while arriving at local government's grant devolution by the 16th UFC while preparing a memorandum by Govt of Kerala. Revised criteria which is based share and projections of the grants are also attempted based on India's divisible pool projections by Gulati Institute of Finance and Taxation.

¹⁴ Prepared by Dr Nirmal Roy V P, Assistant Professor, GIFT and Dr Shency Mathew, Research Associate, GIFT.

Introduction

Article 280 (1bb) of the constitution vests power with the Finance commission (to provide

‘the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State.’

This has been included in the Terms of Reference (ToR) of the various finance commissions so as to recommend grants-in-aid to the local governments. Though various Central Finance Commissions (UFC) have recognised that UFC grants are essential to empower the local governments in order to improve their functioning and have significantly increased the volume of transferable funds, its efficacy in recent years is posing severe challenges contradicting the constitutional provision itself. This article unravels the changing contours of the framework of various UFCs with respect to grants to the local governments in India so as to suggest relevant issues pertaining to grants allocation by the 16th UFC to local governments. The following sections argue scenarios with some emphasis on the state of Kerala, which is a torch bearer in the realm of local government institutions.

1. Criteria for Devolution

The UFC has formulated a distinct criterion for arriving at the share of various states; with various UFC formulating various formulas. The last UFC, i.e, 15 and the previous UFC, 14 considered only the population (90%) and geographical area (10%) criteria for devolution. A summary of the criteria followed by the various UFC’s since the 73rd and 74th CAA were enacted is given below.

Table 1: Criteria of UFCs

Criteria	10 th UFC	11 th UFC	12 th UFC	13 th UFC		14 th UFC	15 th UFC
				RLG	ULG		
Index of decentralisation		20		15	15		
Revenue effort		10	20				
FC local body grants utilization index				5	5		
Index of deprivation			10				
Proportion of SC/STs in population				10	0		
Population (() denotes Census year))	100 (1971)	40 (1971)	40 (2001)	50 (2001)	50 (2001)	90 (2011)	90 (2011)
Geographical Area		10	10	10	10	10	10
Distance from highest per capita income		20	20	10	20		
Total	100	100	100	100	100	100	100

Source: 15 FC report 2020

Importance given only to head count will reduce the characteristics of the head count in itself. This is essential for local bodies, because they are providing local public good according to the requirements of the local population. While population characteristics are not uniform, characteristics such as gender, ageing, along with materialist features such as historically marginalized, urban and rural all play a role in shaping the local demand of public goods. Therefore, it is essential to weight in relevant population characteristics into the formula as it is more inclusive than merely taking the basic head count of the population.

Also, the highly populous and large state can corner a major chunk of the grant distribution for both RLBs and ULBs. Therefore, states such as Uttar Pradesh (16.05%), Maharashtra (9.29%), Bihar (8.26%), West Bengal (7.26%) Madhya Pradesh (6.56%) and Rajasthan (6.2%) are recommended higher shares correspondingly with their population share and their geographical size as per the 15th UFC devolution (15 UFC Report, 2019). Kerala's share has taken a downward trend in the course of the 14th (2.67%) and 15th UFC period (2.68%). This is shown in the annexure table (A1).

Taking population as a criterion can disincentives those states which have taken the measures to control population and thus have low fertility rate. So, a better measure has to be adopted. It will be worthwhile to consider the ***proportion of elderly in the state's population*** also as a criterion for devolution, considering the unfavorable implications of aging on the economy warranting more government interventions at the local level. States such as Kerala which have a higher proportion of senior citizens (UNFPA 2023) stand to gain in this scenario. It is also outmost important to include the most deprived of the population, as their developmental requirements are more acute than the rest of the population. Therefore, ***proportion of SC & ST population*** is also included as a criterion for *deprivation*

It is also essential to include some criteria to increase the efficiency in the local governance. Taking cue from the earlier UFCs (11, 12, 13) with respect to ***equity and efficiency*** criteria like distance from highest per capita income, index of deprivation, index of devolution and revenue effort needs to be considered while formulating the criteria. All these criteria are more inclusive and make economic sense, especially the as it is again crucially linked to performances of the local bodies. As followed by the 12th UFC, the ***index of devolution*** may be considered as a criterion so as to incentivise achievements and to motivate states to devolve functions, functionaries and finances to the local governments. Banking solely on the population and size criteria might deprive states that have made progresses in devolving functions to the local governments. ***Own tax revenue*** of the local body may be a good indicator for revenue effort for devolving funds to the states for local governments. As suggested by various UFC's the property tax has been identified as a major source of own source revenue and recently updated too. The own source of revenue is slated to increase with the recent hike in property taxes.

Based on the above suggestions, the new criteria formulated towards deciding the states wise share of grants to local governments are given table 2.

Table 2: Proposed Criteria for 16th UFC

SL No	Criteria	16 th UFC
1.	Index of devolution	10
2.	Revenue effort	15
3.	Aged in population (2011 Census)	10
4.	SC/STs in population (2011 Census)	5
5.	Population*	50
6.	Geographical Area	10
7.	Total	100

It is worthwhile to note that the share of Kerala as per the recommendations of the 11th, 12th and 13th UFCs were respectively 4.0%, 4.54% and 3.11%. As shown in table 1, these UFCs have used a much-disaggregated criteria for allocating grants to local governments. Our proposed criteria provided in table 2 is similar to the 11th, 12th and 13th UFCs wherein we have included the indicators of index of devolution, revenue effort, proportion of SC & ST population and proportion of the aged population for reasons mentioned in the above sections¹⁵. Based on the above criteria with its weightage, the share of the states is constructed and is provided below.

It can be seen below that Kerala's share (4.61%) now has substantially grown up from 2.5% in 14 and 15 UFC to the levels of 12th UFC.

¹⁵ While demographic indicators are based on 2011 Census, Index of evolution is borrowed from the Devolution Report 2015-16 (MoPR 2017) and Revenue effort is calculated using the 'Finances of Panchayati Raj Institutions' (RBI 2024).

Table 3: Proposed share of states

State	Population	Size	SC/ST Population	Aged Population	Index of Devolution	Revenue Effort (PRI)	Total
Weights (percent)	50	10	5	10	15	10	100
Andhra Pradesh	2.10	0.53	0.10	0.30	0.61	0.05	3.69
Arunachal Pradesh	0.06	0.27	0.36	0.21	0.11	0.00	1.02
Assam	1.32	0.26	0.11	0.29	0.39	0.65	3.02
Bihar	4.42	0.31	0.10	0.31	0.57	0.71	6.42
Chhattisgarh	1.08	0.44	0.24	0.34	0.50	0.25	2.86
Goa	0.06	0.01	0.04	0.44	0.07	0.20	0.83
Gujarat	2.56	0.64	0.11	0.34	0.83	0.32	4.80
Haryana	1.08	0.14	0.09	0.36	0.70	0.08	2.45
Himachal Pradesh	0.29	0.18	0.18	0.46	0.50	0.45	2.07
Jharkhand	1.40	0.26	0.21	0.28	0.55	0.39	3.10
Karnataka	2.59	0.63	0.11	0.39	0.92	0.77	5.41
Kerala	1.42	0.13	0.04	0.58	1.33	1.11	4.61
Madhya Pradesh	3.08	1.01	0.20	0.34	0.65	0.14	5.42
Maharashtra	4.77	1.01	0.09	0.44	1.00	0.37	7.68
Manipur	0.12	0.07	0.19	0.30	0.22	0.30	1.20
Meghalaya	0.13	0.07	0.46	0.21	0.00	0.00	0.87
Mizoram	0.05	0.07	0.29	0.26	0.00	0.05	0.72
Nagaland	0.08	0.05	0.42	0.26	0.00	0.00	0.82
Orissa	1.78	0.51	0.23	0.42	0.46	0.62	4.02
Punjab	1.18	0.16	0.15	0.46	0.28	0.11	2.33
Rajasthan	2.91	1.12	0.17	0.32	0.63	0.36	5.51
Sikkim	0.03	0.02	0.19	0.27	0.76	0.68	1.95
Tamil Nadu	3.06	0.43	0.09	0.44	0.87	0.61	5.50
Telangana	1.49	0.37	0.16	0.54	0.70	0.21	3.46
Tripura	0.16	0.03	0.27	0.37	0.55	0.17	1.55
Uttar Pradesh	8.48	0.79	0.12	0.34	0.52	0.30	10.54
Uttarakhand	0.43	0.18	0.11	0.38	0.54	0.06	1.69
West Bengal	3.87	0.29	0.15	0.36	0.74	1.05	6.47

Source: Author's Calculation

2. Size of devolution -

The 13th UFC rightly notes that “Decentralisation results in widening the ambit and improving the quality of services being provided by the local bodies. This requires substantially larger outlays.”

The 15th UFC recommended a release of ₹4.36 lakh crores to local bodies, the highest so far. Barring the 13th UFC, all other UFC's recommendations of grants were in absolute figures. The 12th I UFC recommended grants to local bodies as a percentage of divisible pool (total of 2%). As per the 15 UFC (2019), the grants to local governments as a share of total divisible pool has increased from 1.38% in X UFC to 3.06% in 14 UFC and is 4.31% for the 1st year of 15 UFC, that is 2020-21.

It is imperative that the rising developmental expenditure is provided to the local governments since many of the services are delivered locally and efficiently. It is suggested that the example of the 13 UFC may be taken into consideration wherein the UFC grants to local bodies was recommended as a share of the divisible pool (total of 2.28% for 2010-15). Therefore, the 16 UFC should at least earmark an amount **commensurating 5% - 7.5% of the divisible pool** for local governments. GIFT has come up with projections of the divisible pool of the Union from which grants are provided.¹⁶ Based on the projections carried out by GIFT, this will come to the tune of ₹10.77 - 16.15 lakh crore for the 16th UFC period (2026-27 to 2030-31).

Table 4: Year Wise Projections of the Divisible Pool for various shares (₹ crore)

16 th FC Year	Divisible pool (GIFT)	5 % of Divisible Pool	6 % of Divisible Pool	7 % of Divisible Pool	7.5 % of Divisible Pool
2026-27	35,95,700	1,79,785.0	2,15,742.0	2,51,699.0	2,69,677.5
2027-28	39,21,237	1,96,061.8	2,35,274.2	2,74,486.6	2,94,092.8
2028-29	42,76,245	2,13,812.3	2,56,574.7	2,99,337.2	3,20,718.4
2029-30	46,63,394	2,33,169.7	2,79,803.7	3,26,437.6	3,49,754.6
2030-31	50,85,594	2,54,279.7	3,05,135.6	3,55,991.6	3,81,419.5
Total	215,42171	10,77,109	12,92,530.2	15,07,951.9	16,15,662.8

Source: Author's Calculation

It has to be acknowledged that states like Kerala are devolving substantially to the local governments. Gupta and Chakraborty (2019) notes that while Kerala devolved about 20% of Own tax revenue (during 2016-219) to Local governments, the corresponding share of the Union government was only about 9%. Also, the average annual per capita SFC Devolution (2015-16 to 2019-20) of Kerala is higher than the national average (RBI 2024). As per the Budget 2023-24 (GoK 2024), the state government has earmarked 27.19% of state's plan outlay amounting to ₹ 8528 crores to its local bodies.

3. Components of UFC Grants to LBs

The ratio of rural and urban local bodies within the inter-se distribution of the grants recommended by 15 FC was in the format of gradually improving from 67:33 (in 2020-21) to 65:35 (in 2025-26). Apart from the grants to RLBs and ULBs, the 15th UFC has allocated grants for improving health services, setting up of new cities and shared municipal services. The amount (₹ crores) allocated by 15th UFC for various components are given in table 5.

¹⁶ 'Imbalances in fiscal federal resource sharing: It's time to redefine the divisible pool' Varughese, Sumalatha and Anitha Kumary (forthcoming)

Table 5: Components of 15th UFC Grant recommendation

SL No	Grants	2021-22	2022-23	2023-24	2024-25	2025-26	Total
	Inter-se distribution of grants at (b) above between RLB and ULB	67:33:00	67:33:00	66:34:00	66:34:00	65:35:00	-
1.	Grants for RLBs	44901	46513	47018	49800	48573	236805
2.	Grants for ULBs	22114	22908	24222	25653	26158	121055
3.	Grants for primary health sector	13192	13192	13851	14544	15272	70051
4.	Grants for incubation of new cities		2000	2000	2000	2000	8000
5.	Grants for shared municipal services	90	90	90	90	90	450
	Grand Total (1+2+3)	80297	84703	87181	92087	92093	436361

Source: 15 FC Report 2020

- Considering the rise in urbanisation and urban sprawl across the country, *the ratio of RLB to ULB may be 60:40* or in the format of gradually increasing from 65:35 in 2026-27 to 60:40 in 2030-31. Table 6 provides the projections based on this ratio for various shares of the divisible pool (5-7.5%) explained in the previous section.

Table 6: Recommended ratio and fund projections of India's rural and urban local bodies within the inter-se distribution of the grants for the 16 FC.

	Grants	2026-27	2027-28	2028-29	2029-30	20230-31	Total
Share of Divisible Pool	Inter-se distribution of grants at (b) above between RLB and ULB	65:35	65:35	62:38	62:38	60:40	
5%	Grants for RLBs	116860	127440	132564	144565	152568	673997
	Grants for ULBs	62925	68622	81249	88604	101712	403111
	Grand Total	179785	196062	213812	233170	254280	1077109
6%	Grants for RLBs	140232	152928	159076	173478	183081	808797
	Grants for ULBs	75510	82346	97498	106325	122054	483734
	Grand Total	215742	235274	256575	279804	305136	1292530
7%	Grants for RLBs	163604	178416	185589	202391	213595	943596
	Grants for ULBs	88095	96070	113748	124046	142397	564356
	Grand Total	251699	274487	299337	326438	355992	1507952
7.50%	Grants for RLBs	175290	191160	198845	216848	228852	1010996
	Grants for ULBs	94387	102932	121873	132907	152568	604667
	Grand Total	269678	294093	320718	349755	381420	1615663

Source: Author's Calculation

Some more suggestions that can be considered with respect to the distribution of funds to the urban local bodies are;

Considering the prominence of urban agglomerations in India's total urban population, the 15 has classified the urban areas again into two broad categories for grant recommendation; (1) One million plus cities and (2) less than one million plus cities. However, it has been noted there is a proliferation of rural areas having urban characteristics. These RLBs, lying in the periphery of cities, have regions that exhibit

urban features, but are still not considered as ULBs and are short of the much required urban amenities. The 13th UFC has recognised these entities as ‘nagar panchayats’ while highlighting the deprivations these entities face. Therefore, it is necessary that these “urban’ RLBs or census towns *be given fiscal assistance by the 16th UFC.*

Though the 15th UFC has recommended a sum of ₹8000/- crore to States as grants for incubation of new cities, 8 cities during the whole period of 15th UFC is meager. It is therefore suggested that *all states should be provided grants for the incubation of new cities to the tune of ₹1000/- Crore.*

With respect to the three tiers of the RLBs, i.e, Grama Panchayat (GP), Block Panchayat (BP) and District Panchayat (DP) the *shares may be decided by the respective State Finance Commissions (SFCs)*, as the requirements of the various tiers in various states can vary across the states. 15 UFC (2019) had recommended a maximum to minimum range in the distribution of funds.

4. Conditionalities for Grants

Apart from these classifications, various UFCs have also formed conditionalities for the allocation of grants. The various UFCs (11, 12, 13, 14, 15) have highlighted the unavailability of audited public accounts and databases by the local bodies. The 15 UFC has put up certain entry conditions for local governments.

1. With respect to identifying property taxes as a major source of own revenue of local bodies, notifying the floor rates and constantly updating the rates in tune with the state's GSD is an entry condition for all the ULBs for receiving UFC grants.
2. Another entry condition is to make available the local body accounts in the public domain online (availability of unaudited accounts for the previous year and audited accounts for the period preceding the previous year) by the local body for qualifying any grant from UFC. Since uniformity of account practices of states vary, there are possibilities that local bodies might find it difficult to provide data in the prescribed format of MoPR in their online portal resulting in losing substantial 15 UFC grants owing to this conditionality.
3. State Finance Commission (SFC) constitution is another conditionality that has been mentioned by most of the previous UFCs. The 15 UFC in fact made this as a basic conditionality for availing any UFC grant.

Considering the fact that proper accounting is necessary for the public money, it is imperative that all local bodies should have their accounts audited and available in the online domain. However, since this process requires technical expertise and in conformity with the accounting practices of the Union and States, it is essential to train the local bodies to collect and enter the required data with respect to income from own tax revenue, assigned taxes, grants from the State, Finance Commission grants and grants for any agency functions assigned by the Union and State Governments. *The 16 UFC can assign a grant component for training to the State’s Local Development Department in this regard.* This is to enable real time data entry with respect to revenue receipts and

expenditure on various accounts. (GIFT may place a proposal for disseminating good practices across the states and training local bodies in Kerala).

To adhere to the Constitutional mandate that recommendations of the SFCs shall be the basis for Finance Commissions to consider the measures to augment the Consolidated Fund of States, it is essential for the state to constitute the relevant SFC for availing the UFC grants. Therefore, it is suggested that the ***states should constitute the 7th SFCs at the earliest and intimate this to the 16th UFC.*** States such as Kerala has complied with the constitutional mandate of constituting its 6th SFC by 2019 itself and needs to constitute the 7th SFC by 2024 to avail the benefits of 16 UFC.

Considering the fact that professional taxes are a major source of revenue for local governments, it is also essential to update the existing professional tax slabs. Though various UFCs have highlighted the stagnant nature of the professional taxes and need to have a CAA in changing the rates, the 16th UFC ***should recommend the Union government to expedite the CAA to revise professional taxes or else supplement the local governments with additional funds until its enactment.***

5. Tied and Untied grants

Similarly to the conditionalities, various UFCs have recommended grants that are tied to the performances of the local bodies. It has to be noted that the quantum of performance based funds have increased from 10% (RLBs) and 20% (ULBs) in the 14th UFC to 60% in the 15th UFC. A summary is given below.

Table 7: Increasing nature of Tied funds across UFC grants

UFCs	Tied and Untied Grants for RLBs	Tied and Untied Grants for ULBs
X	Grants should not be used for giving salaries and wages	
11	1. Maintenance of accounts to be the first charge. 2. Provision of civic services 3. Grants should not be used for giving salaries and wages	
12	Priority to water supply and sanitation	
	Creation of databases on their finances and maintenance of accounts	
13	Six conditions to access the performance grant	Nine conditions to access the performance grant
14	Unconditional basic grant (90%) for improving the status of specified basic civic services. Conditional performance grant (10%) for revenue improvement.	Unconditional basic grant (80%) and a conditional performance grant (20%). Municipalities need to publish the service level benchmarks relating to basic urban services each year.
15	Online availability of audited accounts & Sixth SFC constitution as a precondition to avail grants.	

	60 per cent grants tied to be spent on water and sanitation	For one million plus cities, the funds recommended were fully tied towards the improvement of ambient air quality and for the improvement of conservation, supply and management of water and efficient solid waste management. For non-one million urban agglomerations, 60 percent of the grants were tied to (a) drinking water (including rainwater harvesting and recycling) and (b) solid waste management.
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Source: Various UFC reports

It has to be noted that in the 15th UFC, the funds to these local bodies were tied to specific expenditure or ensuing performances. The 15 UFC earmarked 60% of local body (RLBs and non million plus cities) funds to (a) sanitation and maintenance of ODF status and (b) supply of drinking water and rainwater harvesting. This has to be seen as a kind of centralisation, where the UFC decides where the local governments should use the funds and if targets are not achieved, funds are lost in the subsequent years. This is against the spirit of decentralised planning and devolution. This also is a bane to those local bodies that have already achieved the amenities mentioned above. Therefore, to uphold the spirit of decentralization and devolution, the interventions should be minimal. **Therefore, we suggest that UFC grants to local bodies should not be extensively tied and local bodies should be permitted to use funds suiting their developmental requirements as listed under the eighteen subjects enshrined in the Twelfth Schedule.**

In fact, the 15th UFC has excluded the state of Kerala from this performance based grant as its million plus cities have comparatively higher quality air and therefore the 15th UFC have allowed these ULBs to divert grants as listed under the eighteen subjects enshrined in the Twelfth Schedule. It is therefore highly imperative that this **freedom of fund usage be given to local governments if their requirements are not matching with the recommendations of the UFC.**

For ULBs, the 15th UFC had tied considerable amounts to ambient air quality. As air pollution is not a localized phenomenon, the source and the impact may be in different places. Therefore, instead of the criteria of improving ambient air quality, **developing solid and liquid waste management infrastructure** can be considered as a criterion for conditional transfers for the urban local bodies.

As traffic congestion is a severe issue facing most of the Indian urban agglomerations, conditional grants may be recommended for **CAPEX on urban mobility.**

6. UFC Grants - Actual Release Versus Recommended

Various UFC have highlighted the fact that the actual UFC grant release to local bodies is not in tandem with the recommended. In this regard, a summary provided by the 15th UFC is given below.

Table 8: Funds actually released by UFCs

UFCs	% Released for RLBs	% Released for ULBs
X	81.6	83.4
11	82.5	87.6
12	94.6	89.4
13	90.7	82.1
14	89.6	85.2

Source: 15 FC Report 2020

It can be seen that there is a shortage of about 5% and 18% for the RLBs and between 10% and 18% for ULBs. The 15th UFC itself admits that this is “because of failure of the local governments to meet the conditionalities attached to the performance grants by the Commissions. Sometimes the concerned Union ministries had also added to these conditionalities.” Based on the discussion in the previous discussion, it is imperative that minimal conditionalities are required for local governments to adhere to the spirit of participatory planning, decentralised governance, devolution and even the ideals of equity and efficiency.

Conclusion

To conclude, states like Kerala which has made a mark in decentralised governance and transfer of functions, functionaries and finances are to be seen as a role model of local governance in India. It is imperative that in order to spread the best practices of the state in this aspect, more fiscal support is essential for training and developing appropriate institutions in the state to coordinate this. Regular fiscal support to spread the best practice stories is solicited for institutions engaged in this realm. In the context of the rising conditions and performance-based grants-in-aid to local government institutions, it is imperative that the constitutional provision guiding local government provision needs to be adhered. Considering the rising importance of local governments in local service delivery in the present context, it become pertinent to increase the overall funding to local governments in India. We argue that amounts commensurating 5% -7.5% of the divisible pool should be earmarked for local governments for the 16 UFC period. The evaluation of the criteria guiding the devolution of grants-in aid to local governments necessitated the need to expand the formula by including index of devolution, proportion of aging and revenue effort, as it is more inclusive than taking merely the head count of the population and area. Considering the rising urbanisation and urban sprawl across the country, it is essential to alter the ratio of RLB to ULB to 60:40 or in the format of gradually increasing from 65:35 in 2026-27 to 60:40 in 2030-31. We also suggest that UFC grants to local bodies should not be extensively tied and local bodies should be permitted to use funds suiting their developmental requirements as listed under the eighteen subjects enshrined in the Twelfth Schedule. To adhere to the spirit of participatory planning, decentralised

governance, devolution and even the ideals of equity and efficiency, it is imperative that minimal conditionalities are required in deciding how the local governments should spend the UFC grants. The detailed set of recommendations pertaining to grants in aide to local bodies are summarised below.

Summary of Suggestions

1. The 16 UFC should at least earmark amounts *commensurating 5% -7.5% of the divisible pool* for local governments.
2. The *proportion of elderly in the state's population* should also be considered as a criteria for devolution, considering the unfavorable implications of aging on the economy warranting more government interventions at the local level. Taking cue from the earlier UFCs (11, 12, 13) with respect to *equity and efficiency, index of devolution and revenue effort* should be taken into consideration while determining the criteria, as it is crucially linked to performances of the local bodies.
3. The Inter-se distribution of grants between RLB and ULB may be in *the ratio of 60:40* or in the format of gradually increasing from 65:35 in 2026-27 to 60:40 in 2030-31.
4. It is important to consider the importance of urbanised RLBs (called Nagar Panchayats by 13th UFC). Therefore, it is necessary that these *“urban’ RLBs be given fiscal assistance by the 16th UFC*.
5. Elaborating the suggestions of the 15th UFC with respect to the incubation of new cities, it is suggested that *all states should be provided grants for the incubation of new cities to the tune of ₹1000/- Crore*.
6. With respect to the three tiers of the RLBs, i.e, Grama Panchayat (GP), Block Panchayat (BP) and District Panchayat (DP) the *shares may be decided by the respective State Finance Commissions (SFCs)*.
7. *The 16 UFC can assign a grant component for training to the State’s Local Development Department in this regard*.
8. The requirement of making available the local government’s *accounting data online in the public domain* should be *insisted*, however *with a lag of one year* to enable ample time for the local bodies to collect, audit and enter the data in the prescribed format.
9. The 16th UFC *should initiate the Union government to expedite the CAA to revise professional taxes or else supplement the local governments with additional funds until its enactment*.
10. To uphold the spirit of decentralization and devolution, the interventions should be minimal. Therefore, *we suggest that UFC grants to local bodies should not be extensively tied and local bodies should be permitted to use funds suiting their*

developmental requirements as listed under the eighteen subjects enshrined in the Twelfth Schedule.

11. Freedom of fund usage be given to local governments if their requirements are not matching with the recommendations of the UFC.
12. Developing solid and liquid waste management infrastructure can be considered as a criterion for conditional transfers for the urban local bodies.
13. As traffic congestion is a severe issue facing most of the Indian urban agglomerations, conditional grants may be recommended for CAPEX on urban mobility.

Annexure

Table A 1: Share of States in UFC Grants to Local Bodies

State	X th UFC	11 th UFC	12 th UFC	13 th UFC	14 th UFC	15 th UFC
Andhra Pradesh	7.93	9.20	7.84	8.29	4.28	4.32
Arunachal Pradesh	0.09	0.30	0.28	0.35	0.37	0.38
Assam	2.74	2.50	2.32	2.13	2.22	2.64
Bihar	10.67	8.80	7.06	6.59	8.24	8.26
Chhattisgarh			2.81	2.42	2.38	2.39
Goa	0.11	0.10	0.12	0.20	0.12	0.12
Gujarat	4.82	4.80	5.38	4.22	5.23	5.26
Haryana	1.84	1.80	1.92	1.77	2.08	2.08
Himachal Pradesh	0.64	0.70	0.62	0.74	0.70	0.71
Jammu & Kashmir	0.92	0.90	1.28	1.30	1.66	
Jharkhand			2.32	2.25	2.77	2.78
Karnataka	5.43	5.20	4.84	7.54	5.27	5.29
Kerala	3.80	4.00	4.54	3.11	2.67	2.68
Madhya Pradesh	7.63	8.70	8.10	6.51	6.52	6.56
Maharashtra	8.92	9.70	11.10	10.07	9.55	9.59
Manipur	0.21	0.20	0.22	0.35	0.13	0.29
Meghalaya	0.19	0.30	0.23	0.46	0.01	0.30
Mizoram	0.06	0.10	0.12	0.34	0.04	0.15
Nagaland	0.10	0.10	0.18	0.44	0.04	0.21
Odisha	4.09	3.90	3.63	3.58	3.70	3.72
Punjab	2.49	2.10	1.98	2.04	2.28	2.29
Rajasthan	4.75	5.90	5.80	5.96	6.31	6.36
Sikkim	0.05	0.10	0.06	0.22	0.07	0.07
Tamil Nadu	7.49	6.60	5.77	6.33	5.92	5.94
Telangana					3.05	3.04
Tripura	0.28	0.30	0.26	0.41	0.19	0.31
Uttar Pradesh	16.37	15.70	13.78	14.79	16.01	16.05
Uttarakhand			0.78	0.91	0.94	0.95
West Bengal	8.43	7.80	6.66	6.68	7.25	7.26

Source: 15 FC Report 2020

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9

Enhanced Grant-in-Aid for Tribal Development in Kerala under Article 275 (1) of the Indian Constitution¹⁷

Abstract

We are submitting this input to Government of Kerala for placing before the 16th Finance Commission, requesting an additional grant-in-aid of Rs. 2500 crore to Kerala under Article 275(1) of the Constitution. These funds are crucial to bridge the development gap between Scheduled Tribe (ST) communities in Kerala and the general population. This investment aligns with the national vision of Vikasit Bharat 2047 (Developed India by 2047), by ensuring the speedy and inclusive development of tribal communities.

There is need for improved infrastructure to connect tribal settlements to the mainstream. Funds would be utilized for constructing roads and bridges, establishing reliable transportation links, and upgrading existing infrastructure within these communities. Additionally, internet connectivity would bridge the digital divide, opening doors to educational resources and economic opportunities. Empowering tribal communities also requires economic security. Financial support also requires in skill development programs tailored to the needs of tribal areas, focusing on sectors like ecotourism, agriculture, and traditional handicrafts. This, coupled with market access initiatives for tribal products, will foster sustainable livelihoods and entrepreneurial spirit. Investing in basic amenities like clean drinking water within a reasonable distance, proper sanitation facilities, and reliable electricity, including solar solutions, is crucial. By addressing these fundamental needs, the grant will significantly improve the quality of life for tribal communities.

Kerala's commitment to tribal development is unwavering. An additional grant of Rs. 2500 crore will significantly accelerate progress towards bridging the development gap and empower tribal communities to achieve their full potential. This investment aligns perfectly with the national vision of Vikasit Bharat 2047, and Kerala seeks the esteemed Commission's support in building an inclusive and prosperous future for all its citizens.

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Introduction

The Finance Commission (FC) have been charged under Article 280 (1) of the Constitution, with the duty of making recommendations to the President as to the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India. Article 275 provides for the payment of such sums as the Parliament may by law provide as grant-in-aid of the revenues of such states as parliament may determine to be in need of assistance. The first proviso to Article 275 requires grants to be made to a state to enable it to meet the cost of schemes of development undertaken with the approval of the central government for the purpose of promoting the welfare of the Scheduled Tribes (ST) or to raise the level of administration of the Scheduled Areas in the state to that of the rest of the areas of the state.

Principles of grant-in-aid need to be considered

Article 275 of the Indian Constitution empowers the central government to distribute grants-in-aid to states in need of financial assistance. However, simply providing funds isn't enough. Following established principles for grant devolution is crucial. These principles, set by the Finance Commission, ensure fair allocation based on factors like a state's budgetary needs and tax effort. This targeted approach guarantees vital resources reach states facing resource constraints, promotes development of disadvantaged communities, and fosters transparency in how funds are used. Ultimately, adhering to these principles strengthens India's federal structure by enabling balanced development across all states. The following are some of the principles adopted by the first FC which are still relevant to get adequate grants-in-aid for the tribal development in Kerala.

1. *Principle of need:* Kerala, despite boasting social development indicators, faces a unique challenge in uplifting its tribal communities. These communities, residing in geographically isolated regions, have historically lacked access to basic necessities like quality education, healthcare, and infrastructure. This marginalisation has resulted in lower literacy rates, higher infant mortality, and limited livelihood opportunities compared to the state average. Following the principle of need enshrined in Article 275(1), Kerala requires enhanced grants-in-aid to bridge this development gap. These grants would be crucial for implementing targeted programs focused on education, healthcare, skill development, and infrastructure creation within tribal regions. By addressing these fundamental needs, Kerala can ensure inclusive development and empower its tribal communities to participate fully in the state's social and economic progress.
2. *Budgetary needs:* While Kerala enjoys commendable social development indicators, budgetary constraints significantly hinder progress in tribal welfare. These geographically dispersed communities require substantial investments in infrastructure development, including roads, schools, and healthcare facilities. Due to their remote locations, the cost-of-service provision in these areas is considerably higher. Therefore, Kerala's existing budgetary allocations struggle to meet the specific needs of tribal populations. Enhanced grants-in-aid under Article 275(1) would significantly bolster Kerala's financial capacity to address these budgetary needs. This critical support would enable targeted investments in

tribal development, promoting social equity and ensuring inclusive growth across the state.

3. *Economy in expenditure*: Recognising the importance of fiscal responsibility, the Kerala government prioritises spending efficiency in tribal development programs. However, limited budgetary resources often necessitate spreading funds thinly, hindering the effectiveness of these initiatives. Enhanced grants-in-aid under Article 275(1) would allow for a more strategic allocation. By injecting additional funds, we could invest in larger-scale, high-impact projects with long-term benefits. This approach aligns with the principle of "economy in expenditure" by maximising the return on each rupee invested. For instance, constructing a centralised healthcare facility in a remote tribal region might be more cost-effective than building smaller, under-equipped clinics in scattered locations. This targeted approach would optimise resource utilisation and deliver more impactful development outcomes for Kerala's tribal communities.
4. *Standard of social services*: Kerala, while boasting impressive social development indicators overall, faces a disparity when it comes to its tribal communities. These communities, residing in remote areas, often lack access to basic necessities like quality healthcare and education. This limited access creates a significant gap in the "standard of social services" available to tribal citizens compared to the rest of the state. Enhanced grants-in-aid under Article 275(1) would be instrumental in bridging this gap. These funds would enable targeted investments in building schools, healthcare facilities, and providing essential services in tribal regions. By improving access to social services, these grants would promote social equity and ensure all citizens of Kerala, regardless of location, can benefit from the state's strong social development programs.
5. *Special obligations*: Kerala recognises its special obligation towards ensuring the well-being of its tribal communities. As enshrined in Article 275(1), the central government has a duty to assist states in promoting tribal welfare. Despite significant efforts, Kerala's budgetary constraints hinder progress in areas like infrastructure development, education, and healthcare access in geographically isolated tribal regions. Enhanced grants-in-aid would fulfill the central government's special obligation and empower Kerala to address these critical needs. These additional resources would be strategically allocated to bridge the development gap and create a more equitable future for Kerala's tribal communities. Ultimately, this investment fosters inclusive growth and strengthens the social fabric of the entire state.

Besides the above principles, the context wherein the 16th FC works sets a firm ground for providing enhanced grant-in-aid for the speedy tribal development, which is explained below.

6. *Broad purpose of Vikasit Bharat 2047*: Kerala's commitment to tribal development aligns perfectly with the vision of Vikasit Bharat 2047. This national initiative strives for inclusive growth, ensuring all regions and communities prosper. Despite Kerala's impressive social indicators, its tribal populations face significant challenges due to geographic isolation. Enhanced grants-in-aid under Article 275(1) would directly contribute to Vikasit Bharat's goals. These funds would enable targeted investments in infrastructure, education, employment and

healthcare for Kerala's tribal communities. By empowering these communities and bridging the development gap, Kerala can contribute to a truly Vikasit Bharat, where all citizens, regardless of background, have the opportunity to thrive.

Socio-Economic Status of Tribals in Kerala

Despite Kerala boasting impressive social development indicators, the story for the estimated 4.8 lakh tribals residing within its borders paints a contrasting picture which constitutes 1.43 per cent of the total population of Kerala. The socio-economic situation of Kerala's tribals stands in stark contrast to the progress achieved by the state as a whole. Kerala boasts impressive social indicators, with high literacy rates, excellent healthcare infrastructure, and a robust social safety net. However, these advancements haven't translated into tangible improvements for the tribal population. The data given in table 2 & 3 paints a clear picture. Kerala's tribals face significantly higher poverty rates, lower literacy levels, and poorer health outcomes compared to the general population. Limited access to basic amenities, coupled with a lack of secure livelihoods and land ownership, creates a vicious cycle of marginalisation and poverty for Kerala's tribal communities. This significant disparity necessitates immediate and targeted interventions to bridge the development gap and ensure inclusive growth for all sections of Kerala's society.

The Scheduled Tribes Development Department (STDD) of Kerala's 2013 report reveals a troubling truth: nearly half (48%) of all tribal households struggle below the poverty line. This economic vulnerability translates into a constant battle for basic necessities. The STDD report further exposes the lack of proper housing, with many tribals residing in inadequate and often dilapidated dwellings. Sanitation facilities are also scarce, with a significant portion lacking access to proper toilets. While electricity has reached most tribal settlements, dependable access to clean water remains a significant concern. Studies by the Kerala Institute of Local Administration (KILA) reveal a particularly grim situation in the tribal belt of Attappady, where many are forced to rely on potentially contaminated sources.

The educational landscape presents another area of disparity. Despite Kerala's exceptional general literacy rate exceeding 94%, the overall tribal literacy rate hovers around 76%. This translates to limited access to educational opportunities, hindering not only social mobility but also perpetuating the cycle of poverty. The situation becomes even more alarming when we consider health indicators. Data reveal significantly higher infant and maternal mortality rates in tribal communities compared to the state average. Malnutrition is another major concern, with nearly half of all tribal children suffering from stunting, a clear indicator of chronic malnutrition. This translates to a higher susceptibility to illnesses and stunted overall development.

Livelihood opportunities for Kerala's tribals are scarce. The STDD report indicates that only 10% of tribals own and cultivate their land. A significant portion (40%) work as agricultural labourers, often facing exploitation and low wages. Unemployment rates among tribals are considerably higher compared to the general population, further exacerbating their economic vulnerability. Land ownership rights are another significant hurdle. Historical injustices and encroachment by outsiders have left many tribals landless, hindering their ability to achieve economic independence. This lack of

landownership not only restricts their ability to build a secure livelihood but also severs their connection to their traditional way of life and cultural identity.

Current grant in aid is insufficient

Despite the financial assistance provided under Article 275(1) of the Indian Constitution, the significant development gap between tribals and non-tribals persists in Kerala. The exact allocation received for Kerala during the 14th and 15th Finance Commission is given in Table 1 and the limitations inherent in the current grant structure to demonstrate its inadequacy.

FC Period	Year	Grant received (crore)	Total
14 th FC	2015-16	5.00	
14 th FC	2016-17	6.95	
14 th FC	2017-18	8.03	
14 th FC	2018-19	4.72	
14 th FC	2019-20	6.33	
14 FC Total			31.03
15 th FC	2020-21	0	
15 th FC	2021-22	0	
15 th FC	2022-23	8.17	
15 th FC	2023-24	20.05	
15 th FC	2024-25*	-	
15 FC Total			28.22
Grand Total			59.25

Source: STDD
*There may be further grants received in 2024-25 of the commission periods.

The total grant received during the 14th FC period was ₹31.03 crore, while the total grant received during the 15th FC period (up to 2023-24) is ₹28.22 crore. The total grant received across all FC periods is ₹59.25 crore. The grant amount for the 14th FC period shows a steady increase from ₹5.00 crore in 2015-16 to ₹6.33 crore in 2019-20. However, there is a significant drop in grant received in 2018-19 (₹4.72 crore). No grants were received from the 15th FC during 2020-21 and 2021-22. The grant amount for the 15th FC period increased significantly in 2023-24 (₹20.05 crore) compared to 2022-23 (₹8.17 crore).

The data presented in Table 1 reveals a concerning trend of stagnant funding. This lack of increase raises concerns about the adequacy of these grants for addressing developmental needs. The consistently low amount raises questions about the effectiveness of these grants in addressing the development needs of Kerala's tribal communities.

Existing criterion for sharing grants-in-aid as per Article 275(1)

The Letter No. F.11015/01/2016-SG-I dated 20.6.2016 of Ministry of Tribal Affairs, Government of India illustrates the current criterion of allotment of funds as per Article 275(1) such as population, tribal area, past performance, support for innovation, support for emergent need and special purpose.

Firstly, the funding is often based on a tribal population percentage of the total state population. This approach fails to consider the specific needs and challenges faced by Kerala's tribal communities. Kerala's tribal population, though constituting a relatively smaller percentage (around 1.4%), resides in geographically dispersed pockets with unique developmental needs. Scattered settlements with limited infrastructure and challenging terrain necessitate a higher allocation per capita to achieve tangible results. The current funding model might provide a larger total sum, but it may not translate into sufficient resources for each individual in the tribal community.

Secondly, though the current guidelines permit states to take up activities for strengthening the infrastructure in the sectors critical to enhancement of human development indices and any other activities meant for welfare of Tribal population different from conventional development, in practice the focus is primarily on model residential schools. The current grant structure might not provide the flexibility or additional resources required for such targeted interventions.

Thirdly, a significant portion of the grant might be absorbed by administrative overheads, further reducing the resources reaching the grassroots level. This necessitates a more transparent and accountable allocation process with clear guidelines for utilising funds for specific community-driven development initiatives. Additionally, strengthening capacity building at the local level through training and empowering tribal representatives in project planning and implementation can ensure efficient utilisation of the allocated funds. Finally, the effectiveness of the current grant structure is hampered by limited monitoring and evaluation mechanisms. Without robust systems to track the impact of funded projects and identify areas for improvement, it's difficult to assess if the current level of funding is truly addressing the root causes of the development gap. A more data-driven approach with clear performance indicators and regular impact assessments is crucial to ensure that the allocated funds are making a tangible difference in the lives of Kerala's tribals.

While the grant-in-aid under Article 275(1) serves as a vital source of support, the current mechanism falls short in effectively addressing the specific needs and challenges faced by Kerala's tribal communities. A more nuanced funding approach, coupled with enhanced flexibility, transparency, capacity building, and robust monitoring systems, is essential to bridge the development gap and create a future where Kerala's tribal population can truly thrive.

Additional criterion to be taken for consideration

In addition to the main criterion that already considering, there might be other relevant aspects to take into account. These additional criteria should be weighed carefully and by comprehensively evaluating all pertinent factors, FC can make a well-informed and

thorough choice of the grants-in-aid requirements for tribal welfare by adopting additional criterion. The proposed additional criterion includes 1) socio-economic disadvantages of specific communities, 2) geographical remoteness, 3) land alienation and livelihood loss, 4) environmental degradation, 5) preservation of indigenous culture, 6) need based allocation and 7) state initiatives and resource constraints which are explained below.

1. Socio-economic disadvantages of specific communities.
Tribal communities within Kerala likely exhibit varying levels of development. Allocating funds based on factors like literacy rates, infant mortality, and poverty levels ensures those most in need receive the most support. This targeted approach can bridge the gap between more and less developed tribal communities, allowing for faster progress for the most vulnerable populations.
2. Geographical remoteness
Tribal communities residing in remote areas often face challenges with infrastructure and access to basic services. Increased funding for these communities can address these issues by supporting road construction, healthcare facilities closer to home, and educational institutions. Improved accessibility paves the way for better living standards and economic opportunities. By focusing resources on geographically remote areas, the grant can help integrate these communities into the mainstream and unlock their full potential.
3. Land alienation and livelihood loss
Loss of traditional lands due to development projects can severely impact tribal communities. Grant allocation that considers this factor can fund livelihood diversification programs, skill development initiatives, and alternative income generation opportunities. This helps these communities adapt and thrive in the changing environment. By addressing land alienation and its consequences, the grant can empower these communities to rebuild their economic base and achieve long-term sustainability.
4. Environmental degradation
Tribal communities in Kerala often reside in ecologically sensitive areas and possess deep knowledge of sustainable resource management. Providing additional grants based on the environmental challenges they face can support these practices. Funding can go towards initiatives like forest conservation, combating soil erosion, and promoting renewable energy sources. This empowers them to protect their environment while creating income opportunities through eco-tourism or responsible harvesting of natural resources. By fostering environmental stewardship, the grant can contribute to a healthier ecosystem for both the communities and Kerala as a whole.
5. Preservation of indigenous culture
Tribal cultures are rich repositories of traditional knowledge and practices, often closely linked to the environment. Increased funding can support initiatives that document and preserve these cultural aspects. This includes supporting language revitalisation programs, promoting traditional arts and crafts, and fostering

cultural exchange. Preserving their heritage strengthens their identity and fosters a sense of pride within the communities. By valuing and supporting their cultural traditions, the grant can contribute to a more inclusive and diverse Kerala.

6. Need-based allocation

Allocating funds based on specific needs identified within tribal communities ensures that resources are directed towards those who require them the most. This can address critical issues like healthcare, education, and infrastructure development in the most underserved areas. This targeted approach ensures that Kerala's tribal communities with the most pressing needs receive the financial support required to bridge development gaps and improve their quality of life.

7. State initiatives and resource constraints

States play a crucial role in tribal development by undertaking various initiatives. However, the ability to allocate resources can be limited by budgetary constraints. Recognising these limitations through a transparent mechanism can help determine the level of central government support required. Hence the budgetary constraints of the state may be considered as a new criterion to enhance the grants-in-aid.

Five arguments for enhanced grants-in-aid

Grants-in-aid provide essential funding for crucial services, yet their impact can be limited by resource constraints. To ensure these assistances reach their full potential for the speedy tribal development in Kerala, here illustrates five compelling reasons why enhanced grants-in-aid are necessary to Kerala

1. To end the relative deprivation of tribals in development

This table analyses the gap between social indicators of tribal communities in Kerala compared to the state average. The data covers three key indicators: literacy rate, infant mortality rate, and maternal mortality ratio.

Sl. No	Indicator	ST Kerala	All Kerala	Gap (%)
1	Literacy rate	74.44	94	-19.56
2	Infant Mortality Rate	9	6	-50
3	Maternal Mortality Ratio	24	19	-26.32

Source: Economic Review, 2023

The literacy rate among Tribals in Kerala (74.44%) lags behind the state average (94%) by a significant margin of 19.56%. This indicates a need for focused interventions to improve educational attainment within tribal communities. Additionally, the Tribals in Kerala have a lower IMR (9) compared to the state average (6). This translates to a 50% gap, suggesting better child health outcomes in tribal communities. The MMR for Tribals in Kerala (24) is higher than the state average (19), indicating a gap of -26.32%. However, it's important to note that a negative gap in this case signifies a positive trend, where tribal communities have a lower maternal mortality rate compared to the state average.

The data presents the picture of social development among Tribals in Kerala. This highlights the need for targeted policies and programs to address the educational gap and further improve healthcare access for mothers and children within tribal communities.

2. To attain the goals of Vikasit Bharat 2047

India's vision, 'Vikasit Bharat 2047', aims to transform the nation into a developed economy by its 100th year of independence. This ambitious plan focuses on areas like digital payments, high-speed transportation, and fostering innovation. The government is creating long-term financial plans to achieve this goal, and youth engagement is a key part of the strategy. By 2047, India hopes to be a global leader with a strong economy and improved social well-being for all.

Achieving Vikasit Bharat 2047 requires significant progress in social indicators for tribal communities in general and Kerala in particular. Let's examine some of the social indicators such as literacy, IMR and MMR of what they might need to achieve as shown in Table 3.

Sl. No	Indicator	ST Kerala	All Kerala	All India	Vikasit Bharat*
1	Literacy rate (per cent)	74.44	94	73	100
2	Infant Mortality Rate	9	6	28	2-3
3	Maternal Mortality Ratio	24	19	97	10-13

Source: Economic Review, 2023
 *Expectation on the basis of the levels achieved by various developed countries

1. Literacy rate: India doesn't have an official target literacy rate for 2047, but achieving 100% literacy is a national objective. Considering the current gap of 19.56%, Kerala Tribals would need a literacy rate of at least 94% to match the state average. To truly contribute to Vikasit Bharat, aiming for 100% literacy would be ideal.
2. Infant Mortality Rate (IMR): The current national target for IMR by 2024 is 24. For Vikasit Bharat 2047, this target is likely to be further reduced to 2 or 3. Kerala Tribals already have a lower IMR (9) compared to the national target. However, for Vikasit Bharat, they could aim for a further reduction, perhaps reaching a target which is closer to sero-digit IMR of 2 or 3.
3. Maternal Mortality Ratio (MMR): India aims to achieve a maternal mortality ratio of below 11.9 by 2030. Vikasit Bharat would likely target an even lower MMR, may be below 15. Kerala Tribals already have a lower MMR compared to the current national rate. To contribute to Vikasit Bharat, they could strive for an MMR closer to the envisioned national goal for 2047, perhaps reaching a target as low as 10-13.

While these national goals provide a framework, Kerala's tribal communities might have specific needs. Policies should ensure equitable access to all development spheres such as education, healthcare and employment, addressing any geographical or social barriers

within these communities. Moreover, the development must go beyond these indicators. Focus on factors like income generation, sanitation, and social inclusion to create a well-rounded development strategy for Kerala's tribal communities which requires additional funding.

3. To meet the infrastructure deficiency

The table 4 analyses the infrastructure status of tribal settlements in Kerala based on data from the Scheduled Tribes Development Department (2013). The findings highlight significant disparities in major indicators such as accessibility, education, health care, services, drinking water and electricity in access to basic amenities and services across these settlements.

1. **Accessibility:** A major concern is the lack of proper connectivity. Over a quarter (1225) of settlements rely solely on footpaths, while 366 have no connectivity at all. Additionally, settlements with motorable roads often lack culverts (145), hindering smooth transportation during monsoons.
2. **Education:** A substantial number of settlements lack educational institutions within a 5-kilometer radius. High schools are particularly scarce, with over half (2197) beyond this distance. This poses challenges for higher education opportunities.
3. **Healthcare:** Accessibility to healthcare services is limited. A significant portion of settlements lack a health sub-center (1451) or a primary health center (2139) within 5 kilometers. Even private clinics and doctors are scarce, with over two-thirds (2672) beyond this range.
4. **Other Services:** Essential services like village offices (1994), police stations (3344), veterinary dispensaries (2362), Krishi Bhavan agricultural offices (2788), and electricity section offices (3475) are also largely inaccessible within a 5-kilometer radius for many settlements. This limits access to administrative support, public safety measures, veterinary care, agricultural support, and electricity infrastructure.
5. **Drinking Water:** While a small portion (473) has access to water within settlements, a significant number (2688) rely on sources beyond 0.5 kilometers. This can create challenges, especially during the dry season.
6. **Electricity:** Although most settlements have electricity (3477), a substantial number (1285) lack it entirely. Even in electrified settlements, many (2495) experience voltage instability and power supply interruptions. Additionally, over half (580) lack street lights.

Table 4. Infrastructure status of tribal settlements in Kerala		
Sl. No	Indicators	
1	Total settlements	4762
2	PVTG settlements	551
Accessibility		
3	Settlements with only foot paths / foot steps	1225
4	Settlements with road connectivity without culvert	145
5	Settlements with no connectivity	366
6	Settlements with access through boat	15
7	High school beyond 5 KM	2197
8	U P School beyond 5 KM	1301
9	L P School beyond 5 KM	576
10	Health sub centre beyond 5 KM	1451
11	Private clinic/ doctor beyond 5 KM	2672
12	Medical store beyond 5 KM	2464
13	Market beyond 5 KM	2004
14	Rading room / library beyond 5 KM	1402
15	Primary Health centre beyond 5 KM	2139
16	Community Health Centre beyond 5 KM	3150
17	Village Office beyond 5 KM	1994
18	Police station beyond 5 KM	3344
19	Veterinary dispensary beyond 5 KM	2362
20	Krishi Bhavan beyond 5 KM	2788
21	Electricity section office beyond 5 KM	3475
22	Water Authority Section Office beyond 5 KM	3955
23	Akshaya / Common Service Centre	2078
Drinking water		
24	Within settlement	473
25	Within 0.5 KM	2390
26	Beyond 0.5 KM	2688
Electricity		
27	Unelectrified settlements	1285
28	Unelectrified settlements without solar light	1033
29	Electrified without street lights	580
30	Electrified but voltage instability and interruption in power supply	2495
<i>Source: Report on socio economic status of tribals in Kerala, Scheduled Tribes Development Department, Government of Kerala, 2013</i>		

The data reveals a concerning lack of basic infrastructure in many tribal settlements across Kerala. Limited accessibility, coupled with inadequate healthcare facilities, educational institutions, and essential services, creates significant challenges for these communities. The lack of reliable electricity and clean drinking water further compounds these issues. To redress the issues of lack of basic amenities requires additional funding.

4. To maintain existing achievements

Table 5 presents a complex picture of tribal development in Kerala compared to All India.

Sl. No	Indicator	All India	Kerala ST	Gap
1	Literacy rate (ST)	59	75.8	+16.8
2	Poverty Rural (ST)	45.3	41	-4.3
3	Health sub centres required	144	831	+687
4	PHC Required	21	137	+116
5	CHC Required	5	12	+7
6	Health workers required	968	970	+2
7	Nursing staff required	221	245	+24
8	Doctors at PHC	137	229	+92

Source: Ministry of Tribal Affairs, Government of India

The table reveals the following in terms of literacy, poverty reduction, health care infrastructure.

1. Literacy Rate: Kerala's ST population has a literacy rate (75.8%) exceeding the national average for ST communities (59%) by a significant margin (16.8%). This indicates Kerala's success in educational attainment for its tribal population.
2. Poverty Reduction: Kerala's ST population experiences lower rural poverty (41%) compared to the national average for ST communities (45.3%). This suggests Kerala's efforts in poverty alleviation are yielding positive results.
3. Human Resource Availability: Kerala has a surplus of health workers (doctors, nurses) compared to the national requirement for ST communities. This indicates a potential strength in healthcare staffing for Kerala's tribal population.
4. Kerala has additional 687 Health Sub-Centres in tribal areas more than the national requirement. Not only that Kerala has an additional 116 Primary Health Centres (PHC) and 7 Community Health Centres (CHC) in tribal areas more than the national requirement.

Kerala's achievements in literacy rate and poverty reduction are commendable. However, these achievements indicate the need for continued investment which requires additional funding for the sustainability of tribal development.

5. A Robust Institutional Framework for Tribal Development

Kerala boasts a well-organised institutional network, ranging from the state level to the grassroots level of Ooru (tribal settlement), dedicated to tribal development. The Scheduled Tribes Development Department, as the nodal agency, oversees and coordinates all tribal development initiatives. This department is supported by a network of District Tribal Development Officers, Integrated Tribal Development Project Offices, Tribal Development Offices and Tribal Extension Offices. Additionally, local self-government institutions, such as Gram Panchayats and Block Panchayats, play a crucial role in planning and implementing tribal development programs at the local level. Tribal

promoters and ASHA workers, who are deeply embedded within tribal communities, serve as vital links between the government and the people, facilitating effective program delivery and monitoring. This robust institutional framework empowers Kerala to effectively implement and monitor tribal development schemes, ensuring maximum impact and accountability.

Activities to be taken for the Speedy Development of Tribals in Kerala

In order to bridge the development gap between tribals and non-tribals in Kerala by 2047 the following activities need to be completed within a short span of time. Some major areas with estimated budget for five years are given below and the activities to be implemented in each area are given as Annexure A.

Important sectors and estimated grants-in-aid required			
Sl. No	Sectors	Priority	Estimated grants-in-aid required (crore)
1	Education and Skill Development	High	500
2	Employment and livelihood	High	500
3	Health	High	300
4	Accessibility and infrastructure	Very High	800
5	Housing, Drinking water, Electricity and sanitation	High	400
	Total		2500

Investing in Kerala's Tribals: A Catalyst for Long-Term Prosperity

Securing a substantial increase in grant-in-aid under Article 275(1) for Kerala's tribal communities presents a transformative opportunity, not just for immediate improvements, but for the creation of long-term benefits that ripple outwards, fostering a more equitable and prosperous Kerala for all. By empowering tribal communities, we unlock a cascade of positive outcomes impacting health, education, economic security, and overall well-being.

Firstly, a significant portion of the increased grant-in-aid can be channelled towards initiatives that increase literacy rates amongst tribals. An educated tribal population will not only contribute to Kerala's overall economic development but will also become powerful advocates for their own communities, ensuring the sustainability of positive change.

Secondly, increased funding will enable targeted healthcare interventions, leading to demonstrably improved health outcomes for Kerala's tribals. These investments will not only improve the quality of life for tribal communities but also break the cycle of poverty perpetuated by ill health.

Thirdly, with enhanced grant-in-aid, Kerala can implement targeted livelihood development programs that equip tribal communities with the skills and resources needed to achieve economic security. This economic empowerment will not only elevate the living standards of tribal communities but also contribute to Kerala's overall economic growth. Finally, a crucial long-term benefit of increased grant-in-aid lies in the overall empowerment of Kerala's tribal communities. This overall empowerment will ensure that Kerala's tribals are not just beneficiaries of development programs, but active participants in shaping their own future and the future of Kerala as a whole and fulfil the broad vision of Vikasit Bharat 2047.

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Annexure A

Activities and the requirement of grants-in-aid to be taken for the Speedy Development of Tribals in Kerala

In order to bridge the development gap between tribals and non-tribals in Kerala by 2047 the following activities need to be completed within a short span of time. Some major areas and activities with estimated budget for five years are given below.

1. Education and Skilling 500 Crore

1. Two Poly-technique Institutions providing Diploma Courses: 20 Crore

One of the main issues faced by tribal youth is unemployment. People often go to conventional courses and are kept away from the labour market due to lack of skill. Industrial Training Centres and Poly Technique institutes are best skilling centres but have limited seats in the state. To cater to the excess demand of youth we request fund to establish 2 modern Poly Technique/ITI Institutions offering diploma course of the future like Data Science, AI etc. The estimated cost for establishing Two Poly technique Institutions one in Malabar Region and another in Travancore Region is ₹10 Cr each

2. One Finishing School at the Capital of the State 50 Crore

The students who completed graduation and post-graduation is very often alienated by the labour market due to lack of intensive and practical knowledge in the field of study as well as soft skill training. This centre will act as finishing schools providing 6 month or one-year residential course and make students confident and fit for the labour market.

3. Business Incubation Centre at Kochi, the Business Hub of Kerala 30 Crore

Establishing Business Incubation Centres in Kochi, the commercial hub of Kerala, can significantly empower tribal entrepreneurs. By providing a supportive ecosystem of mentorship, training, and funding, these centres can help tribal innovators transform their ideas into successful ventures. This initiative will not only create employment opportunities within tribal communities but also contribute to the economic growth of the state as a whole.

4. Language and Cultural Preservation Centre 50 Crore

Establishing a Language and Cultural Preservation Centre is crucial for safeguarding the rich linguistic and cultural heritage of Kerala's tribal communities. By documenting, preserving, and promoting tribal languages, oral traditions, and art forms, this centre will help revitalise and sustain these invaluable aspects of tribal identity. This initiative will not only contribute to the preservation of our cultural diversity but also empower tribal communities to reclaim their heritage and strengthen their sense of belonging.

5. Establishing community libraries 50 Crore

Establishing 50 community libraries (One crore for each) in tribal areas is essential for promoting literacy and knowledge sharing. By providing access to books, magazines, and other educational materials, these libraries can inspire and educate tribal communities. These spaces can foster a love for reading, encourage critical thinking, and empower individuals to pursue their aspirations. Community libraries can also serve as hubs for cultural activities, promoting the preservation of tribal traditions and languages.

6. Bridge courses for dropped-out tribal students 50 Crore

Offering bridge courses for dropped-out tribal students can provide a second chance to complete their education. These courses can be tailored to their specific needs, offering flexible learning options and remedial support. By providing quality education and skill training, these programmes can help tribal students re-enter the mainstream education system and acquire the necessary skills to secure employment opportunities. More than 25000 students are estimated as beneficiaries of this programme

7. Tribal STEM Education Programmes 75 Crore

Launching Tribal STEM Education Programmes can inspire and empower tribal students to pursue careers in science, technology, engineering, and mathematics. By providing hands-on learning experiences, mentorship, and exposure to STEM professionals, these programmes can ignite curiosity and develop critical thinking skills. These initiatives can help bridge the gap between tribal communities and the mainstream scientific community, fostering innovation and economic growth.

8. Skill training in eco-tourism and hospitality 25 Crore

Skill training in eco-tourism and hospitality can empower tribal communities to capitalise on their rich natural and cultural heritage. By equipping tribal youth with skills in guiding, hospitality, and sustainable tourism practices, these programmes can create employment opportunities and generate income for local communities. This initiative can promote responsible tourism, conserve the environment, and uplift the socio-economic status of tribal people.

9. Sports and physical training academies 50 Crore

Establishing two sports and physical training academies (25 Crore each) can empower tribal youth by providing them with opportunities to excel in sports and physical fitness. These academies can nurture talent, promote healthy lifestyles, and instil discipline and teamwork. By providing access to quality coaching, training facilities, and competitive platforms, these initiatives can help tribal athletes achieve their full potential and represent their communities on national and international stages.

10. Skill training in renewable energy sectors 25 Crore

Skill training in renewable energy sectors can empower tribal communities to harness their abundant natural resources and contribute to sustainable development. By equipping tribal youth with skills in solar energy, wind energy, and bioenergy technologies, these programmes can create green jobs and promote energy independence. This initiative can help reduce poverty, improve livelihoods, and protect the environment, ensuring a sustainable future for tribal communities. Expected beneficiaries are 5000 tribal youth.

11. Scholarship and mentorship programmes 25 Crore

Scholarship and mentorship programmes can significantly empower tribal communities by nurturing aspiring educators. By providing financial support and guidance, these programmes can encourage talented tribal students to pursue careers in education. These initiatives can help address the shortage of qualified teachers in tribal areas, improve the quality of education, and inspire future generations of tribal leaders. Expected beneficiaries are 1000 tribal youth.

12. Establishing Tribal Career Guidance and Counselling Centres 50 Crore

Establishing Tribal Career Guidance and Counselling Centres is crucial for empowering tribal youth to make informed decisions about their future. By providing expert guidance, counselling, and information on various career paths, these centres can help tribal students navigate the complexities of higher education and employment opportunities. This initiative can bridge the gap between tribal communities and the mainstream job market, enabling tribal youth to realise their full potential and contribute to society.

2. Employment and livelihood 500 Crore

1. Rejuvenating cooperative societies 50 Crore

Rejuvenating cooperative societies can empower tribal communities by providing them with a platform for collective economic activities. By strengthening these cooperatives, tribal members can access credit, markets, and resources, thereby improving their livelihoods. These societies can promote sustainable agriculture, agro-processing, and other income-generating activities, leading to economic growth and social empowerment within tribal communities.

2. Community-Based Eco-Tourism Initiatives 50 Crore

Community-based eco-tourism can empower tribal communities by generating sustainable income from their natural and cultural resources. By developing eco-friendly tourism products and services, tribal communities can benefit from increased tourism revenue, job creation, and improved infrastructure. This initiative can promote cultural exchange, environmental conservation, and community empowerment.

3. Establishing Tribal Handicrafts Collectives 25 Crore

Establishing tribal handicrafts collectives can provide a platform for tribal artisans to market their products, improve their skills, and earn a sustainable livelihood. By supporting these collectives, the government can help preserve traditional crafts, promote fair trade practices, and create economic opportunities for tribal communities.

4. Forest-Based Enterprises for Non-Timber Forest Products (NTFPs) 25 Crore

Forest-based enterprises for NTFPs can empower tribal communities to sustainably utilise forest resources and generate income. By promoting the collection, processing, and marketing of NTFPs, such as medicinal plants, honey, and bamboo, these initiatives can create employment opportunities, conserve biodiversity, and improve the livelihoods of tribal people.

5. Livestock Rearing and Poultry Farming Programmes 25 Crore

Livestock rearing and poultry farming programmes can enhance food security and generate income for tribal communities. By providing training, inputs, and market linkages, these programmes can help tribal families diversify their livelihoods and improve their nutritional status.

6. Rural BPO (business process outsourcing centres) and IT Hubs 50 Crore

Rural BPOs and IT hubs can create high-quality employment opportunities for tribal youth in technology-driven sectors. By providing training, infrastructure, and connectivity, these initiatives can bridge the digital divide and empower tribal communities to participate in the global economy.

7. Mobile Veterinary Services 50 Crore

Mobile veterinary services can improve the health and productivity of livestock in tribal areas. By providing timely veterinary care, these services can help prevent diseases, reduce mortality rates, and increase milk and meat production.

8. Handmade Eco-Friendly Product Enterprises 25 Crore

Handmade eco-friendly product enterprises can empower tribal women to generate income and promote sustainable livelihoods. By supporting the production and marketing of eco-friendly products, such as handmade paper, natural dyes, and organic cosmetics, these initiatives can create employment opportunities for women and preserve traditional skills.

9. Forest Resource Protection and Patrolling Jobs 25 Crore

Forest resource protection and patrolling jobs can empower tribal communities to safeguard their forests and natural resources. By involving tribal communities in forest conservation efforts, these initiatives can promote sustainable forest management, protect biodiversity, and generate income for local people.

10. Mobile Market Units for Local Produce 25 Crore

Mobile market units can provide a platform for tribal farmers and artisans to sell their products directly to consumers. By reducing transportation costs and market intermediaries, these units can help tribal producers earn better prices and improve their livelihoods.

11. Entrepreneurship Support and Microfinancing for Startups 50 Crore

Entrepreneurship support and microfinancing can empower tribal entrepreneurs to start and grow their businesses. By providing training, mentorship, and access to finance, these initiatives can foster innovation, create jobs, and stimulate economic growth in tribal areas.

12. Medicinal Plant Cultivation and Processing Units 50 Crore

Medicinal plant cultivation and processing units can empower tribal communities to harness the value of their medicinal plant resources. By promoting the cultivation, harvesting, and processing of medicinal plants, these initiatives can create employment opportunities, generate income, and preserve traditional knowledge.

13. Beekeeping and Honey Processing Units 25 Crore

Beekeeping and honey processing units can empower tribal communities to diversify their livelihoods and generate income from non-timber forest products. By promoting beekeeping and honey production, these initiatives can contribute to pollination services, improve soil health, and create employment opportunities for tribal people.

14. Animal Husbandry Extension Services 15 Crore

Animal husbandry extension services can significantly improve the livelihoods of tribal communities. By providing training, technical support, and access to quality livestock breeds, these services can enhance milk and meat production, increase income, and improve nutritional security. Additionally, these services can promote sustainable livestock practices and protect animal health.

15. Cultural Performance and Event Management Teams 10 Crore

Cultural performance and event management teams can empower tribal communities to showcase their rich cultural heritage and generate income. By organising cultural performances, festivals, and workshops, these teams can

promote cultural tourism, create employment opportunities, and strengthen community bonds. These initiatives can also help preserve traditional arts, music, and dance forms.

3. Health 300 Crore

1. Mobile Health Clinics 50 Crore

Mobile health clinics can provide accessible and affordable healthcare services to remote tribal communities. By bringing healthcare services to their doorsteps, these clinics can help reduce mortality rates, improve maternal and child health, and prevent the spread of infectious diseases.

2. Tribal Health Worker Training Program 10 Crore

Training tribal health workers can strengthen the healthcare system in tribal areas. By equipping tribal individuals with the necessary skills and knowledge, these programmes can improve the quality of healthcare services, increase health awareness, and facilitate early diagnosis and treatment of diseases.

3. Telemedicine Centres 20 Crore

Telemedicine centres (4 centres, 5 crore each) can connect tribal communities with specialised healthcare providers. By leveraging technology, these centres can provide remote consultations, diagnosis, and treatment, reducing the need for long-distance travel and improving access to quality healthcare.

4. Maternal and Child Health Programmes 5 Crore

Maternal and child health programmes are crucial for ensuring the well-being of tribal women and children. By providing antenatal care, immunisation, and postnatal care, these programmes can reduce infant and maternal mortality rates, improve child health, and promote healthy childhood development.

5. Mental Health Awareness and Counselling Centres 25 Crore

Mental health awareness and counselling centres can address the mental health needs of tribal communities. By providing counselling services, therapy, and support groups, these centres can help individuals cope with stress, anxiety, and depression, and promote mental well-being.

6. Traditional Medicine and Indigenous Health Practices Centres 50 Crore

Five centres (10 crore each) for traditional medicine and indigenous health practices can promote the use of traditional knowledge and herbal remedies. By integrating traditional medicine with modern healthcare, this centre can provide holistic healthcare solutions and reduce reliance on synthetic drugs.

7. Specialised Clinics for Chronic Diseases 25 Crore
- Specialised clinics for chronic diseases can provide comprehensive care for individuals with diabetes, hypertension, and other chronic conditions. By offering early diagnosis, treatment, and lifestyle counselling, these clinics can help manage chronic diseases, improve quality of life, and reduce disease-related complications.
8. Health Insurance Coverage Schemes 25 Crore
- Health insurance coverage schemes can protect tribal families from financial hardship due to medical expenses. By providing financial security, these schemes can encourage people to seek timely medical care and improve access to quality healthcare services.
9. Alcohol and Substance Abuse Rehabilitation Centres 40 Crore
- Alcohol and substance abuse rehabilitation centres can help individuals overcome addiction and lead healthy lives. By providing counselling, therapy, and rehabilitation services, these centres can address the issue of substance abuse, which is prevalent in many tribal communities.
10. Home-Based Palliative Care Services 25 Crore
- Home-based palliative care services can provide compassionate care for terminally ill patients in their homes. By offering pain relief, symptom management, and emotional support, these services can improve the quality of life for patients and their families.
11. Outreach Programmes for Elderly Care 25 Crore
- Outreach programmes for elderly care can provide essential services and support to the elderly population in tribal communities. By offering healthcare services, social support, and nutritional assistance, these programmes can improve the well-being of older adults and enhance their quality of life.
- 4. Connectivity and Infrastructure 800 Crore**
1. All-Weather Roads to Remote Settlements 350 Crore
- All-weather roads can connect remote tribal settlements to urban areas, improving accessibility and facilitating the movement of goods and people. These roads can boost economic activities, improve access to education and healthcare, and reduce social isolation.
2. Bridges and Footpaths in Hilly Areas 100 Crore

Bridges and footpaths can enhance connectivity in hilly and mountainous regions, especially during the monsoon season. These infrastructure projects can improve access to markets, schools, and healthcare facilities, and promote tourism in these areas.

3. Solar-Powered Street Lighting 100 Crore

Solar-powered Street lighting can illuminate tribal settlements, improving safety and security. These lights can reduce accidents, deter crime, and enhance the overall quality of life for tribal communities.

4. Digital Connectivity and Internet Access Centres 50 Crore

Digital connectivity and internet access centres can bridge the digital divide and empower tribal communities. These initiatives can facilitate online education, telemedicine, e-commerce, and digital governance, promoting economic growth and social development.

5. Community-Based Power Generation Projects 50 Crore

Community-based power generation projects, such as small hydro power plants and solar power systems, can provide reliable and affordable electricity to tribal communities. These projects can empower communities, reduce dependence on fossil fuels, and promote sustainable development.

6. Construction of Multipurpose Community Centres 75 Crore

Multipurpose community centres can serve as hubs for various activities, including education, healthcare, cultural events, and community gatherings. These centres can promote social cohesion, improve access to services, and strengthen community resilience.

7. Waterway Transport Services in Riverine Areas 25 Crore

Waterway transport services can provide an efficient and cost-effective mode of transportation in riverine areas. These services can facilitate the movement of goods and people, reduce transportation costs, and promote economic development.

8. Emergency Response and Rescue Infrastructure 50 Crore

Emergency response and rescue infrastructure, such as fire stations, ambulance services, and disaster relief centres, can help protect tribal communities from natural disasters and other emergencies. These facilities can save lives, minimise damage, and promote resilience.

5. Housing, Drinking water, Sanitation and Electricity **400 Crore**

1. Community Housing Renovation Program 100 Crore

A community housing renovation program can improve the living conditions of tribal households. By providing financial assistance and technical support, this program can help repair and upgrade existing homes, making them safer, healthier, and more comfortable.

2. Disaster-Resilient Housing Construction 50 Crore

Disaster-resilient housing construction can protect tribal communities from natural disasters. By building houses that can withstand earthquakes, floods, and other natural hazards, these projects can save lives, reduce property damage, and promote long-term resilience.

3. Rainwater Harvesting Systems for Households 50 Crore

Rainwater harvesting systems can help conserve water and reduce dependence on groundwater. By collecting and storing rainwater, these systems can provide water for domestic use, irrigation, and other purposes, especially during dry periods.

4. Community Water Treatment Plants 10 Crore

Community water treatment plants can provide safe and clean drinking water to tribal communities. By treating water from various sources, these plants can remove contaminants and improve public health.

5. Solar-Powered Bore Wells 10 Crore

Solar-powered bore wells can provide reliable and sustainable access to groundwater. By using solar energy to power water pumps, these systems can reduce energy costs and environmental impact.

6. Pipeline Water Supply System 50 Crore

A pipeline water supply system can ensure a regular and reliable supply of water to tribal households. By providing piped water connections, this system can improve sanitation, hygiene, and overall health.

7. Household Toilet Scheme 30 Crore

A household toilet scheme can promote sanitation and hygiene in tribal communities. By providing financial assistance and technical support, this scheme can encourage the construction of toilets, reducing open defecation and preventing the spread of diseases.

8. Solid Waste Management System 25 Crore

A solid waste management system can help maintain a clean and healthy environment in tribal areas. By providing waste collection, segregation, and disposal services, this system can reduce pollution and improve public health.

9. Composting and Bio-Waste Processing Units 25 Crore

Composting and bio-waste processing units can reduce waste and produce valuable organic fertiliser. By converting organic waste into compost, these units can improve soil fertility and reduce the need for chemical fertilisers.

10. Women-Centric Sanitation Initiatives 25 Crore

Women-centric sanitation initiatives can empower women and improve their health and dignity. By providing access to clean and safe sanitation facilities, menstrual hygiene products, and awareness programmes, these initiatives can promote gender equality and improve public health.

11. Solar Power for Homes and Community Centres 25 Crore

Solar power for homes and community centres can provide clean and affordable energy to tribal communities. By installing solar panels, these initiatives can reduce reliance on fossil fuels, lower energy costs, and promote sustainable development.

10

Kerala's Elevated Infrastructure Costs: Need for Enhanced Grant-in-Aid¹⁸

Abstract

The elevated infrastructure costs in Kerala pose a significant challenge to the state's development trajectory. The unique geographical, climatic, and socio-economic conditions necessitate higher investments in infrastructure compared to other parts of the country. Without adequate financial support, Kerala's ability to bridge the infrastructure gap, create employment opportunities, enhance economic competitiveness, and improve the overall quality of life for its citizens will be severely constrained. Therefore, an enhanced grant-in-aid is imperative to address the state's infrastructure challenges and ensure its equitable development. By providing additional financial resources, the Finance Commission can play a pivotal role in enabling Kerala to overcome these hurdles and realise its full potential. The state earnestly requests the Finance Commission to recognise the unique circumstances faced by Kerala and accord it an additional financial support which is incurred over and above the national average cost to invest in critical infrastructure projects.

Introduction

Kerala, a southern Indian state, is renowned for its lush greenery, high literacy rate, and social development indices. Geographically, the state is characterised by its strange terrain, interspersed with coastal plains and Western Ghats. This unique topography, coupled with a high population density, poses significant challenges in infrastructure development. Economically, Kerala has traditionally relied on agriculture and remittances from its diaspora. While the state has achieved substantial progress in human development, its infrastructure sector, particularly transportation and urban development, faces substantial constraints due to the aforementioned geographical and socio-economic factors.

Despite facing resource constraints, Kerala has made substantial contributions to India's social and economic development. The state has consistently outperformed national

¹⁸ Prepared by Dr Akhil M P, Assistant Professor, GIFT and Dr Geetha Rani V, Assistant Professor, GIFT.

averages in key human development indicators such as literacy, life expectancy, and infant mortality rate. Kerala's pioneering social welfare schemes have served as a model for the nation. Moreover, the state has been a significant contributor to the national exchequer through various taxes and duties. Its strategic geographical location and skilled workforce have also made it a vital hub for trade, tourism, and information technology. However, the state's development trajectory has been hindered by infrastructure bottlenecks, which have amplified the need for additional financial resources.

Kerala, despite its significant contributions to the nation's social and economic development, faces a formidable challenge in infrastructure development due to disproportionately high construction costs. Unlike other Indian states, Kerala's unique geographical, demographic, and economic conditions necessitate substantial additional investments for creating comparable infrastructure. This input underscores the imperative need for enhanced grant-in-aid to address this disparity and enable Kerala to bridge the infrastructure gap. The primary objective is to address the acute disparity in infrastructure development costs faced by the state compared to the national average. The elevated expenses incurred in constructing roads, bridges, buildings, and other essential infrastructure have significantly hinder Kerala's progress. By securing additional financial resources, the state aims to bridge this infrastructure gap, accelerate development, and ensure equitable growth in line with the nation's aspirations.

Comparative Analysis of Infrastructure Cost factors

A comparative analysis of infrastructure cost factors in Kerala reveals a stark disparity when contrasting with the national factors.

Factor	Impact on Cost
Topography	Increased costs due to challenging terrain
Population Density	Amplified infrastructure needs
Land Acquisition	High land prices
Labor Costs	Highest in India (Rs. 852)
Environmental Regulations	Eco-sensitive zones complicate projects
Natural Disasters	Need for disaster-resilient infrastructure

The construction of roads, a fundamental component of infrastructure, is significantly more expensive in Kerala. Similarly, the construction of bridges, an essential element of connectivity, also exhibits a marked cost differential. The elevated costs can be attributed to challenges posed by geographical conditions, the need for specialised engineering, and the procurement of high-quality materials. In the realm of building construction, Kerala also faces elevated costs. This discrepancy can be attributed to factors such as higher labour costs, the use of premium building materials, and stringent building codes to withstand Kerala's climatic conditions.

It is imperative to highlight that these are representative figures and variations may exist within different regions of the state and the country. Nevertheless, the overall trend indicates a consistent pattern of significantly higher infrastructure costs in Kerala compared to the national average.

Factors contributing to the cost differential

Kerala faces several challenges in infrastructure funding, leading to cost disadvantages. The prominent challenges include topography, high population density, labour costs, environmental rules, restricted fiscal space, natural disasters, etc.

1. Topography

Kerala is a tiny strip of land (38,852 sq.km, 21st largest state in India by area) between the Arabian Sea and the Western Ghats. This tight strip presents major obstacles for large-scale infrastructure initiatives. Kerala's land structure can be categorised into three groups: high land (48%), mid land (42%), and low land (10%), with the high land proportion being larger (Envis Centre, Ministry of Environment & Forest, Govt. of India). This raises the price of building and maintenance cost. Kerala's unique geographical features significantly contribute to the elevated costs of infrastructure development. The state's undulating terrain, characterised by hills, valleys, and rivers, presents formidable challenges for construction activities.

A substantial portion of Kerala is covered by hilly terrain, necessitating extensive earthwork, tunnelling, and bridge construction. The construction of roads and railways in these areas is time-consuming and expensive due to the complex topography. The coastal regions, while offering economic opportunities, also pose infrastructure challenges. The risk of erosion, cyclones, and saltwater intrusion necessitates robust and resilient infrastructure, increasing construction costs. Kerala's extensive river network requires the construction of numerous bridges and culverts, adding to infrastructure expenses. The frequent occurrence of floods and landslides further exacerbates the situation. The state's susceptibility to landslides and other geo-hazards necessitates additional measures for slope stabilisation and disaster mitigation, increasing project costs. These topographical factors significantly impact the design, construction, and maintenance of infrastructure projects in Kerala, resulting in higher overall costs compared to states with relatively flat terrains.

2. High Population Density

Kerala's high population density is another critical factor contributing to elevated infrastructure costs. The state's limited land area coupled with a large population exerts significant pressure on infrastructure resources. Purchasing land for infrastructure projects is challenging and costly in areas with a high population density (Table 2). The land cost in Kerala is relatively high because of high population density. Higher expenses and longer project schedules result from this. The scarcity of available land due to high population density drives up land acquisition costs for infrastructure projects. This is particularly evident in urban areas where land prices are exorbitant. Procuring right of way for roads, railways, and other infrastructure projects becomes complex and time-consuming due to the dense population. This leads to delays and cost escalations.

Table 2. State-wise density of population		
Sl.No	State/UT	Density
1	Bihar	1106
2	West Bengal	1028
3	Kerala	860
4	Uttar Pradesh	829
5	Haryana	573
6	Tamil Nadu	555
7	Punjab	551
8	Jharkhand	414
9	Assam	398
10	Goa	394
11	Maharashtra	365
12	Tripura	350
13	Karnataka	319
14	Andhra Pradesh	308
15	Gujarat	308
16	Odisha	270
17	Madhya Pradesh	236
18	Rajasthan	200
19	Chhattisgarh	189
20	Uttarakhand	189
21	Meghalaya	132
22	Jammu & Kashmir	124
23	Himachal Pradesh	123
24	Nagaland	119
25	Manipur	115
26	Sikkim	86
27	Mizoram	52
28	Arunachal Pradesh	17
	ALL INDIA	382

Source: RBI Handbook of Statistics on Indian States

The high population density results in congested roads, overburdened public transportation systems, and inadequate infrastructure facilities. Addressing these issues requires substantial investments and ongoing maintenance. The concentration of population in specific areas increases the potential environmental impact of infrastructure projects. Mitigation measures and environmental clearances add to project costs. The high population density necessitates a robust social infrastructure, including schools, hospitals, and other public facilities, which further strains public resources. Consequently, Kerala's high population density amplifies the challenges of infrastructure development, leading to increased costs and reduced efficiency.

3. Labour Costs

Kerala's labour market dynamics significantly influence infrastructure costs. Higher labour costs in Kerala, driven by strong labour unions and better wages compared other

Indian states (Table 3), contribute to the overall higher cost of infrastructure projects. The state average wage per day is more than twice compared to the national level average wage per day.

Sl. No	State/Union Territory	Per day wage (2022-23)
1	Kerala	852.5
2	Jammu & Kashmir	534.5
3	Tamil Nadu	500.9
4	Himachal Pradesh	488.3
5	Andhra Pradesh	482.4
6	Haryana	461.0
7	Karnataka	431.0
8	Punjab	400.9
9	Rajasthan	393.7
10	Meghalaya	372.2
11	Maharashtra	371.0
12	Assam	368.9
13	Uttar Pradesh	352.8
14	Manipur	350.0
15	Bihar	342.8
16	West Bengal	340.6
17	Odisha	328.9
18	Gujarat	323.2
19	Tripura	286.1
20	Madhya Pradesh	278.7
	ALL INDIA	393.3

Source: RBI Handbook of Statistics on Indian States

Several factors contribute to higher labour costs in the state such as higher wage rates, skill shortages, labour unions, and productivity of the worker etc. Historically, Kerala has witnessed a higher standard of living compared to many other Indian states. This has led to relatively higher wage expectations in the labour market. Consequently, the cost of employing skilled and unskilled labour for infrastructure projects is correspondingly higher. While Kerala boasts a high literacy rate, the availability of skilled labour for specialised infrastructure projects might be limited. To bridge this gap, contractors often need to invest in training or recruit from outside the state, increasing labour costs.

A strong labour union presence and stringent labour regulations in Kerala can influence wage levels and project timelines. While these factors contribute to better worker welfare, they can also impact project costs. Factors such as climate, working conditions, and infrastructure availability can influence worker productivity. If these conditions are less favourable in Kerala, it might necessitate employing more labour to achieve the same output, thereby increasing costs. The combined effect of these factors results in elevated

labour costs for infrastructure projects in Kerala, contributing to the overall higher project expenses.

4. Environmental Rules

Kerala's abundant biodiversity and ecosystems are safeguarded by strict environmental restrictions. Kerala's geographic area is covered in forests to the tune of 54.70 percent (Table 4). Because of the significant environmental impact studies and mitigation actions required by these standards, expenses are increased. The report by Gadgil committee and Kasthurirangan committee reported about the fragility of land in Kerala. It results in non-availability of land for infrastructure development.

Table 4. Forest cover		
Sl. No	States/UT	Percentage of Geographical area have forest cover
1	Mizoram	84.53
2	Arunachal Pradesh	79.33
3	Meghalaya	76
4	Manipur	74.34
5	Nagaland	73.9
6	Tripura	73.64
7	Goa	60.62
8	Kerala	54.7
9	Sikkim	47.08
10	Uttarakhand	45.44
11	Chhattisgarh	41.21
12	Assam	36.09
13	Odisha	33.5
14	Jharkhand	29.76
15	Himachal Pradesh	27.73
16	Madhya Pradesh	25.14
17	Tamil Nadu	20.31
18	Karnataka	20.19
19	West Bengal	18.96
20	Telangana	18.93
21	Andhra Pradesh	18.28
22	Maharashtra	16.51
23	Bihar	7.84
24	Gujarat	7.61
25	Uttar Pradesh	6.15
26	Rajasthan	4.87
27	Punjab	3.67
28	Haryana	3.63

Source: PIB Press release dtd 20.07.2023

Kerala's stringent environmental regulations, while essential for preserving the state's ecological balance, significantly impact infrastructure costs. The rigorous Environmental Impact Assessment (EIA) process required for infrastructure projects in Kerala is time-consuming and expensive. It often involves detailed studies, public consultations, and mitigation measures, which add to project timelines and costs. Kerala's extensive coastline is subject to stringent Coastal Regulation Zone (CRZ) regulations, limiting development options and increasing costs. Infrastructure projects in coastal areas often require additional approvals and safeguards, leading to higher expenses.

Kerala has significant forest cover, and obtaining clearances for infrastructure projects passing through forest areas is a complex and time-consuming process, contributing to increased costs. Stricter waste management regulations in Kerala necessitate proper disposal and treatment of construction waste, adding to project expenses. While these regulations are crucial for environmental protection, they undoubtedly increase the cost of infrastructure development in Kerala compared to states with less stringent norms.

5. Restricted Fiscal Space

Kerala has a large expenditure commitment, especially in the social sector, and a restricted revenue base. This restricts the state's capacity to finance significant infrastructure projects without borrowing money from outside sources. Kerala's limited fiscal space significantly hampers its ability to invest in large-scale infrastructure projects. The state's revenue generation capacity is relatively lower compared to other states, primarily due to its agrarian economy and limited industrial base. This restricts the availability of funds for infrastructure development. Collectively all states and Union Territories have projected their debt-GSDP ratio to inch up to 27.6 per cent at the end of 2023-24. Kerala has a higher debt-to-GSDP ratio (36.9) compared to many other states, limiting its borrowing capacity (Table 5). This restricts the state's ability to finance large-scale infrastructure projects.

A significant portion of Kerala's budget is allocated to social sector schemes, such as education, health, and social welfare. While these are essential, they reduce the fiscal space available for infrastructure investment. Kerala's reliance on central grants for infrastructure funding is relatively higher compared to other states. Fluctuations in central grants can impact the state's ability to plan and execute infrastructure projects. These factors collectively limit Kerala's capacity to invest in infrastructure, necessitating a higher dependence on external funding sources, including grant-in-aid.

States	Debt to GSDP Ratio
Arunachal Pradesh	50.4
Punjab	47.6
Nagaland	44.3
Himachal Pradesh	44.2
Meghalaya	42.1
Manipur	39.5
Goa	38.3
West Bengal	38.3
Bihar	37.0
Kerala	36.9
Mizoram	36.2
Rajasthan	35.9

Source: RBI publication State Finance: A Study of Budgets

6. Natural Disasters

Kerala is vulnerable to landslides and floods, which can seriously destroy infrastructure and necessitate expensive reconstruction. Due to flood in 2018, the main sectors of the state had suffered a loss of Rs 25,050 crore (estimation by World bank & ADB) which causes huge financial distress. Kerala's vulnerability to natural disasters significantly contributes to elevated infrastructure costs. The state frequently experiences floods, landslides, coastal erosions, cyclones etc.

Kerala's geographical features, including heavy rainfall and extensive river networks, make it prone to floods. This necessitates the construction of flood-resistant infrastructure, such as elevated roads, bridges, and buildings, which increases costs. The hilly terrain of Kerala makes it susceptible to landslides, particularly during the monsoon season. Infrastructure projects in these areas require additional safety measures and often need to be rebuilt after landslides. The state's long coastline is vulnerable to erosion, requiring coastal protection measures and the construction of resilient infrastructure. While less frequent compared to other coastal states, Kerala is not immune to cyclones, which can cause significant damage to infrastructure. The recurring impact of these natural disasters results in higher maintenance costs, frequent repairs, and the need for more robust infrastructure, ultimately leading to elevated overall costs. The major disasters are shown in Table 6.

Year	Natural disaster
1924	Great flood of 1924
2001	Earthquake
2004	Tsunami
2010	Cyclone Laila
2017	Cyclone Ockhi
2018	Kerala Floods and Landslides
2019	Landslides in Wayanad

2020	Landslides in Idukki
2024	Landslides in Wayanad
<i>Source: compiled from different websites</i>	

Project-Wise Cost Comparison: National Highway Construction as a Case

To illustrate the disparity in infrastructure costs between Kerala and other states, a comparative analysis of national highway construction projects is presented. While a comprehensive, project-specific cost breakdown is beyond the scope of this input to memorandum, available data indicates a significant cost differential. For instance, the construction of a four-lane highway in a plain terrain state might cost approximately Rs. 30 crore per kilometre. However, constructing a similar highway in Kerala, often involving hilly terrains, landslides, and heavy rainfall, can escalate costs as much as more than 3 times the national average.

1. **High Land Acquisition Costs:** Purchasing land in Kerala is extremely expensive. This is partially caused by the state's dense population and land scarcity, which raises land costs. For example, as reported by the honourable union minister Shri. Nitin Gadkari, building a single kilometre of highway in Kerala costs about Rs 100 crore (words from Nitin Gadkari, Union Minister). Generally, the entire cost of execution of national highway projects is borne by the Centre. In some cases, State governments share part of some cost components of the projects. The precarious financial situation and the new norm mandating the State to bear 25% of the land acquisition cost for national highway development works have proved costly with the State being forced to pay the largest share of ₹5,580 crore in the country in the past five years (PIB dtd 26.07.2023).
2. **Labor Costs:** The highest labour prices in Kerala are found in all of India. Compared to many other states, the daily pay for unskilled labour can be significantly greater, ranging from Rs 700 to Rs 900 (Refer Table 4).
3. **Geographical and Environmental Challenges:** The topography of the state, environmental regulations, non-availability of land etc imposed geographical hurdles for infrastructure development in the state. This also attribute high construction and maintenance cost.
4. **Material Costs:** Kerala is not a producing state, rather it is one of the biggest consumer states in the country. Hence, the materials required for infrastructure has to be sourced from other states, that result in high material cost. Transportation costs is another factor which give rise to the material cost. Being a coastal state, the internal transport to remote or hilly areas can be costly.

Furthermore, the maintenance cost of highways in Kerala is also significantly higher due to the harsh climatic conditions and geographical challenges. Factors such as frequent landslides, soil erosion, and heavy rainfall necessitate frequent repairs and maintenance, adding to the overall expenditure.

These cost escalations are not isolated to highways but are representative of the broader infrastructure development scenario in Kerala. Buildings, bridges, and other infrastructure projects also face similar cost pressures due to the state's unique geographical and climatic conditions. A detailed cost comparison of similar national highway projects in Kerala and other states, considering factors such as unit cost per

kilometre, time overrun, and cost overruns, would further substantiate the elevated infrastructure costs in Kerala. The high cost for infrastructure development in Kerala is compelling evidence for an enhanced grant-in-aid.

Impact of High Infrastructure Costs on Kerala's Development

The elevated costs of infrastructure development in Kerala have far-reaching implications for the state's overall progress. A direct consequence is the slower pace of infrastructure creation compared to other states. The time taken to conceptualise, plan, and execute projects is significantly extended due to the higher financial outlay required. This delay in infrastructure development hampers economic growth by hindering industrialisation, trade, and tourism. Moreover, the high cost of infrastructure projects diverts scarce public resources away from other critical sectors such as education, healthcare, and social welfare. A disproportionate amount of the state's budget is consumed in building roads, bridges, and other infrastructure, leaving limited funds for essential social services. This can lead to imbalances in development, with infrastructure lagging behind human development indicators.

The high cost of infrastructure also impacts the affordability of housing, transportation, and other essential services for the people of Kerala. Increased infrastructure costs are often passed on to consumers in the form of higher prices, affecting the livelihood of the common people. This, in turn, can lead to social unrest and discontent. Furthermore, the higher cost of infrastructure development in Kerala makes the state less attractive for private investments. Investors often prefer locations with lower infrastructure costs, which can hinder job creation and industrial growth. This can exacerbate the issue of unemployment and out-migration, particularly among the youth. Hence, the elevated infrastructure costs in Kerala pose a significant challenge to the state's development trajectory. Addressing this issue through enhanced grant-in-aid is crucial to accelerate Kerala's progress and ensure its equitable development. Some of the implications of high infrastructure costs on Kerala's overall development is described below.

1. Slower Pace of Infrastructure Development

Kerala's elevated infrastructure costs have a direct and detrimental impact on the pace of its development. Unlike many other states, Kerala faces significant challenges in translating budgetary allocations into tangible infrastructure assets. The higher costs associated with land acquisition, labour, materials, and regulatory compliances result in a prolonged project cycle. As a consequence, Kerala's infrastructure development lags behind the national average. This slower pace of development is particularly evident in sectors such as transportation, where road and rail networks are crucial for economic growth. The increased time required to complete projects leads to delays in reaping the benefits of improved connectivity, hindering industrialisation, trade, and tourism.

Moreover, the slow pace of infrastructure development exacerbates existing bottlenecks, such as traffic congestion and inadequate public transportation. This, in turn, affects the quality of life for citizens, reduces productivity, and hampers the state's competitiveness.

2. Reduced Allocation of Funds for Other Essential Sectors

The exorbitant costs associated with infrastructure development in Kerala have a cascading effect on other crucial sectors. As a significant portion of the state's budget is diverted towards building roads, bridges, and other infrastructure, the allocation of funds for social sectors such as education, health, and social welfare is inevitably compromised. This reduced allocation can have severe consequences. Quality education, essential for human development and economic growth, may be compromised due to a shortage of funds for building new schools, hiring qualified teachers, and providing adequate infrastructure. Similarly, the healthcare sector may suffer from a lack of investment in hospitals, equipment, and medical personnel, impacting public health outcomes. Moreover, reduced spending on social welfare programs can undermine the state's efforts to reduce poverty and inequality. Essential safety nets for vulnerable populations may be weakened, leading to social unrest and instability.

3. Increased Financial Burden on the State Government

The elevated costs associated with infrastructure development in Kerala have placed an immense financial burden on the state government. The disproportionately high expenditure on construction projects has constrained the state's fiscal space, limiting its ability to undertake other development initiatives. To fund the escalating infrastructure costs, the state government is compelled to either increase its revenue through new taxes or borrowings, both of which have their own set of challenges. Raising taxes can adversely impact the state's economy and erode public morale, while increased borrowings can lead to a debt trap and limit future fiscal flexibility.

The financial strain caused by high infrastructure costs also impacts the state's ability to service its debt obligations, meet its expenditure commitments, and provide essential public services. A significant portion of the state's budget is diverted towards infrastructure projects, leaving limited resources for other critical areas such as education, healthcare, and social welfare. This financial burden hampers Kerala's overall development and its capacity to achieve its development goals. To alleviate this pressure and ensure the state's fiscal sustainability, an enhanced grant-in-aid is imperative.

4. Potential for Reduced Competitiveness and Investment

The elevated infrastructure costs in Kerala pose a significant threat to the state's competitiveness and its ability to attract investments. High infrastructure costs translate into higher operational expenses for businesses, making the state less attractive for industrial and commercial establishments compared to other regions with lower costs. Investors are drawn to locations with efficient and affordable infrastructure. When infrastructure costs are exorbitant, it discourages new investments and hinders the expansion of existing businesses. This can lead to a vicious cycle, as a lack of investment further hampers infrastructure development.

Moreover, high infrastructure costs can distort the level playing field for businesses operating in Kerala. Compared to their counterparts in other states with lower infrastructure costs, Kerala-based businesses face a competitive disadvantage. This can erode the state's industrial base and lead to job losses. To overcome these challenges and enhance Kerala's competitiveness, it is imperative to reduce the cost of infrastructure

development. An enhanced grant-in-aid can significantly contribute to achieving this goal.

Rationale for Enhanced Grant-in-Aid

The unique geographical, demographic, and economic conditions prevailing in Kerala necessitate a higher level of public investment in infrastructure compared to other states. The elevated costs associated with infrastructure development in Kerala have placed a significant strain on the state's finances, impeding its overall development trajectory. An enhanced grant-in-aid is essential to bridge the infrastructure gap and ensure Kerala's equitable development. By providing additional financial resources, the central government can assist the state in overcoming the challenges posed by high infrastructure costs. This support will enable Kerala to invest in critical infrastructure projects, create employment opportunities, and improve the overall quality of life for its citizens.

Furthermore, an enhanced grant-in-aid will help Kerala to align its development goals with the national priorities of inclusive growth and infrastructure development. By investing in Kerala's infrastructure, the central government can contribute to the overall economic prosperity of the country. The rationale for an enhanced grant-in-aid is rooted in the exceptional circumstances faced by Kerala in terms of infrastructure development. The additional financial support will enable the state to overcome its challenges, accelerate growth, and contribute effectively to the nation's progress.

How Enhanced Grant-in-Aid Can Alleviate Kerala's Financial Burden

An enhanced grant-in-aid would provide Kerala with much-needed financial relief to address the elevated costs associated with infrastructure development. By augmenting the state's resources, the benefits such as reduced fiscal strain, accelerated infrastructure development, debt reduction, investment in human development, enhanced competitiveness etc can be realised.

Additional financial support would help offset the increased expenditure on infrastructure projects, alleviating the pressure on the state's budget and preventing the diversion of funds from other essential sectors. With increased financial resources, Kerala can expedite infrastructure projects, reducing the time required to complete critical projects and improving connectivity and accessibility. The additional grant-in-aid can be utilised to reduce the state's debt burden, freeing up fiscal space for future investments and reducing interest payments. By easing the financial constraints on infrastructure development, the state can allocate more resources to social sectors such as education, health, and social welfare, thereby improving the overall quality of life for its citizens. An enhanced grant-in-aid can help Kerala create a more conducive business environment by reducing infrastructure costs and improving connectivity. This can attract investments, create jobs, and boost economic growth. In essence, an enhanced grant-in-aid would provide Kerala with the necessary financial cushion to overcome the challenges posed by high infrastructure costs and accelerate its development trajectory.

1. Accelerate Infrastructure Development

An enhanced grant-in-aid to Kerala can serve as a catalyst for accelerated infrastructure development. The additional financial resources can be strategically allocated to address the state's unique infrastructural challenges. Kerala's geographical and climatic conditions necessitate higher investment in infrastructure compared to other states. An increased grant-in-aid can help bridge this infrastructure gap by funding critical projects such as road expansion, bridge construction, and flood control measures. Improved connectivity is essential for economic growth and development. Enhanced grant-in-aid can be utilised to expand the road and rail network, improve airport infrastructure, and strengthen digital connectivity. This will facilitate seamless movement of goods and people, thereby boosting trade and tourism.

Kerala's commitment to environmental sustainability can be further strengthened with additional financial resources. The grant-in-aid can be used to promote green infrastructure projects, such as renewable energy sources, public transportation systems, and waste management facilities. Kerala's growing urban population demands robust infrastructure. Enhanced grant-in-aid can support the development of affordable housing, efficient public transport systems, and improved water and sanitation facilities in urban areas. Kerala is prone to natural disasters, making it imperative to invest in resilient infrastructure. The additional funds can be used to strengthen disaster preparedness and response capabilities, including early warning systems, evacuation shelters, and disaster-resistant infrastructure.

By providing Kerala with enhanced grant-in-aid, the central government can empower the state to overcome its infrastructural challenges, stimulate economic growth, and improve the overall quality of life for its citizens.

2. Improve Connectivity and Accessibility

Kerala's unique geographical terrain, characterised by hills, Western Ghats, and a vast coastline, poses significant challenges to infrastructure development. Constructing roads, railways, and other transportation networks is considerably more expensive compared to other states. The additional financial resources can be utilised to adopt innovative engineering solutions and advanced technologies to construct roads and bridges in challenging terrains. This will enhance connectivity between remote and hilly regions, improving accessibility to essential services like healthcare, education, and markets. Kerala's extensive coastline offers immense potential for economic growth through fisheries, tourism, and trade. However, the state faces infrastructure bottlenecks in port development, coastal road networks, and disaster management. Increased grant-in-aid can expedite the development of these critical infrastructure components, boosting coastal economy and enhancing connectivity.

An efficient public transportation system is crucial for reducing traffic congestion, improving air quality, and ensuring equitable mobility. Enhanced grant-in-aid can be invested in expanding metro rail networks, strengthening bus services, and developing water transport options. This will provide affordable and reliable transportation choices for the public, reducing reliance on private vehicles. In today's digital age, connectivity is essential for economic development, education, and healthcare. An enhanced grant-in-

aid can be used to expand broadband internet access, especially in rural and remote areas. This will bridge the digital divide and create opportunities for online businesses, education, and telemedicine. By investing in improved connectivity and accessibility, Kerala can unlock its economic potential, reduce regional disparities, and enhance the overall quality of life for its citizens.

3. Create Employment Opportunities

Infrastructure development is a significant driver of employment generation. Kerala's elevated infrastructure costs have limited the state's ability to invest in large-scale infrastructure projects, resulting in a relatively lower employment generation potential compared to other states. Increased funding for infrastructure projects will lead to a surge in demand for skilled and unskilled labour. This will create employment opportunities across various sectors, including construction, engineering, transportation, and allied industries. Infrastructure development often fosters the growth of SMEs that cater to the project's needs. An enhanced grant-in-aid can encourage the establishment of local businesses, thereby creating employment opportunities and boosting the local economy.

Investment in infrastructure often necessitates the development of a skilled workforce. The additional funds can be utilised to enhance vocational training and skill development programs, thereby equipping the youth with the necessary skills to participate in the growing job market. Kerala has witnessed significant out-migration due to limited employment opportunities. By creating jobs through infrastructure development, the state can retain its talented human capital and prevent the loss of skilled workers. An enhanced grant-in-aid can play a crucial role in addressing Kerala's unemployment challenges by stimulating job creation, supporting SMEs, developing human capital, and reducing out-migration.

4. Enhance the State's Economic Competitiveness

Kerala's elevated infrastructure costs pose a significant challenge to the state's economic competitiveness. Adequate infrastructure is essential for attracting investments and businesses. By providing additional financial resources, the state can invest in world-class infrastructure, such as industrial parks, transportation networks, and digital connectivity. This will create a conducive business environment, encouraging domestic and foreign investments. Efficient infrastructure is vital for smooth trade and commerce. An enhanced grant-in-aid can be used to develop modern ports, airports, and logistics facilities, thereby reducing transportation costs and improving the state's export competitiveness.

Kerala is renowned for its natural beauty and rich cultural heritage. Improved infrastructure, including roads, railways, and accommodation facilities, can boost tourism, a major contributor to the state's economy. Infrastructure development often goes hand-in-hand with skill development. An enhanced grant-in-aid can be utilised to invest in vocational training and higher education, creating a skilled workforce that can meet the demands of the growing economy. By investing in infrastructure, Kerala can enhance its economic competitiveness, attract investments, create jobs, and improve the overall standard of living for its citizens.

Quantifying the Financial Burden due to elevated infrastructure costs on Kerala

Determining the exact financial burden imposed on Kerala due to elevated infrastructure costs is a complex task, requiring comprehensive data analysis and modelling. However, a preliminary estimation can be derived from available data.

1. Comparative Analysis of Expenditure

A detailed comparison of infrastructure expenditure denoted by capex between Kerala and other states can provide insights into the disproportionate financial burden borne by Kerala (Table 7). Because a major portion of the state's fund is allocated to social sector schemes, such as education, health, and social welfare. While these are essential, they reduce the fiscal space available for infrastructure investment.

States	Total (Rs)
Uttar Pradesh	530917
Maharashtra	438645
Tamil Nadu	283869
Karnataka	276351
Madhya Pradesh	249822
Gujarat	248892
West Bengal	237874
Telangana	232452
Rajasthan	208535
Andhra Pradesh	188297
Odisha	182328
Haryana	173794
Bihar	170932
Kerala	126075
Jammu & Kashmir	114317
Punjab	114051
Assam	104444
Chhattisgarh	85435
Jharkhand	84670
NCT Delhi	71158
Uttarakhand	51202
Himachal Pradesh	45987
Arunachal Pradesh	30780
Manipur	24641
Goa	22351
Tripura	13698
Nagaland	13517
Meghalaya	12200
Mizoram	10460
Sikkim	8844
Puducherry	6310
<i>Source: RBI state's finance</i>	

2. Debt Accumulation

Analysing the growth of Kerala's public debt in relation to infrastructure spending can indicate the extent to which the state has had to borrow to finance its infrastructure needs. As per estimates, the state's public debt, which stood at Rs 25,721 crores in 2000–01, has now risen. As per the estimates, the state's public debt which stood at Rs.25,721 crores in 2000-01 have now risen to 3.57 lakh crores. The GSDP -debt ratio in Kerala also rose to an alarming 39% last year.

Demand for additional grant-in-aid for adjusting the elevated infrastructure cost

On the basis of the financial burden due to the elevated infrastructure cost, the 16th Finance Commission needs to consider the following recommendations from Kerala perspective.

- Given the increased strain of population density and difficult topography, including hilly areas or narrow land strips, should be given additional funding because these factors raise the land acquisition cost, costs of building and maintaining infrastructure. As per the 15th Finance Commission tax share determination, 'area' was given 15% weightage. We propose the 16th Finance Commission should rework the weightage and allot 10% for 'area' and 5% for 'population density'.
- The state had been contributing immensely in maintaining the green cover of the region. Kerala's abundant biodiversity and ecosystems are safeguarded by strict environmental restrictions. This result in infrastructure deficiency. Moreover, deforestation may significantly reduce the non-tax revenue of the state since revenue from forestry sector was reported to be Rs 289 crore in 2022-23 (Economic Review,2023).

The grant request is based on the additional costs incurred by Kerala due to the higher cost of road construction, land acquisition and other material costs compared to the national average.

To calculate the total additional cost, we use the following formula:

➤ **Construction cost:**

$$\text{Total Additional construction Cost} = (\text{Kerala's Cost per km} - \text{National Average Cost per km}) \times \text{Total Kilometres Planned}$$

➤ **Land Acquisition Costs:**

$$\text{Total Additional Land Acquisition Cost} = (\text{Kerala's Cost per acre} - \text{National Average Cost per acre}) \times \text{Total Acres Needed}$$

➤ **Labor and Material Costs:**

Total Additional Labor and Material Costs = (Kerala's Labor and Material Costs per km – National Average Labor and Material Costs per km) × Total Kilometres Planned

➤ **Grant-in-aid**

Total Grant in Aid=Total Additional construction Cost + Total Additional Land Acquisition Cost + Total Additional Labor and Material Costs

Hence, as illustrated in the above sections, the national average cost for constructing 1 km highway is 30 Cr and in Kerala it is 100 Cr. There is a mammoth difference of 70 Cr in construction of 1 km of national highway. As of July 2023, the National Highways Authority of India (NHAI) has built around 160 kilometres of national highway in Kerala over the past five years. Therefore, in the coming 5-year period, if 200 km is planned, then the details will be as follows:

Table 8. Grant-in-aid

Item	National Average (₹/km)	Kerala (₹/km)	Difference (₹/km)	Total difference for 200 km (₹ crores)
Road Construction	30 cr	100 cr	70 cr	14,000 cr

So, the Finance commission may consider the difference amount of national average cost and Kerala's cost as grant-in-aid for the coming 5 years in this regard.

Nevertheless, here we have illustratively explained on the infrastructure development of road connections which describes on the additional costs incurred by Kerala due to the higher cost of road construction, land acquisition and other material costs compared to the national average. As part of infrastructure development, it includes rail connectivity, construction of bridges, tunnels etc. which may also have implication on cost and therefore an enhanced grant-in-aid is crucial to address the state's infrastructure challenges and ensure its equitable development.

In addition, A weighted funding model can be a more equitable and efficient way to allocate central funding for infrastructure development across different states. This model would take into account various factors such as Land acquisition costs, Population density, Geographical challenges and Existing infrastructure deficiency. A scale of 1 to 10 is used to score each component, with 10 denoting the highest cost or requirement and 1 denoting the lowest. The weighted score is determined by adding up the values obtained from multiplying each factor's score by its corresponding weight. Higher ratings indicate a greater need for funds, which is taken into account when allocating cash. These scores are used to determine the proportionate allocation of the entire available money.

Proposed projects using Additional Grant-in-Aid

To ensure the optimal utilisation of the enhanced grant-in-aid for addressing Kerala's elevated infrastructure costs, well-defined projects are essential. The proposed activities using the additional grant-in-aid are as follows.

1. **Infrastructure Corridors:** Developing high-speed rail corridors, expressways, and port-road connectivity to enhance logistics efficiency and reduce transportation costs especially in the context of the development of Vizhinjam International Sea Port and allied sectors.
2. **Urban Infrastructure:** Investing in metro rail projects, bus rapid transit systems, and smart city initiatives to improve urban mobility and quality of life.
3. **Disaster Resilient Infrastructure:** Funding projects to strengthen infrastructure against natural calamities, such as flood control measures, early warning systems, and disaster recovery facilities.
4. **Digital Infrastructure:** Expanding broadband connectivity, digital literacy programs, and e-governance initiatives to bridge the digital divide.

By tying grants to specific projects, the Finance Commission can ensure that the funds are utilised effectively and transparently.

Conclusion

This input underscores the disproportionately high infrastructure costs incurred by the state of Kerala compared to other states in India. Due to unique geographical, climatic, and socio-economic factors, the construction of essential infrastructure, including highways, is significantly more expensive in Kerala. This input advocates for an enhanced grant-in-aid to alleviate the financial burden imposed on Kerala by these elevated costs. It is argued that additional financial resources are crucial for accelerating infrastructure development, improving connectivity and accessibility, creating employment opportunities, enhancing the state's economic competitiveness, and ultimately, improving the overall quality of life for Kerala's residents.

11

Innovation, Start-ups and the 16th Finance Commission¹⁹

Abstract

It is often understood that the institutions, that are important in development, need to coevolve and respond to the changes in the socio-economic context in which they operate. The 16th Finance Commission has been appointed at a time when India is aspiring to be a developed economy by 2047. Hence the need for the 16th Finance Commission to consider, along with the constitutional mandates, the contextual mandates.

Past episodes of economic development indicate that no country became a developed economy without investing substantially in science, technology, and innovation. In this process, the entrepreneur has always been at the center stage. Evidence across the world also indicates that start-ups are the breeding ground for entrepreneurs.

Although India has explicitly recognised the role of innovation in development evidenced by science, technology and innovation policy statements, the share R&D expenditure in GDP (R&D intensity) has been showing a downward trend from about 0.8% in 2009-10 to 0.64% in 2021-22. This compares very poorly with that of other emerging economies and OECD countries. During early 1990s, R&D intensity in China was lower than in India, but today it is more than three times that of India.

While the states have a key role in promoting science, technology, innovation, and entrepreneurship, states' R&D intensity is only about 0.3% of the GSDP. We make the case for raising this ratio to at least 0.6% by 2030–31 to ensure an innovation and knowledge driven development.

This could be done by including innovation and entrepreneurship as one of the key areas where grants in aid is given to the states. We have estimated an amount of Rs 2.841 Lakh Crore for the five years to be distributed among the states to raise the state-level R&D intensity to 0.6%.

Given the differences in initial endowment, all the states are not equally positioned to contribute towards an agenda of innovation and knowledge-driven development. Hence, higher allocation may be considered for states with higher capabilities so that the returns to such investment is maximized

¹⁹ Prepared by Prof K J Joseph, Director, GIFT.

in the short run. The local self-governments shall be induced to promote grassroot innovations by providing financial supports as in the case of China.

Kerala is better endowed and has been the breeding ground for numerous innovations. Further the state has adopted a strategy of transforming it into a knowledge economy and holds the top position among the Indian states in terms of the performance in start-ups. However, Kerala is fiscally stressed inter alia because of the steady decline in her share in the divisible pool from 3.9% during 10th Finance Commission to 1.9% in the 15th Finance Commission. On these grounds, we make the case for an allocation of Rs 13,471 Crore as grants in aid for the five years which works out to about 0.53% of the innovation related grants in aid to be given to all the states.

1.0 The Context

Since the institutions play an essential role in development, they need to be responsive to the socio-economic context and coevolve with the economy and the society. In India, one such most influential institution has been the Finance Commission (FC), with its prime constitutional mandate to recommend how much of the Union's revenue is to be devolved to the States (size of the divisible pool) and how much should be devolved to each State (read as subnational entities). Their role has been especially important because of the congenital inequality in the distribution of revenue and expenditure responsibilities between the Union and the States. As observed by the 15th FC, States together are responsible for over 62 percent of the combined expenditure of the Union and the States whereas their revenue entitlement is only about 37 percent.

As the 16th Finance Commission embarks on its constitutional mandate to devolve resources between the union and the states, there is an imperative to recognise that the socio-economic context at present is distinctly different from what it was at the time when the Finance Commission was conceived. In 1951 when the Finance Commission was established and its mandates were designed, the major issue, given the prevailing socio-economic context, was that of addressing under development and facilitating a balanced regional development. But today, India is one of the fastest growing economies in the world and is aspiring to become the third largest one by the close of this decade. More importantly, India envisages to become a developed economy by 2047. Since India grows if and only if the states grow, the Finance Commission needs to be cognisant of the paramount importance of the devolution to the states for enabling them to play their key role in accomplishing the national vision. It is also to be recognised that on account of their differing capabilities the states are not equally positioned to contributing towards the national vision.

From the past economic growth episodes, it is evident that there is hardly any country in the world that assumed the developed economy status without substantial investment in science, technology, and innovation ecosystem. Joseph Schumpeter who "invented" innovation as a process of "creative destruction" in the form of new products, new

process, new market, new materials and new organisations, placed entrepreneurs at the centre stage of innovation. The available empirical evidence suggests that the start-up eco system serves as the breeding ground for entrepreneurs.

The Science Technology and Innovation Policy 2020 highlighted the role of Science and technology when it envisaged “To achieve technological self-reliance and position India among the top three scientific superpowers in the decade to come” and “to double the number of Full-Time Equivalent (FTE) researchers, Gross Expenditure on R&D (GERD) and private sector contribution to the GERD every 5 years” It recognised the role of states when it stated “each State will earmark a percentage of the state allocation for STI-related activities under a separate budget head”.

It is in this context that this report looks at the state of science, technology, and innovation in India and the present status of start-up eco system to present specific recommendations for the 16th Finance Commission towards help building a vibrant innovation system at the state level. Given the differential capabilities of states, it also articulates collaborative action points across states in the true spirit of cooperative federalism, that would facilitate capacity building and catch up of the lagging states which could be supported by the Finance Commission.

The remainder of this report is presented as follows. Section 2 presents an analytical background by presenting landscape of India’s innovation system. Here the relevance of scientific knowledge backed by Science, Technology and Innovation (STI) mode of learning with formal R&D and that of synthetic (experienced based) knowledge backed by Doing Using and Interacting (DUI) mode of learning leading to informal innovation for development has been articulated. Section 3 elaborates the broad contours of the regional innovation system in Kerala and highlights the strategy of transforming Kerala to a Knowledge economy. Section 4 analyses trends in investment in R&D and innovation at the national and sub-national level. It is observed that India lags much behind in terms of R&D and innovation as compared to other emerging economies. The state level R&D is also substantially low and therefore calls for a significant increase in the R&D and innovation effort. Finally section 5 urges the Finance Commission to facilitate an innovation driven development and presents estimates on the grants in aid to be provided for promoting R&D and innovation at the state level.

2.0 The Landscape of India’s Innovation System

India is a pioneer in the developing world to explicitly recognise the pivotal role of science, technology and innovation in economic development and social transformation. It is evident from the Scientific Policy Resolution of India (1958) which stated,

“The key to national prosperity, apart from the spirit of the people, lies, in the modern age, in the effective combination of three factors, technology, raw materials and capital, of which the first is perhaps the most important, since the creation and adoption of new scientific techniques can, in fact, make up for a deficiency in natural resources, and reduce the demands on capital”.

It continued,

“It is only through the scientific approach and method and the use of scientific knowledge that reasonable material and cultural amenities and services can be provided for every member of the community, and it is out of a recognition of this possibility that the idea of a welfare state has grown”.

Within this perspective India has built up an elaborate system of policy measures and institutional arrangements to promote research in atomic energy, defence, space & electronics. The other initiatives which laid the foundation for many of the achievements in the later years included, but not limited to, establishment of a nation-wide network R&D labs with regional and national focus under the CSIR, establishment of IITs, large number of engineering colleges and universities for generating human capital. Agricultural research was promoted to usher green revolution and achieve self-sufficiency in food. The Indian Patent Act on 1970 facilitated reengineering through process patent instead of product patent. Liberal approach to FDI and foreign technology followed during the initial years on independence gave way to a much restrictive regime to help facilitate the building up of the much-needed domestic technological capability and self-reliant development (Joseph and Abrol 2012).

Liberalised policies which had their beginning in the 1980s transformed to Globalisation by 1991 and got accelerated mid 1990s when WTO was formed with India as a founding member. As the economy got integrated with the world market as there has been increasing participation in the Global Production Network (GPN). The innovation systems also got globalized with India’s active participation in the Global Innovation Network (GIN) and thus became an attractive location for undertaking R&D. Within such a context, the new initiatives within this framework of Science, Technology and Innovation Policy 2013

- **Aatma Nirbhar Bharat** with a view to further strengthening our innovation system at the national, regional, and sectoral level to hasten the process of making India an innovation driven economic superpower.
- **Make in India** which aimed at making India the most attractive global destination for Foreign Direct Investment (FDI) and develop India into ‘Global Manufacturing Hub’ by facilitating investment and fostering innovation.
- **Digital India** to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing internet connectivity;
- **Start up India** wherein the eligible companies could get recognised as Start ups by DPIIT so that they could avail a host of tax benefits, easier compliance, IPR fast-tracking
- **Atal Innovation Mission (AIM)**, the flagship project of NITI Aayog to promote innovation and entrepreneurship in the country. The AIM project serves as a platform for the promotion of world-class innovation hubs and self-employment activities in technology-driven areas.

There has been an increase in the rate of growth of GDP in India since globalisation. The share of manufacturing in GDP increased from about 9% in 1951 to over 17% in by mid 1990s. But we have not been able to move upward under the globalised innovation system indicating strong signs of premature deindustrialisation (Joseph and Kakarlapudi 2020).

Our target of raising the share of the manufacturing sector to 25% GDP with 100 million manufacturing employment set more than a decade ago remains a distant dream. The outcome has been poor employment growth along with widening development divides within the country between regions and between individuals.

Evidence across the world also clearly indicates that economic development is the progeny of science, technology and innovation. A very often used indicator of a country's capability in the sphere of innovation in general, and science and technology in particular is Research and Development (R&D) expenditure. However, as rightly noted by the Science, Technology, and Innovation Policy 2013, viewed from a development perspective, "while we do need to increase R&D investment and efforts, this view of innovation is based on a myopic perception that restricts it to the confines of formal R&D". Over time, in the policy parlance, the focus therefore has shifted from narrow R&D based approach to a broader process of innovation system building.

The innovation systems approach, which by now has emerged as the most popular approach in innovation studies (Fagerberg and Sapprasert, 2011), refers to the relationships and interaction between actors engaged in the production, diffusion and use of new, and economically useful, knowledge. Here innovation is seen as a process of generation of knowledge through interactive learning of different actors which is governed by the institutional architecture within which such interactions take place (Lundvall, et al 2009). According to this perspective, knowledge is the most important resource and learning is the most important process in the modern economy. Therefore, any inquiry into the development divide, both within and between countries, would invariably lead us to the doorsteps of the knowledge divide and learning divide.

Here, knowledge and innovation could be seen in terms of

- a) Scientific knowledge which is primarily backed by the Science, Technology, and Innovation (STI) mode of learning mainly through formal R&D, and
- b) Synthetic knowledge/experience-based knowledge, which is mainly an outcome of non-R&D based, Doing Using and Interacting (DUI) mode of learning among different actors in the innovation system (Jenson et al (2007); Joseph, et al 2021) leading to informal innovations.

In a sense any innovation is bound to have both STI and DUI dimensions. Therefore, these two modes of learning may not be considered as mutually exclusive and that the distinction could be based on the primacy of the type of knowledge. Thus viewed while the STI mode of Innovation and DUI mode of innovation are important from the perspective of development focus of policy attention has been more on latter and the DUI mode of learning seems to have not received the attention that they deserve.

There are however a number of studies showing that DUI mode may be of much importance in the developing economy context where the innovations are mostly of incremental rather than radical. The improvisational attitude at the grassroots prevalent in many parts of emerging economies, such as India, is often locally called as *jugaad* (Krishnan, 2010) akin to 'appropriate technology' defined such technologies as *a set of small-scale, labour-intensive technologies that are easy to operate and maintain, and*

have minimal harmful impact on the environment (Schumacher 1973). Large number of studies on informal sector innovation also in a sense essentially highlight the DUI mode of learning (Bhaduri and Kumar 2011; Kumar and Bhaduri; 2014. Shekar and Joseph (2022) Shekar et al (2023) Grassroots-level *frugal innovators* are individuals or a group of people who attempt to solve a given problem adopting locally available ingenuity, and in doing so creates a novel solution. Most of these innovations happen with very limited support from the formal institutions, and hence while such solutions are adept at addressing the local problem reasonably well, they often fail to scale up (Krishnan, 2010) primarily on account of the much-needed institutional support (Fressoli et al 2014; Abrol and Gupta 2014).

The science Technology and Innovation policy (2020) has shown exceptional commitment towards building a vibrant and inclusive innovation eco system promoting both STI and DUI mode of learning. Innovative initiatives include but not limited to

- “Hybrid funding models with enhanced participation from public and private sectors through the Advanced Missions in Innovative Research Ecosystem (ADMIRE) initiative.
- STI Development Bank to facilitate a corpus fund for investing in direct long term investments in select strategic areas on various long and medium-term projects, commercial ventures, start-ups, technology diffusion and licensing etc.
- Promote technology self-reliance and indigenization to achieve the larger goal of “Atmanirbhar Bharat” through a two-way approach of indigenous development of technology as well as technology indigenization, in alignment with national priorities, like sustainability and social benefit, and resources.
- Impetus to the mainstreaming of equity and inclusion within the STI ecosystem through an India-centric Equity & Inclusion (E&I) charter to be developed for tackling all forms of discrimination, exclusions and inequalities in STI
- “One nation, one subscription” policy whereby, in return for one centrally-negotiated payment, all individuals in India will have access to journal articles.

3.0 Kerala’s Innovation System and Transition to a Knowledge Economy

3.1 The STI Landscape

Kerala is the pioneer among Indian states to realize the importance of innovation-driven development and the role of knowledge as a key resource for growth and transformation. The focus on science, technology, and innovation by the government of Kerala has been very much in sync with its development strategy of human development driven by public action. This got manifested in its substantial investment in education especially higher education with the active involvement of the private sector. The establishment of government-aided private institutions as early in 1960s tends to suggest that Kerala has initiated Public Private Participation (PPP) in education decades before PPP was articulated at the national level. The result has been the establishment of a higher education infrastructure for engineering, medical and arts and science at the instance of various institutions established by the Government, government supported institutions and self-financing institutions. This indeed has paid rich dividends. With its higher education enrolment ratio (41.3%) way above the national average (28.4%) the state emerged as the major source of highly educated manpower and skilled labour force for

other states. Evidently, Keralites account of substantial share of the IT manpower of all the leading IT companies in India. Thus viewed the state of Kerala has contributed much towards the nation building which has not received the attention that it deserves especially in the discussion on fiscal federalism. The state has built up a fairly vibrant regional innovation system consisting of 13 universities (1. Kerala Agricultural University; 2. Kerala Veterinary and Animal Science University; 3. Kerala University of Digital Sciences, Innovation, and Technology; 4. Cochin University of Science and Technology; 5. Kerala University of Health and Allied Sciences; 6. Kerala University of Fisheries and Studies; 7. Kerala University; 8. Calicut University; 9. Mahatma Gandhi University; 10. Sree Sankara Acharya University of Sanskrit; 11. Kannur University; 12. Malayalam University and Kerala Technological University; 13. Sreenarayanaguru Open University) that promote studies and research on a wide range of areas of relevance for development. In addition there are different technical educational institutions and R&D centres and schemes which include

- Centre for Engineering Research and Development
- Transportation, Engineering and Research Centre
- Product Design and Development Centre
- Reusable Building System in RIT
- Rural Technology Development Centre
- Student Satellite Launch Program
- Centre for Bamboo Technology
- Inter disciplinary Research Centres at Government Engineering Colleges
- Robotics and AI Nodel Centre
- Centre of excellence in Systems, Energy and Environment
- Centre for High-performance Computing.
- International Centre for Free and Open Software
- International Research Institute of Ayurveda
- India innovation centre for Graphene

In addition to above there are eight research institutes under the Kerala State Council of Science, Technology and Environment and Kerala Development Innovation Strategic Council (K-DISC) which undertakes various programmes to facilitate innovation led development and the transition of Kerala to a knowledge economy.

3.2 Kerala State Council for Science, Technology and Environment (KSCSTE)

From the perspective STI mode of technological learning and innovation the Government of Kerala established the Science, Technology and Environment Committee (STEC) and a number of research institutes were brought under its coordination as early as in 1972 inspired to a great extent by the Science Policy Resolution.

In 2002 STEC was rechristened as The Kerala State Council for Science, Technology and Environment (KSCSTE) and transformed it into an autonomous body under the Ministry of S&T, Kerala. The council promotes and activates programmes for increasing the stock of knowledge in science, and fine tunes policies which are significant for the sustained development of humanity. It aims at achieving excellence in basic research, academia-industry interactions, strengthening indigenous initiatives, and building strong

infrastructure and developing a high-quality science education system in the state. This has been achieved through various schemes and programs and by the R &D organisations established by the council.

There are eight institutions under the ambit of KSCSTE which undertakes research work in specific identified domains.

- **The Centre for Water Resources Development and Management (CWRDM)** was established by recognizing the need for catering to the R&D needs in the field of water management.
- **The Kerala Forest Research Institute (KFRI)** undertakes research in areas like forestry, biodiversity etc., that are vital to the development of the Kerala State.
- **National Transportation Planning and Research Centre (NATPAC)** is undertaking research and consultancy works in the fields of traffic engineering and transportation planning, highway engineering, public transport system, inland water transport, tourism planning, rural roads, environmental impact assessment and transport energy.
- **Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI)** is established with the vision of Conservation and sustainable utilization of the plant biodiversity of India, particularly of Kerala for the well-being of her people.
- **Malabar Botanical Garden & Institute for Plant Sciences (MBGIPS)** is dedicated to the conservation and research on aquatic plant diversity, lower group plants, endangered plants of the erstwhile Malabar Region, as well as disseminating knowledge on various facet of plant sciences.
- **The Kerala School of Mathematics (KSoM)** has been setup as a joint venture of KSCSTE and National Board of Higher Mathematics, under Department of Atomic Energy, Government of India. The main objective of the institute is to promote Mathematical research in the country, particularly in Kerala.

3.3 Kerala Development Innovation Strategic Council (K-DISC)

As envisaged in the Science, Technology and Innovation Policy 2013, Kerala established Kerala State Innovation Council which was transformed to **Kerala Development and Strategic Innovation Council (K-DISC)** with the mandate of spearheading the vision of building a competitive innovative and inclusive Kerala through the creation of a healthy, conducive ecosystem for transformative and bold innovations through new directions in technology, product, and process innovations. KSCSTE and K-DISC coordinate the research and innovation efforts of many of the institutions set up by the State Government while the State Universities and Higher Educational Institutions carry out R&D and innovation efforts at their level. The K-DISC has evolved a holistic S&T strategy for Kerala's second-generation development problems without sacrificing its inclusiveness and sustainability with following strategic initiatives.

1. **Young Innovators Programme** aims at democratising innovation and targets students, from every institution, across Kerala. Addressing concerns raised from various quarters on the lack of proficiencies of children in critical thinking and resourcefulness despite access to facilities and infrastructure, equity etc., the

Innovation for Youth with Disability (I-YwD) project ensures innovation methodologies and opportunities for ideation and entrepreneurship reach youth with disabilities.

2. **‘Manchadi - Teach Maths for Kerala’ and ‘Mazhavillu- Teach Science for Kerala’** are programmes designed by K-DISC to address the need for innovation in education in a context wherein direct teaching methods have led students to expect information rather than seek it and that a strikingly lower number of children who can answer reasoning questions, problem-solving questions and questions involving critical thinking.
3. **‘One District One Idea’ (ODOI)** is an innovation challenge programme for manufacturing clusters and medium and micro-enterprise clusters.
4. **One Local Government One Idea programme’ (OLOI)** envisions empowering the Local Governments in Kerala to develop innovative solutions for their problems, going beyond traditional problem-solving approaches and looking at transformation models. OLOI also aims to support local governments in local economic development, service delivery and governance through innovation.
5. **Accelerating adoption of Emerging Technology Solutions in Government’** is a programme where K-DISC works with partner departments to identify problems through Application Development Clinics.
6. K-DISC has developed a strategy of innovation-led development by creating Centres of Excellence in strategic areas like the Centre of Excellence in Microbiome, Centre of Excellence in Nutraceuticals, Kerala Genome Data Centre, Clean Energy Business Incubation Centre, and Kerala Open Talent CoE.
7. **The Accelerated Blockchain Competency Development (ABCD)** programme was established to make Kerala a Blockchain hub.
8. **The Electric Vehicle (EV) Consortium** was formed to create an ecosystem for manufacturing electric vehicles and components conducive to Indian conditions and utilizing indigenous resources.
9. **Kerala Medical Technology Consortium (KMTC)** aims to position of Kerala as the top Medical Devices and MedTech Hub in the country.
10. **Wayanad Smart Coffee project** aims to establish state-of-the-art processing facilities for coffee farmers to access higher value for their produce and provide solutions for problems caused by climate change.
11. **Under the Miyawaki programme**, a model for rapid urban forest development for Kerala was developed for carbon sequestration, biodiversity improvement, eco-restoration, and urban open space creation.
12. **Atal Community Innovation Centre** is a hub and spoke model innovation centre designed as a living lab for piloting innovation models in real-life contexts prior to scaling.
13. **The employability program of K-DISC** called the Kerala Knowledge Economy Mission aims at providing access for educated unemployed to opportunities in the capital-intensive, technology-driven enterprises in the private sector through demand-driven skilling programmes.

3.4 Kerala Start-up Mission

The **Kerala Start-up Mission (KSUM)** founded in 2006, a decade before the Start up India program was initiated at the national level, acts as a nodal agency for promoting innovation and entrepreneurship in the state, by supporting the state's startup ecosystem through the various schemes and support programs. KSUM promotes technology-based entrepreneurship activities and creates the infrastructure and ecosystem required to support high-end technology-based startup businesses thereby guiding young minds who come up with innovative solutions.

With over 40,000 entrepreneurs and more than 5,000 startups, Kerala holds the distinction of being the most energetic start-up ecosystem in the country.

3.4.1 Major Programmes implemented at school level

1. Industry on-campus,
2. Young Innovators Program,
3. Innovation on Campus,
4. Samagra Shiksha Kerala
5. STARS Project for girls in Vocational Higher Secondary
6. SHAKTHI Girls Entrepreneurship Empowerment-Program.

These initiatives aim to instil an entrepreneurial culture and create a pool of skilled individuals.

3.4.2 Major Programmes Implemented at the College level

The Research and Innovation Network Kerala (RINK) - a project that fosters the development of a culture of entrepreneurship and shapes the research ecosystem. It aims to promote technological capabilities, products, and innovations from research institutions to the market. The initiative also facilitates the transfer of technology and intellectual property from research organizations to the marketplace.

3.4.3 Support to Start-ups

KSUM has initiated various grant schemes for start-ups to overcome one of the major obstacles in any start-up journey which is "capital". Administered by the mission, the grant goes beyond financial assistance, offering mentorship and support for start-ups developing viable business concepts. It includes an Idea Grant (up to three lakh rupees), a Productization Grant (up to eight lakh rupees), and a Scale Up Grant (up to 15 lakh rupees). R & D grant, which is specifically designated for research purposes are for hardware start-ups emphasizing substantial research and development.

Seed loans, aimed at encouraging and nurturing ventures rooted in emerging technology, serve as a financial boost for start-ups in Kerala. Such Units can avail themselves of

subsidized loans with favourable terms, supporting their growth and innovation in the dynamic landscape of technological advancements.

The Patent Reimbursement Scheme supports start-ups and students by reimbursing the patenting costs incurred. The government offers subsidies of up to Rupees two lakhs for Indian patents and up to ten Rs 10 Lakhs for foreign patents.

Technology Transfer & Commercialization Support initiative supports start-ups in India that acquire technology licenses or engage in commercialization activities with government research institutes. The funding is provided to the start-ups towards reimbursing 90% of the total technology transfer cost. Start-ups involved in developing products through these collaborations can receive substantial financial assistance, with a maximum reimbursement of up to ten lakh rupees. This initiative aims to encourage technology transfer and commercialization efforts by fostering partnerships between start-ups and government research institutions, thereby promoting innovation and economic growth.

The '**Government as a Market Place**' is a scheme to facilitate government departments in directly procuring products from start-ups. This program serves as a platform for start-ups to showcase their products or services, allowing government agencies to directly support and procure from these start-ups. Through this initiative, start-ups can gain visibility in the government market and avail themselves of opportunities to provide services or supply products to government entities. The project has increased the procurement limit to Rs 50 lakhs, expanding the scope for start-ups to engage with government departments.

Fund of Funds, a SEBI Approved Alternative Investment Funds initiative by (KSUM) brings together venture capital funds that are recognized by the Securities and Exchange Board of India. The project aims to attract more investments to the start-up ecosystem in Kerala. The state government, acting as a limited partner, work towards increasing the attractiveness of fund inflows to the state's start-up ecosystem. The initiative seeks to position Kerala as a favourable destination for venture capital investments, fostering the growth and development of start-ups in the region.

Emerging Technology Hub is being set up at Thiruvananthapuram Technocity with an area of 5 lakh square feet aims at making Kerala a new technology hub. Product designing can be made easier by availing of the services of Super Fab Lab in Kochi. The lab is spread over 10,000 square feet at the Kalamassery Integrated Startup Complex. Apart from this, there are 23 mini-fab labs in Kerala and Future Lab in Kochi for future technology experiments. Kerala Start-up Mission also provides Start-up Research Grant, Nidhi Prayas Grant, Start-up India Seed Loan, Research Innovation Challenges, and Market Support Scheme to support start-ups at various stages.

3.4.4 Accomplishments

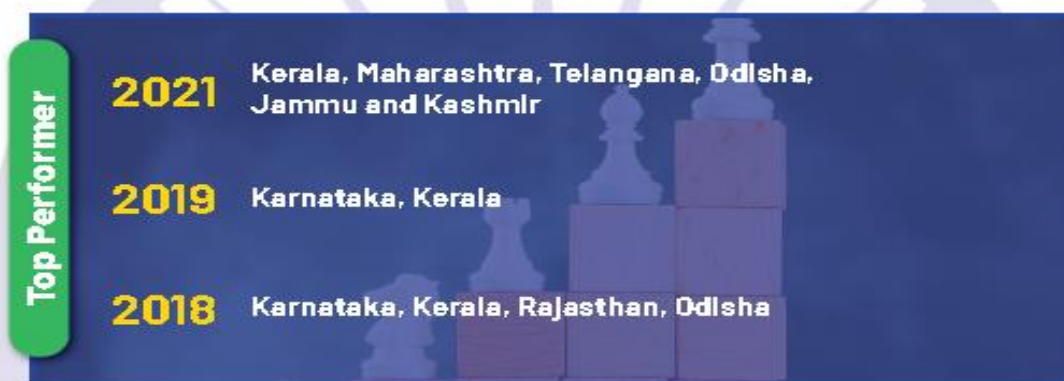
1. Venture capital funding of ₹5,500 crores
2. creation of 50,000 job opportunities
3. granted innovation grants and seed loans to support 778 startups,
4. Government grant of ₹35 crores for these initiatives.

Kerala is recognized as one of the best states in India for Start-ups; the state has always supported the efforts of its people from the grassroot level to improve the pace of innovation. The Government of Kerala launched the “Innovation Grant Scheme” to help Start-ups and entrepreneurs turn their unique ideas into full-fledged businesses. This scheme has been implemented by the Kerala Startup Mission, the State government's focal body for Startup related activities and schemes (GoI, 2022). From the National Report on States’ start-up ranking, it is evident that Kerala has been displaying an outstanding performance (see Box 1). Further Kerala has been ranked first in Asia by the Start-up Genome’s Global Start up Ecosystem Report for the year 2022.

Box 1: Kerala’s Performance in Startup as per the National Report on State’s start-up ranking

Top Performers: Top Performers have shown significant growth in respective Startup ecosystems and have established initiatives to nurture the entrepreneurs of the state.

For the year **2018**, the top-performing states were Karnataka, Kerala, Odisha, and Rajasthan, while in **2019**, Karnataka and Kerala scored well on the board. In **2021**, Karnataka graduated to best performer and Kerala was joined by Maharashtra, Odisha, Telangana, and Jammu and Kashmir.



Source: National Report on State’s start-up ranking (2022)

3.5 DUI Mode of Learning and Innovation

Science, Technology, and Innovation Policy (2013), released by the Government of India, acknowledged role of DUI (doing Using and Interacting)mode of innovation when it stated “while we do need to increase R&D investment and efforts, this view of innovation is based on a myopic perception that restricts it to the confines of formal R&D”. Kerala has been known for various innovation outside the formal R&D based innovation system

that helped much towards development at the instance of various actors including numerous NGOs and individuals

3.5.1 Kerala Sasthra Sahithya Parishad

One of the much well-known organisations that contributed broadly within the DUI mode of learning is the **Kerala Sasthra Sahithya Parishad** which is the People's Science Movement of Kerala.

Founded in 1962, KSSP started its work on the science society interface with about 40 members as an organization of science writers in Malayalam. Over the past five decades it has grown into a mass movement with a membership over 50000, distributed in more than one thousand two hundred units spread all over Kerala. Started as a forum of science writers with the limited objective of publishing science literature in Malayalam, the local language, and popularizing science, it was soon realized that mere publication of literature or taking science classes was not enough, if the blessings of science were to reach the common people. It is engaged broadly in three types of activities: educative, agitate and constructive, in areas like environment, health, education, energy, literacy, micro planning and development in general. All the activities of KSSP are social and meant for changing the values and lifestyles of the people through mass mobilization. It is trying to liberate knowledge and take it to the common people at the grassroots level (Kumar 2021) Over the past five decades it has grown into a massive people's science movement, with a membership of about 50,000 drawn from all walks of life and distributed in about 1200 units within the state of Kerala.

3.5.2 Kudumbashree Mission

It is one of the organisational innovations that culminated in the formation of one of the largest women's networks in the world established in 1997, is the poverty eradication and women empowerment programme implemented by the State Poverty Eradication Mission (SPEM) of the Government of Kerala. Various activities/ programs implemented by *Kudumbashree* mission include micro finance activities, formation of micro enterprises and marketing of its products, upgradation of micro enterprises to collectives and producer companies, activities in social development and balasabha, gender initiatives, livelihood activities in agriculture and animal husbandry, to name a few. Moreover, *Kudumbashree* is implementing Government of India's flagship programs like PMAY, NULM, DDUGKY, NRLM, SVEP, MKSP etc

Kudumbashree has always been known for its social innovations based on DUI mode of learning. Over the years, *Kudumbashree* Mission has conceived many innovative social projects which transformed the community and helped them to embrace the path of development. Innovations ranges from Asraya project, that won Prime Ministers Award for Public Administration, to *Kudumbashree* School Project, where community education process was initiated for 43 lakh members for the first time. (For more details <https://www.kudumbashree.org/pic-topic-description/innovations?page=2>)

3.5.3 Grassroot Innovations

Table 1 presents data on grassroots innovations compiled from state-level books on grassroots innovations published by National Innovation Foundation (NIF) and we divided them into product innovations and innovations in herbal traditional knowledge.

Table 1: Number of grassroots/traditional knowledge-based innovations across Indian States

Sl. No.	States	Product Innovations (No)	Herbal Knowledge-Practices (No)
1	Andhra Pradesh	20	12
2	Arunachal Pradesh	10	12
3	Assam	38	10
4	Bihar	12	12
5	Chhattisgarh	6	11
6	Eastern Himalayas	15	12
7	Delhi	12	6
8	Gujarat	41	12
9	Haryana	16	11
10	Himachal Pradesh	9	13
11	Jammu Kashmir	29	7
12	Jharkhand	6	12
13	Karnataka	26	10
14	Kerala	43	14
15	Madhya Pradesh	16	15
16	Maharashtra	18	12
17	Manipur	13	8
18	Meghalaya	3	10
19	Orissa	15	15
20	Punjab	15	6
21	Rajasthan	28	13
22	Sikkim	0	12
23	Tamil Nadu	33	10
24	Uttar Pradesh	28	16
25	Uttarakhand	19	12
26	West Bengal	17	12

Source: Compiled from State level books on Grass root innovations published by National *Innovation Foundation*

It is evident that Kerala has been a breeding ground for DUI mode of learning, leading to different kinds of informal innovations, frugal innovations, grassroots innovations and Jugaad. The state stands above other states even in terms of absolute number of innovations.

Such grass roots innovations, like Njallani variety of cardamom developed by an ordinary farmer that won the national award, have significantly contributed to income and

employment generation, reduced production cost and environmentally friendly cultural practices (See Box 2).

Box 2: Grass root Innovation: Case of Cardamom in Kerala

Cardamom is mainly grown by small growers in the relatively backward ever-green forests of Western Ghat region in Kerala, Karnataka, and Tamil Nadu. The yield of cardamom during 1980s was around 70-80 kgs per ha. Though there was a growing market from the oil-rich Arab countries, it was difficult for the cardamom sector to face the heightened competition from Guatemala with an average productivity of over 300 Kgs/ha. Hence, the dream of cardamom growers was to reach a yield level of 300 kg per ha, comparable to that of Guatemala. The research institutes, though came up with many new varieties, none of them were successful in addressing the challenge.

Thanks to a variety developed by a small farmer, today there are gardens with productivity of more than 600 Kg/ha and the production of cardamom in Kerala increased from about 3000 MT during 1980s to over 24,000 MT at present. This new variety, Njallani Gold, named after the small farmer Mr Joseph Njallani, who developed this variety, has diffused widely into the whole cardamom growing areas in Kerala, Karnataka and Tamil Nadu (Joseph and George 2010). Njallani Gold has a yield potential of over 600kgs /ha for which he received National Innovation Award from the National Innovation Foundation in 2001. Following Njallani other small growers developed other varieties with different characteristics of cardamom and received the national innovation awards from NIF. These varieties include Wonder cardamom, While flower cardamom, Panikulangara Green Gold, and PND Vaiga. Today, more than 90% of cardamom growers in India uses the cultivars evolved by the farmers.

Apart from developing new plant varieties, the small farmers have also developed innovative cultural practices relating to plant propagation and planting. The innovations in plant propagation and cultural practices almost halved the time lag between planting and harvesting, considerably reduced the cost of cultivation, and helped reduce soil erosion.

Source: Joseph and Zhang (2019)

However, even in a state like Kerala, which is known for its decentralized development planning wherein about 25% of the plan fund is devolved to local governments, there is hardly any fund made available for promoting such innovations.

3.6 Kerala and the Knowledge Economy

Kerala stands at a critical juncture in its economic development trajectory, marked by a transition towards a knowledge economy by effectively harnessing the innovation system that evolved. The strategy is spearheaded by the Kerala Development and Strategic Innovation Council (K-DISC) and the Kerala State Council for Science, Technology and Environment (KSCSTE) with the active involvement of all the actors in the regional innovation system. Given the limitation of the industrial base within the state, there is a

need to look at a new model integrating startups, sunrise industries, knowledge industries, and local governments. In this context the new strategy involves fostering the synergies between knowledge creation, technology transfer, and market dynamics with a view to generate new income and employment generation opportunities (Shekar and Unnikrishnan 2023)

Kerala's journey towards a knowledge economy is shaped by its resource endowments. The basic endowments of the state are thus not conducive to a conventional investment led growth model. Kerala's economic base is dominated by low productivity and low value addition units. While Kerala relies heavily on foreign remittance, the transition to a knowledge economy presents opportunities to diversify revenue streams. By channeling remittances towards productive investments in innovation, entrepreneurship, and infrastructure, Kerala aims at stimulating economic growth and reduce dependency on external inflows.

Several factors propel Kerala's transition into a knowledge economy. The state boasts a well-educated and skilled workforce, providing a solid foundation for knowledge-intensive activities. Additionally, Kerala's robust public education system and high literacy rates foster a culture conducive to learning and innovation. Moreover, the proliferation of digital technologies facilitates the dissemination of knowledge and enables participation in the global knowledge economy.

The state has thus embraced innovation as a key driver of economic growth. Innovation is also necessary to address second-generation problems of Kerala which include like high rate of educated unemployed, high social consciousness of environmental rights, ageing population, among others. The transition to a knowledge economy brings to the forefront the opportunity to address varied problems that are unique to Kerala. Challenges such as urban sprawl, social inequalities of the outliers and immigrants, complex micro regional issues demand integrated and innovative solutions. Transitioning Kerala's low value-added low diversification enterprise to high production high productivity requires knowledge input. The growth story of MSME's traced by Balagopoi (2022) emphasizes this. Transforming Kerala's economic base from the present low productivity regime to a high productivity knowledge economy holds immense promise for driving sustainable economic growth, fostering innovation, and improving living standards.

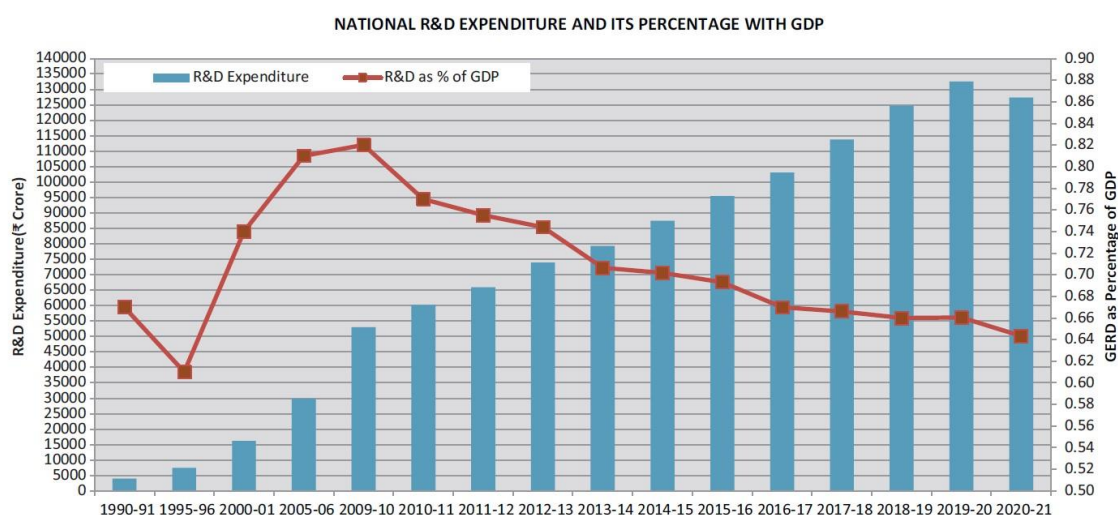
4.0 Research and Development: National, Subnational

4.1 National Trends

In a World Bank study Cirera and Maloney (2017) observed an 'Innovation Paradox in developing countries wherein they argued that notwithstanding the significant return from investment in R&D, developing countries in general invest substantially less in R&D when compared to their developed country counterparts. This is especially true of India. The Department of Science and Technology, Government of India, publishes a report titled "Research and Development Statistics at a Glance", on an annual basis which is the only authentic source of R&D in India. The report also publishes data on R&D by different actors as well as R&D by other countries.

As per the latest report published in 2022-23, India's gross expenditure on R&D (GERD) at current prices increased from Rs. 60,196.75 crore in 2010–11 to Rs. 127,380.96 crore in 2020–21. But in terms of R&D intensity (R&D as a proportion of GDP), the commonly used measure of R&D performance, it is rather surprising that India has been showing downward trend from 2009-10 onwards. It declined from 0.82% in 2009-10 to 0.64% in 2020-21. This needs an urgent trend reversal.

Figure 1: National R&D expenditure and R&D intensity (R&D as % of GDP)



Source: Department of Science and Technology, Research and Development Statistics at a Glance 2022-23.

R&D in India is mainly driven by the Central Government (43.7%), State Governments (6.7%), Higher Education (8.8%) and Public Sector Industry (4.4%) with Private Sector Industry contributing 36.4% during 2020–21.

Table 2: Share of Major Actors in R&D

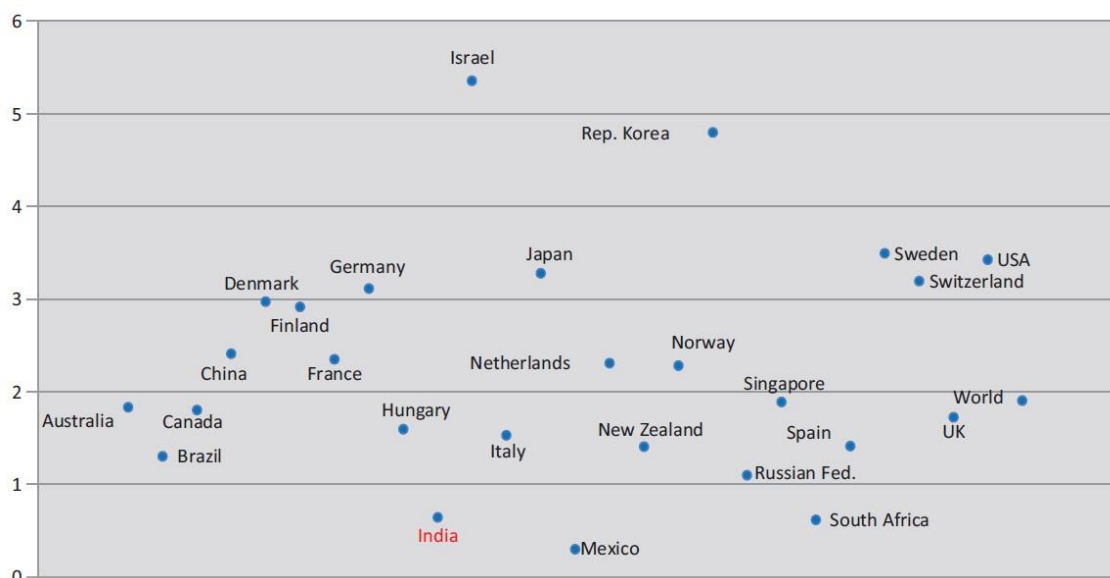
Central Government	43.7
Private Sector Industry	36.4
Higher Education Sector	8.8
State Sector	6.7
Public Sector Industry	4.4

Source: Same as Fig 1.

It may be instructive to compare the R&D performance on India with that of OECD and other emerging countries (See Fig 2). While India spent only about 0.64% of its GDP on R&D, the same amongst other emerging countries like Brazil (1.3%), Russian Federation (1.1%), China (2.4%), and South Africa (0.6%) is significantly higher than that of India. Most of the developed countries spent more than 2% of their Gross Domestic Product (GDP) on R&D. It is especially notable that during the early 1990s, the R&D intensity of

China was lower than that of India. But today, the R&D intensity of China is more than three times that of India (see Fig. 2)

Figure 2: R&D Expenditure as % of GDP for Selected Countries, 2020



Source: Department of Science and Technology, Research and Development Statistics at a Glance 2022-23.

4.2 R&D in Indian States

Regrettably, reliable State-level data on R&D is not available. What we make use of is the data published by the RBI. The RBI compiled this data based on the keyword search of the state-level budgets. The report prepared as per the request of the Principal Scientific Advisor to the Government of India, essentially reports the allocations in the budget heads of account wherein the term ‘Research’ has been mentioned to arrive at an estimate of state-wise R&D expenditure for the period from Accounts 2018-19 to BE 2020-21 (Table 3). Needless to say, such a method has its limits. Yet in the absence of other sources of data we consider it as a starting point for raising certain key issues for our consideration.

It is evident that the observed R&D intensity in 2018-19 for all the states was only 0.2%, which is way below the R&D intensity for India (0.64), but increased to 0.3% by 2020-21 (BE) recording an annual growth rate of 14%. This tends to suggest an increasing awareness among the states to invest in R&D and innovation. At the same time, we observe significant inter-state variation in the present level of R&D intensity across states, indicating the differential capability among the states to engage in such activities. According to this report, Kerala’s spending on research as a percentage of GSDP has been consistently at 0.3% of the GSDP.

Table 3: Expenditure on Research as % to Gross State Domestic Product

States	2018-19 Accounts (Rs Crore)	% to GSDP	2019-20 RE (Rs Crore)	% to GSDP	2020-21 BE (Rs Crore)	% to GSDP	Average Growth Rate
Andhra Pradesh	3303.20	0.40	1356.70	0.10	2187.00	0.20	1.1
Arunachal Pradesh	82.20	0.30	175.20	0.60	275.90	0.90	85.3
Assam	408.70	0.10	596.90	0.20	479.60	0.10	13.2
Bihar	2094.60	0.40	3382.00	0.60	3139.70	0.50	27.1
Chhattisgarh	517.90	0.20	1169.10	0.40	1087.30	0.30	59.4
Goa	244.60	0.30	374.90	0.50	580.30	0.70	54.0
Gujarat	2560.60	0.20	3160.00	0.20	3706.00	0.20	20.3
Haryana	1468.80	0.20	2061.70	0.20	2617.10	0.30	33.7
Himachal Pradesh	970.40	0.60	979.80	0.60	992.80	0.50	1.1
Jharkhand	860.90	0.30	622.70	0.20	802.20	0.20	0.6
Karnataka	3652.50	0.20	3504.80	0.20	3824.70	0.20	2.5
Kerala	2581.40	0.30	2527.70	0.30	2954.30	0.30	7.4
Madhya Pradesh	1652.60	0.20	1428.80	0.20	1503.50	0.20	-4.2
Maharashtra	3368.30	0.10	4333.70	0.20	4476.90	0.10	16.0
Manipur	32.20	0.10	272.60	0.90	207.80	0.60	361.4
Meghalaya	44.40	0.10	59.60	0.20	84.90	0.20	38.3
Mizoram	91.70	0.50	144.00	0.70	71.70	0.30	3.4
Nagaland	47.80	0.20	104.90	0.30	163.70	0.50	87.8
Odisha	1261.60	0.30	1361.70	0.30	1872.20	0.30	22.7
Punjab	709.10	0.10	772.90	0.10	1160.20	0.20	29.6
Rajasthan	293.30	0.00	310.60	0.00	342.70	0.00	8.1
Sikkim	66.80	0.20	44.50	0.10	54.80	0.10	-5.1
Tamil Nadu	2314.70	0.10	2968.50	0.20	4504.70	0.20	40.0
Telangana	911.60	0.10	801.30	0.10	938.30	0.10	2.5
Tripura	45.70	0.10	51.60	0.10	57.20	0.10	11.9
Uttar Pradesh	5087.70	0.30	7129.90	0.40	8028.30	0.40	26.4
Uttarakhand	639.80	0.30	713.90	0.30	876.40	0.30	17.2
West Bengal	2265.60	0.20	2146.70	0.20	2342.40	0.20	1.9
All States	37578.7	0.21	42556.7	0.22	49332.6	0.3	14.6

Source: Based on Reserve Bank of India (2021) Research and Development Expenditure of States and UTs,

4.3 Kerala R&D Budget

Indicative of the immense importance that Kerala provides to science technology and innovation for the development of the state, the Government of Kerala, for the first time in this country, prepared an R&D budget sequel to the Kerala budget 2023-24. The total R&D expenditure for the year 2023-24 was estimated at Rs 3482 crore which was about 0.31% of the GSDP for the year 2024-25 (BE). This estimate is found broadly in sync with the estimate provided by the RBI. The second edition of the R&D budget of Kerala was prepared for the year 2024-25. The total R&D expenditure by the Government of Kerala was estimated at Rs 3678 crore indicating a marginal decline in R&D intensity to 0.28% as compared to 0.31% during the previous year. The distribution of expenditure across different activities is presented in Table 4.

Table 4. R&D Expenditure in Kerala 2024 – 25 (BE) (Rs lakhs)

No.	Sector	Estimates of R&D expenditure	Share (%)
1	Medical Health Family Welfare and Sanitation	87104.55	23.68
2	Education R&D	170640.35	46.39
3	Labour Research	66.12	0.02
4	Infrastructure Research	6456.37	1.76
5	Agricultural Research	54095.94	14.71
6	Industrial Research	34443.35	9.36
7	Social Security and Welfare	3583.86	0.97
8	Welfare SC/ST	984.17	0.27
9	Environmental Research	1431.64	0.39
10	Housing and Urban Development	1282	0.35
11	Others	7138.92	1.94
12	Fiscal Research	624.52	0.17
	Total	367851.79	100.00

Source: Government of Kerala (2004), *Research and Development Budget 2024-25*, Finance Department.

In India, there is an urgent need to make the innovation system more vibrant at the national, sub-national (regional), and sectoral levels by strengthening the institutional architecture that facilitates learning, innovation, and competence-building systems at all levels. Here the role of States could be articulated at two different but interrelated levels. First, increased investment in R&D both by the state and private sector for the creation of scientific knowledge and promote the creation of synthetic knowledge generated at the instance of all the actors in the innovation system. Secondly, ensuring the effective use of both scientific and synthetic knowledge to facilitate innovation-driven development.

5.0 16th Finance Commission and Innovation-driven Development

In a context where India is aspiring to be a developed economy by 2047 and given the historical evidence of the role that science, technology, and innovation played in all the past development episodes across the world at the instance of entrepreneurs, we underline the need for increased spending on R&D, innovation, and start-ups in India. This is especially because R&D intensity in India at present is only 0.64% which compares very poorly with the emerging economies and OECD countries. More importantly, R&D intensity has been showing a downward trend since 2009-10.

In achieving innovation-driven development, we envisage a greater role for the state governments. However, as already noted the state-level R&D activity needs much improvement given the very low level of state-level R&D intensity which is only 0.3% of the GSDP in 2021-22 (BE). At this juncture for the aspiring India, we make the case for raising the present state-level R&D intensity to at least 0.6% of the GSDP in the terminal year of the 16th Finance Commission award, 2030-31.

Since many of the innovations in one state may be of relevance in addressing developmental issues in other states, knowledge, and innovation-driven development strategy could be construed as the most appropriate means of fostering cooperative federalism by encouraging collaboration between states. Viewed in this perspective the allocation for states could also be performance-based where higher allocation may be considered for projects involving horizontal collaboration (between states) wherein knowledge and innovation are shared between states.

The key question is how to accomplish this. Apart from the distribution of the net proceeds of taxes from the union to the states, the constitutionally entrusted core function of the Finance Commission is to determine the principles that should govern grants-in-aid, assess the needs of states in relation to such norms developed and applied to both revenue effort and desirable levels of expenditure and thereafter recommend grants in specific sums.

Given the reduced size of the divisible pool on account of the growing share of cess and surcharges, as observed by the 15th Finance Commission and scholars of eminence, it is not advisable to make any allocation from the divisible pool. A case, however, has been made for a) increasing the size of the grants in aid and b) investment in innovation (both in STI and DUI mode) as an important criterion for the distribution of grants in aid among the states to ensure that the state level R&D is raised at least to the level suggested above (0.6% of the GSDP).

Table 5: Estimates of Grants in Aid for R&D and Innovation for the States during the 16th Finance Commission Period

Year	2026-27	2027-28	2028-29	2029-30	2030-31	16 th FC Period
GDP (Rs Crores)	39767340	44141748	48997340	54387047	60369623	
Targeted R&D intensity (% of GDP)	0.4	0.43	0.47	0.5	0.6	0.48
Targeted contribution by States (% of GSDP)	0.31	0.33	0.36	0.39	0.45	0.37
Expected Grant in Aid from 16th FC (% of GDP)	0.09	0.1	0.11	0.11	0.15	
Grant in Aid from 16th FC for all the states (Rs Crore)	35790	44141	53897	59826	90554	284209

Source: Own estimates.

Our preliminary estimate regarding grants in aid for innovation and start-up is presented in Table 5 wherein the following assumptions are made. First, the GSDP of states in general will grow at the rate of at least 11 percent per annum at current prices. Secondly, the R&D intensity at the state level will be gradually increased to reach a level of 0.6% during the terminal year of the 16th Finance Commission. The state level' own R&D intensity would increase by 0.03% annually to reach about 0.45% by 2030-31. Given this scenario, the expected contribution from the Finance Commission to achieve the above level of R&D intensity would be about 0.09% of the GSDP in the initial year and 0.15%

in the terminal year. The total grants in aid for the state-level R&D from the 16th Finance Commission during the entire period is estimated Rs 2.841 Lakh Crore.

5.1 Grants in Aid for R&D and Start-up in Kerala

We hasten to add that given the difference in the initial endowments, the states are not equally positioned to invest in innovation and entrepreneurship. Accordingly, the Finance Commission needs to prioritize states having higher levels of capability so that the initial returns to such investments are maximized. Viewed in this perspective, the R&D intensity at the level for certain states like Kerala may be fixed at a higher level than the all-state average.

Table 6: Estimates for Grant in Aid for R&D and Innovation for Kerala (Rs Crore)

Year	2026-27	2027-28	2028-29	2029-30	2030-31	16 th FC Period
Kerala's Expected GSDP	1630378	1809719	2008788	2229755	2475028	
Targeted R&D intensity (% of GSDP)	0.48	0.56	0.63	0.69	0.75	0.62
Targeted Contribution by Kerala (% of GSDP)	0.35	0.43	0.5	0.57	0.6	0.49
Expected Grant in Aid from 16th FC (% of GDP)	0.13	0.13	0.13	0.12	0.15	
Amount expected from 16th FC for Kerala (Rs Crore)	2119.49	2352.64	2611.43	2675.71	3712.54	13471.81
Total Expected FC grant for R&D all states	35790.6	44141.7	53897.1	59825.8	90554.4	284209.6
Share of Kerala in total R&D Grant (%)	6.0	5.4	4.9	4.5	4.1	4.70

Source: Own estimates

In arriving at the grants in aid for Kerala we assume a GSDP growth rate of 12% per annum at current prices and increasing R&D intensity to 0.75% during the terminal year of the 16th Finance Commission. Assuming also that the state's own R&D intensity will be gradually increased to 0.6% of GSDP during the terminal year, the required grants in aid have been estimated at 0.15% of the GSDP (see Table 6). For Kerala total grants in aid for the five years is estimated at Rs 13471.8 Crore, which is about 4.8% of the total grants in aid to be given to all the states.

It is also to be noted that during the initial year Kerala, with 4.7% of the national GDP, would account for 6.0% of the total Finance Commission support for R&D. Kerala's share is expected to decline to 4.1% in the terminal year. The implicit assumption in the above estimate is that since Kerala is shown to have a higher capability to invest in innovation and start-ups, the return on such investment would be higher in the short run. As the lagging states build up capability, their share would gradually increase with a corresponding decline in the share of Kerala and other similarly positioned states.

Although the role of informal sector is often acknowledged as a source of income and employment, their role in creating grassroot innovations, is yet to be a recognised. It

appears to be the case even in Kerala, where the local self-governments receive almost 25% of the plan funds and often perceived as a model of democratic decentralisation. It is surprising that a large number of grassroots innovators, who were honoured by national awards, hardly received any support from the local self-governments. This needs to be compared with the context in China, wherein the grassroots innovators, farmers, farmer groups and artisans for example could apply for “research” support from their local bodies. In this context, 16th Finance Commission would do well if a part of the grants in aid for the local self-governments is provided for fostering the local innovative capabilities of the people at the grassroots.

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Restructuring India's Fiscal Policy Towards 'Sound Finance'²⁰

Abstract

The 16th FC, while not solely focused on fiscal sustainability or restructuring, must consider these aspects when addressing fiscal imbalances-vertical and horizontal. Article 280(d) of the Indian Constitution mandates considering 'sound finance,' crucial given India's current debt-deficit situation. We aim to restructure deficit targets for the Union and states by analysing public debt sustainability and growth implications. We propose that fiscal rules should be based on fiscal sustainability, economic growth, and macroeconomic stability, with targets derived from sustainable debt levels and growth profiles. Flexible fiscal rules should be established for states based on their sustainability and growth performance. Using a stochastic IBC approach and a public debt-growth framework (1991-2023), we find the current debt-deficit positions at all levels unsustainable. To achieve sustainability, general government debt should be reduced to 70.38%, with 46.65% for the Union and 23.74% for states (average) and for Kerala, the sustainable debt threshold is determined to be 27.8% achievable within 10 years under state FRBM targets. Our estimate suggests that, on average, if governments at all levels maintain a 3% deficit and 12% nominal growth, they will be able to reach a sustainable position within a maximum of 10-year period. If a states like Kerala with liquidity crisis requires a push through a 0.5% to 1% relaxation in the fiscal deficit target, the Finance Commission may recommend this adjustment. This approach ensures that, some years in the future, the deficit target can be worked out to be below 3%, while maintaining an overall deficit target of 3% for the 10-year threshold attainment period. Further by examining, three crucial fiscal indicators -the debt servicing to debt receipts ratio, the capital expenditure to fiscal deficit ratio, and the proportion of off-budget borrowing to total borrowing- we can avoid unsustainable borrowing, boost public investment and economic growth, and integrate budget and off-budget borrowing. If the latter two indicators ensure an optimal public investment and economic growth in the country, they justify a corresponding relaxation in deficit targets.

²⁰ Prepared by Dr P S Renjith, Assistant Professor, GIFT

1. Introduction

India, despite its federal structure, displays unitary characteristics in Centre-state relations, marked by vertical asymmetry in revenue-expenditure balances (Rao, 2000). The constitution grants higher revenue powers to the central government, shifting the burden of expenditure primarily onto state governments. States cover about 60% of general government expenditure but possess only about one-third of general government revenue powers (RBI, 2020). This fiscal disparity forces states into continuous borrowing choices, even after intergovernmental transfers, resulting in rising public debt levels for states (Renjith and Shanmugam, 2018).

Governments, whether at the national or subnational level, often employ fiscal stimuli, frequently financed through increased borrowing, for two primary reasons. Firstly, to act counter-cyclically and alleviate the adverse effects of economic fluctuations, aligning with the Keynesian approach, which asserts that governments must play an active role in stabilizing market economies. Secondly, for political reasons, driven by the government's aspiration to expand its activities. The former aims to address economic cycles, while the latter is influenced by political cycles, often linked to election timing (Srivastava, 2012). Trends in public debt relative to GDP since independence highlight the cyclical nature of the former and the sustained upward trend of the latter (Rangarajan and Srivastava, 2005).

In the late 1990s, budget deficits and public debt surged, exceeding GDP growth rates, both at the national and subnational levels. To address this, the central government introduced a rule-based fiscal framework, Fiscal Responsibility and Budget Management Act in 2003, guided by a balance of saving and investment formula (Chapter 3 of the 12th Finance Commission (FC) report). The 12th FC recommended that each state enact Fiscal Responsibility Legislations (FRLs) to eliminate revenue deficits by 2008-09 and reduce fiscal deficits to 3% of Gross State Domestic Product (GSDP), aiming to systematically reduce borrowings. Adoption of these FRLs was mandatory for states to access the Debt Consolidation and Relief Facility (DCRF), offering state-specific grants and debt relief measures as outlined by the 12th FC.²¹

The implementation of Fiscal Responsibility Legislations (FRL) initially aimed to enforce fiscal discipline in states but had significant impacts on their public interventions. While the central government often exceeded FRL limits (except in 2007-08), some state governments followed suit and breached the limits as well. This led to expenditure cuts on productive investments, realignment of priorities, and increased borrowing to sustain operations within the deficit limit. Within the constrained budget environment, the latter set of states faced severe fiscal stress in expenditure management. However, their policy choices and actions played a pivotal role in supporting continued public interventions, holding the potential for long-term sustainability and economic growth (Steffy and Renjith, 2024).

Recognizing the debt-deficit situation of the central and state governments over time, as well as the fiscal choices made by the states and the necessity for fiscal discipline to

²¹ All states were required to enact FRLs to qualify for the DCRF, without individual state-level justifications.

ensure macroeconomic stability, successive finance commissions up to the 15th have offered their own suggestions and recommendations for maintaining sound finances at both the central and state levels. Notably, Clause 4 of Article 280 (specifically 280(d)) of the Indian Constitution mandates that the Finance Commission consider the "interests of sound finance." Realizing the debt-deficit situation of the centre and states over a period, fiscal choices of the states, and the need for fiscal discipline for macroeconomic stability, the successive finance commissions till 15th provided their own suggestions and recommendations for sound finance of the Centre and states. Notably, the clause 4 of Article 280 (i.e., 280(d)) of the Indian Constitution specifically requires the Finance Commission to consider the 'interests of sound finance'.

Against this backdrop, it is now the 16th Finance Commission's responsibility to consider Clause 4, given the current debt-deficit situation of both the Government of India and the states, along with the other three clauses. However, the Terms of Reference (TOR) of the 16th Finance Commission do not specifically focus on fiscal sustainability or fiscal restructuring for sound finance. Nonetheless, these aspects cannot be overlooked when addressing vertical and horizontal imbalances. Therefore, this study attempts to workout strategy to restructure the deficit targets for the Union, all states collectively, and individual states, analysing the sustainability and growth implications of public debt. The primary contention of this study is that fiscal rules should be reframed based on fiscal sustainability, growth implications of public debt, and macroeconomic stability due to fiscal indicators. Fiscal targets should evolve primarily from sustainable debt targets and the growth profiles of both the Union and the states, rather than other exogenous factors. Also, within all states, flexible fiscal rules should be established based on the sustainability position and growth performance of each state.

By employing a stochastic Intertemporal Budget Constraint approach and a public debt-growth framework from 1991-92 to 2022-23, we assess whether the debt-deficit positions of both the Union and the states (collectively and individually for three specific states) are sustainable using Bohn's model-based framework (Bohn, 1998). We then determine the threshold level of debt beyond which it becomes detrimental to the economy using a threshold regression model. Once this threshold is identified, we proceed with a simulation exercise, considering the threshold debt level, existing deficit targets, and average growth levels. We also conduct the same exercise with flexible target levels and higher growth to inform appropriate government policy actions for long-term sustainability.

Further, we examine three significant fiscal indicators that can affect the future fiscal trajectory without compromising the fiscal autonomy and fiscal space of both the Union and the states: the debt servicing to debt receipts ratio, the capital expenditure to fiscal deficit ratio, and the proportion of off-budget borrowing to total borrowing. The target for the debt servicing to debt receipts ratio is set to avoid a Ponzi scheme scenario, where continuous borrowing is required to service existing debt, leading to unsustainable debt positions. The target for the capital expenditure to fiscal deficit ratio aims to ensure increased gross investment, enhancing public investment and crowding in private investment, thereby fostering growth at both levels. Moreover, the merger of the budget and off-budget borrowing should apply to both the central government and the states. If off-budget borrowing is directed towards productive public sector investments, there

should be a corresponding relaxation of the deficit targets for both the Union and the states.

The remainder of the study is organized as follows: Section 2 presents the debt-deficit positions of the Union, All States, Combined and the special case of Kerala. In Section 3, we conduct the sustainability analysis at three levels and identify the debt threshold for each level. While section 4 discusses the simulation exercises performed at different levels, Section 5 presents different strategies aimed at controlling debt and achieving sustainable level. Finally, Section 5 concludes the study.

2. Fiscal Scenario: Union, All States, Combined and Kerala

The Indian Constitution (1950) originally established a two-tier federal system: the Union and the states, each with separate tax powers and expenditure functions. Most buoyant taxes are assigned to the Union, while states have more extensive expenditure responsibilities. However, states generate less than half of their financial needs from their own resources. To address this, the Constitution provides for tax devolution (Articles 270 and 272) and grants-in-aid (Article 275). When state expenditures exceed revenues, deficit financing through borrowing is permitted (Article 293), similar to the Union government.

Among the current 28 Indian states, the fiscal policy stance relies on factors such as revenue mobilization capacity, expenditure rationalization, discretionary transfer provisions, permissible deficit levels, borrowing options, and effective debt management strategies. Revenue mobilization is the starting point, with states generating their own revenues from restricted tax, non-tax, and non-debt capital receipts, unlike the Union. While revenue indicators may be consistent, the base, capacity, and efforts vary across states. The adoption of the Goods and Services Tax (GST) in 2017, the most significant indirect tax reform since independence, has sparked policy discussions about the states' revenue generation capabilities due to their further surrender of taxing powers (Renjith, 2023).

Both the Union and state governments borrow when expenses exceed revenues. They use three types of deficits: revenue deficit, fiscal deficit, and primary deficit. Fiscal deficit is the excess of total expenditures over total receipts (excluding debt receipts). Revenue deficit is the difference between revenue expenditures and revenue receipts, while primary deficit is the fiscal deficit minus interest payments. Fiscal Deficit deficits indicate the financial health and borrowing needs of the governments, leading to public debt. The Indian Constitution assigns different borrowing powers to the central and state governments. Central government debt includes domestic and external debt, and public account liabilities such as NSSF and provident funds. State governments can only borrow from the domestic market and the central government, with no power to raise loans abroad except for externally aided projects through the central government. State public account debt includes small savings, provident funds, and various reserves and deposits. State debt is classified into internal debt, loans and advances from the central government, and public account liabilities, including market loans, loans from financial institutions, and Ways and Means Advances (WMA) from the RBI.

Governments expand their activities beyond trend levels for two main reasons: to minimize the impact or volatility of growth cycles and to finance political agendas (Srivastava, 2012). Trends in the primary deficit relative to GDP and public debt relative to GDP since Independence show the cyclical nature of the former and the secular upward trend of the latter (Rangarajan & Srivastava, 2005). Since the late 1990s, there has been a sharp deterioration in the debt-deficit situation for both the Union and the states. To reduce debt to sustainable levels, the Union adopted a rule-based fiscal framework (FRBM) in 2003, and most states enacted FRBM rules in 2005, alongside other fiscal consolidation measures, with some initial success. However, fiscal consolidation was reversed after the 2008-09 global financial crisis. The situation worsened with the COVID-19 pandemic. Currently, the fiscal deficits for the Union, states, and combined register at 6.44%, 3.39%, and 9.58%, respectively (Table 1).

The debt-GDP ratio (2011-12 series) for the Union and states in India deteriorated since the mid-1990s due to revenue losses from customs and excise duty reforms, poor tax performance, low tax buoyancy, and increased government spending, particularly from the fifth pay commission's recommendations. Consequently, the Union's debt-GDP ratio peaked at 62.59% and the states' at 32.34% in 2003-04. Following the implementation of various fiscal measures, including the FRBM Act in 2003, the debt-GDP ratios began to decline. By 2014-15, the Union's debt-GDP ratio had fallen to 50.07%, and the states' to 21.69%. The Union's ratio continued to decline to 48.06% by 2018-19, while the states' ratio increased to 25.33%. The COVID-19 pandemic exacerbated the situation, pushing the Union's debt-GDP ratio to 61.00% and the states' to 29.5% by 2022-23. The combined debt-GDP ratio, closely following the Union's trend, reached 81.7% in 2022-23 (Table 1 - Panel 2).

Table 1: Union, All States, Combined and Kerala Fiscal Deficits and Debt Ratios during the FRBM Period (2003–04 to 2022-23)

Year	Fiscal Deficit to GDP/GSDP Ratio				Debt to GDP/GSDP Ratio			
	Union	All States	Combined	Kerala	Union	All States	Combined	Kerala
2003-04	-4.41	-4.32	-8.30	-4.6	66.0	31.8	85.9	32.2
2004-05	-3.95	-3.38	-7.20	-3.2	65.5	31.3	84.9	31.5
2005-06	-4.03	-2.48	-6.50	-2.6	63.9	31.1	82.4	30.0
2006-07	-3.35	-1.82	-5.10	-2.1	61.4	28.9	77.9	29.1
2007-08	-2.59	-1.54	-4.00	-3.0	58.9	26.6	75.5	28.5
2008-09	-6.11	-2.44	-8.30	-2.7	58.6	26.1	74.4	28.0
2009-10	-6.57	-2.97	-9.30	-2.9	56.3	25.5	72.8	27.5
2010-11	-4.89	-2.11	-6.90	-2.5	52.2	23.5	67.7	26.8
2011-12	-5.91	-1.93	-7.84	-3.5	53.5	22.8	68.6	25.6
2012-13	-4.93	-1.97	-6.88	-3.6	52.6	22.2	68.0	26.3
2013-14	-4.48	-2.21	-6.67	-3.6	52.2	22.0	67.7	26.7
2014-15	-4.10	-2.62	-6.71	-3.6	51.4	21.7	67.1	27.7
2015-16	-3.87	-3.05	-6.92	-3.2	51.5	23.4	69.0	28.6
2016-17	-3.48	-3.47	-6.93	-4.2	49.5	24.8	68.9	29.9
2017-18	-3.46	-2.40	-5.83	-3.8	49.5	25.1	69.7	30.6
2018-19	-3.44	-2.45	-5.80	-3.4	49.6	25.3	70.4	30.7
2019-20	-4.64	-2.61	-7.22	-2.9	52.7	26.7	75.0	32.6
2020-21	-9.17	-4.06	-13.10	-5.3	62.8	31.0	88.4	40.0
2021-22	-6.75	-3.76	-9.45	-4.9	60.2	29.0	83.5	38.3
2022-23	-6.44	-3.39	-9.58	-3.6	61.0	29.5	81.7	36.7

Source (Basic Data): GDP & GSDP-National Statistical Office, Ministry of Statistics and Programme Implementation , GOI; Fiscal Deficit and Debt (Union All States & Combined)-RBI; Combined data includes union and all states, adjusted by subtracting loans from union to the states.

Debt-Deficit Position at Individual State level: The case of Kerala

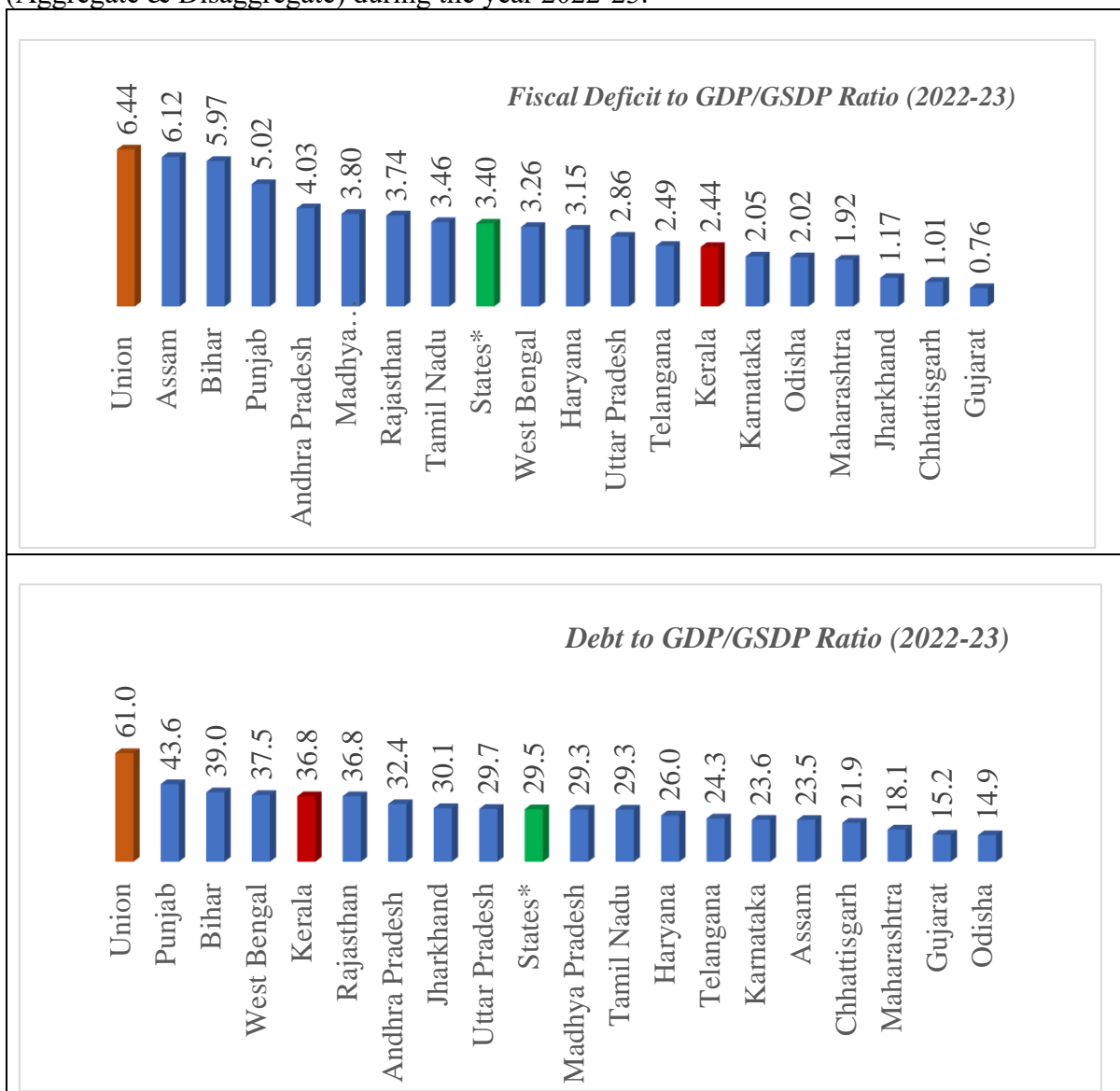
The individual state-level differences in the debt-deficit position are not solely due to common factors inducing trends but also stem from structural disparities, cost disabilities, revenue generation capacities, the level of productive spending, transfer incentives, and political dimensions. Acknowledging these differences, we further examine the dynamics of debt-deficit for Kerala as a case study, as the state's recent attention from national agencies like RBI, CAG regarding its fiscal situation.

Kerala's fiscal choices and financial strategies have attracted significant attention due to its distinctive characteristics recognized by scholars. The state consistently ranks highly across 13 indicators evaluated by national and international bodies, boasting exemplary social infrastructure and outshining India in HDI rankings. Despite shouldering over 62% of the COVID burden at its peak, Kerala still leads in Sustainable Development Goals (SDGs), social protection, and the Happiness Index. Global acclaim has followed Kerala's success in safeguarding lives and livelihoods, even extending protection to migrant workers.

However, Kerala's impressive developmental achievements have been accompanied by fiscal challenges, leading to its classification as one of the three fiscally unsound states by the 13th Finance Commission in 2012 and one of the most fiscally stressed states by the Reserve Bank of India (RBI) in 2022. The state's current public debt stems from past interventions and is compounded by second-generational challenges like migration, sectoral imbalances, educated unemployment, labor underutilization, social inequality, and aging. Despite facing limited fiscal space, Kerala has actively intervened in human development and welfare, aiming for a long-term impact on sustainability and economic growth. Yet, as the central government imposes further restrictions and the state responds with a legal suit (The State of Kerala vs. Union of India: Original Suit No. 01/2024: IA No. 6149/2024), the sustainability of Kerala's development model remains under scrutiny.

The fiscal deficit position of the state was 4.1 percent in 2003-04, decreased to under the target of 3% in 2010-11 with the introduction of the Fiscal Responsibility and Budget Management Act (FRBM), but persisted above 3% since then. As of March 2023, the deficit position is 3.6%. Notably, except for the pandemic-impacted period of 2021-22, Kerala consistently maintained a debt-to-GSDP ratio surpassing the 25% threshold due to its deliberate focus on directing investments towards social infrastructure. However, it's worth noting that the upsurge in the debt-GSDP ratio during the pandemic (Around 40%) primarily stems from the denominator effect – a decline in GSDP – rather than signifying inherent fiscal mismanagement (Table 1).

Figure 1: Fiscal Deficit and Public Debt to GDP/GSDP Position of the Union and States (Aggregate & Disaggregate) during the year 2022-23.



Source (Basic Data) : Fiscal Deficit and Debt - CAG & Budget documents (various years) of respective states

Figure 1 illustrates the fiscal deficit and debt positions have varied across states. In 2022-23, Assam (6.12%) registered the highest fiscal deficit to GSDP ratio, followed by Bihar (6.12%) and Punjab (5.97%), while Gujarat recorded the lowest at 0.76%. In terms of debt to GSDP position, Punjab registered the highest at 43.6%, followed by Bihar (39.0%) and West Bengal (37.5%), while Odisha registered the lowest at 14.9%. Notably, Kerala has shown a significant improvement in its debt-deficit, with a fiscal deficit of 2.44% and outstanding liabilities of 36.8%.

3. The Question of Sustainability & Threshold

Fiscal sustainability is a critical issue not only for national governments but also for sub-national governments. It involves ensuring that debt levels do not accumulate at a rate that exceeds the government's capacity to service it (Renjith & Shanmugam, 2018). Unsustainable debt can disrupt economic activity and necessitate a shift in economic priorities. Several studies have emerged in the literature to test sustainability. Earlier studies predominantly applied the Domar (1944) condition, which derives three conditions from the basic debt accumulation equation:

$$d_t = p_t + d_{t-1}[(1 + i_t)/(1 + g_t)] \quad (1)$$

where, d_t is the debt-GDP ratio in period t ; g is the nominal economic growth rate; i is the nominal interest rate; p is the primary deficit relative to GDP in period t ; and the conditions are $g_t = i_t$, $g_t < i_t$ and $g_t > i_t$. Fiscal policy is unsustainable when $g_t = i_t$ or $g_t < i_t$, because d_t grows linearly when $g_t = i_t$ and explosively when $g_t < i_t$. Debt is sustainable when $g_t > i_t$. This approach was extended later by considering the inter-temporal budget constraint (IBC) of the Government (i.e., outstanding debt today must be equal to the current value of future primary surpluses) and also additional indicators (growth, liquidity, creditworthiness, fiscal burden, fiscal space, etc.) and renamed as “Indicator approach” (Shanmugam and Renjith 2023).²² However, this approach was criticized as it applied the condition on a year-to-year basis and does not validate whether IBC of the Government is satisfied or not.

After the seminal contribution of Hamilton and Flavin (1986), a series of empirical studies emerged testing debt sustainability using time series approaches, such as unit root and cointegration methods. The unit root approach examines whether the public debt series (in the US) is stationary (i.e., whether the series of public debt contains a bubble term), a method later widely used to investigate the mean-reversal process of debt series (Uctum and Wickens, 2000). If the revenue and expenditure patterns, or the deficit and debt-to-GSDP ratio, are found to be cointegrated, then they are considered sustainable (Trehan and Walsh, 2002; Hakkio and Rush, 1992). [Refer to Afonso (2005) for a brief survey of studies employing these procedures]

Later, the statistical properties of these studies were criticized by subsequent studies (2007). Bohn (1998) proposed a model-based approach, from Barro (1976)'s tax smoothing hypothesis²³ and stochastic framework, to test whether the primary surplus-GDP ratio (s_t) is positively and at least linearly related to the debt-GDP ratio (d_t):

²² The IBC is $d_t^* = \sum_{j=1}^{\infty} \frac{1}{(1+r)^j} E_t [s_{t+j}]$, where $d_t^* = (1 + r_t) \cdot d_{t-1}$ is the stock of the debt-output ratio in the beginning of period t , $E_t [.]$ denotes the expectation operator conditional on the information available at time t , and s_t is the primary surplus-GDP ratio. The IBC of the Government requires that the present value of public debt asymptotically converges to zero, and the interest rate r is resorted to in order to discount the stream of public debt, and this plays an important role.

²³ According to tax smoothing hypothesis, public deficits should be used in order to keep tax rates constant which minimises the excess burden of taxation. Hence, normal expenditure can be financed by regular revenues, and deficits will be incurred to finance unexpected spending.

$$s_t = \alpha + \psi d_t + \varepsilon_t \quad (2)$$

if $\psi > 0$ and statistically significant, debt is sustainable, which means that the initial stock of debt is equal to the sum of the present discounted values of the primary surpluses. The IBC is satisfied if the discounted sum of end-period debt converges to zero. The positive reaction coefficient, ψ ensures this convergence. The Bohn (1998) model, also called fiscal policy response model, has received increased attention among researchers due to its economic intuitiveness and robust statistical properties (Shanmugam and Renjith, 2023). Several studies have been conducted to test sustainability using Bohn model, also referred to as the fiscal policy response model (Abiad and Ostry (2005); Fincke and D'Erosmo et al., 2016).

Recent developments in this area focus on identifying the sustainability threshold. Fiscal fatigue occurs when public debt reaches a certain threshold, and if the primary balance does not adjust accordingly, the debt departs from this threshold value (Shanmugam and Renjith, 2023). The recent development in this regard is to identify the sustainability threshold. Fiscal fatigue happens when public debt achieves some threshold and departs from this threshold value when the primary balance does not adjust to debt (Shanmugam and Renjith, 2023).

Employing discrete Fiscal Policy Response Model and threshold regression model and, we established debt sustainability and debt threshold for different levels of governments. Our findings indicate that current debt-deficit positions of both the Union and the states are unsustainable. To achieve sustainability, the general government debt levels need to be reduced to a threshold of 70.38% of which 46.65% for the Union and 23.74% for the states, maintaining the existing FRBM targets for fiscal deficit of 3% and an average (10 year) nominal GDP growth of 10.9%. At the state level, we calculated the sustainable debt thresholds for Kerala, as 27.8% (Table 2).

Table 2: Debt Sustainability and Debt Threshold at Different Levels

Government	ψ	Sustainable?	<i>Threshold Value</i>
General	0.194 (1.032)	No	70.38%
Union	0.0238 (1.535)	No	46.65%
All States	0.0217 (0.690)	No	23.74%
Kerala	0.0413 (0.828)	No	27.80%

4. Simulation Model Examining the Period of Attaining the Debt Threshold Target

The above analyses clearly indicate that the current levels debt of Centre and all States are unsustainable and they are significantly higher than the debt sustainability threshold level of 40 (≈ 39.4) percent and 22 percent respectively. These levels are growth reducing. There is a greater need to cut down its debt ratio by about one third in both cases. This section examines whether the Centre and all States will attain the sustainable level of debt

²⁴ See Shanmugam and Renjith (2022) for the details

or not and if when they will reach? For this purpose, it employs the following debt dynamic equation given in (1) above:

$$d_t = f_t + d_{t-1} \left[\frac{1}{(1+g)} \right]$$

In this equation, the debt-GDP ratio (d_t) at the end of a fiscal year depends on (i) fiscal deficit-GDP ratio (f_t), (ii) last year debt-GDP ratio (d_{t-1}) and (iii) nominal growth rate (g_t). Subtracting d_{t-1} on both sides, we get:

$$d_t - d_{t-1} = f_t + d_{t-1} \left[\frac{1}{(1+g)} \right] - d_{t-1} = f_t - d_{t-1} \left[\frac{g}{(1+g)} \right] \quad (5)$$

The left side is the change in debt-debt ratio between two successive years (i.e., between year t and previous year $t-1$). Using this standard debt dynamic formula, we simulate debt-GDP level in future period, given assumptions on f_t and g_t and previous year debt (d_{t-1}) with different assumptions on these three components to see when the Union, all States and Kerala, will achieve the sustainable level of debt? Table 3 demonstrates when different governments are projected to reach their respective sustainability threshold positions under the current fiscal deficit target of 3% and an average nominal growth of 12%.

On average, if governments at all levels maintain a 3% deficit and 12% nominal growth, they will be able to reach a sustainable position within a maximum of 10-year period. If a state requires a push through a 0.5% relaxation in the fiscal deficit, the Finance Commission may recommend this adjustment. This approach ensures that, in the future, the deficit target can be worked out to be below 3%, while maintaining an overall deficit target of 3% for the 10-year threshold attainment period.

Table 3: Simulation Results to achieve the Sustainable Debt-GSDP ratio

Government	Current Debt-GDP Ratio	Sustainability Threshold (%)	Fiscal Deficit	Current Growth	Required Growth	Estimated Year to reach the Threshold
General	81.7%	70.38%	3%	9.6%	12%	2032-33
Union	61.0%	46.65%	3%		12%	2031-32
All States	29.5%	23.74%	3%		12%	2034-35
Kerala	36.7%	27.80%	3%	11.95%	12%	2032-33

5. Strategies to Control Debt and Reach a Sustainable Level

This study examines three other significant fiscal indicators, without compromising the fiscal autonomy and fiscal space of both the Union and the states: the debt servicing to debt receipts ratio, the capital expenditure to fiscal deficit ratio, and the proportion of off-budget borrowing to total borrowing. The target for the Debt Service to Debt Receipts ratio is set to avoid a Ponzi scheme scenario, wherein borrowing is repeatedly done to service existing debt, leading to an unsustainable debt position. The target for the Capital

Expenditure to Fiscal Deficit ratio aims to ensure increased gross investment, which directly enhances public investment and has a crowding-in effect on private investment, thereby fostering growth at both levels. Furthermore, the merger of the budget and off-budget borrowing should apply to both the central government and the states. If the off-budget borrowing is directed towards productive public sector investments, then there should be a corresponding relaxation for the deficit target of the union and states.

The Figure 2 illustrates the average capital expenditure to fiscal deficit (CE to FD) ratio for 20 major states from 2011-12 to 2021-22. This ratio indicates the proportion of capital expenditure financed by net borrowings. Kerala and Punjab is among the states with the lowest ratio, suggesting that a significant portion of its borrowings is allocated to unproductive expenditures. Allocating deficit funds to unproductive expenditures is costly due to higher servicing costs compared to returns. This low ratio may result from a reliance on off-budget borrowings to meet capital spending needs.

Figure 2: Capital Expenditure of Fiscal Deficit Ratio of Indian States

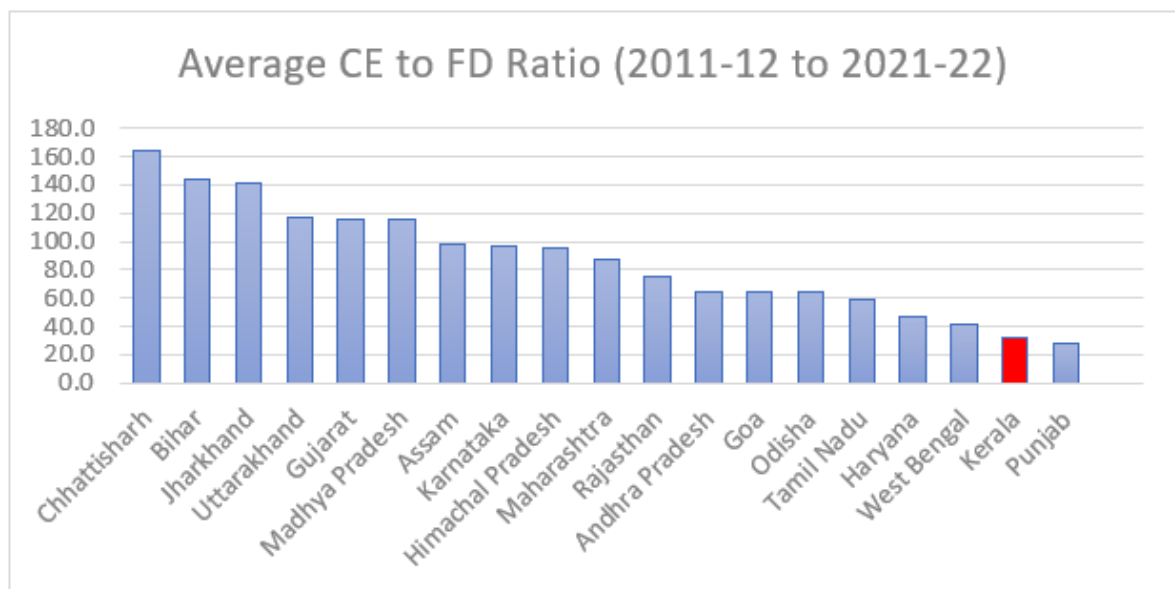
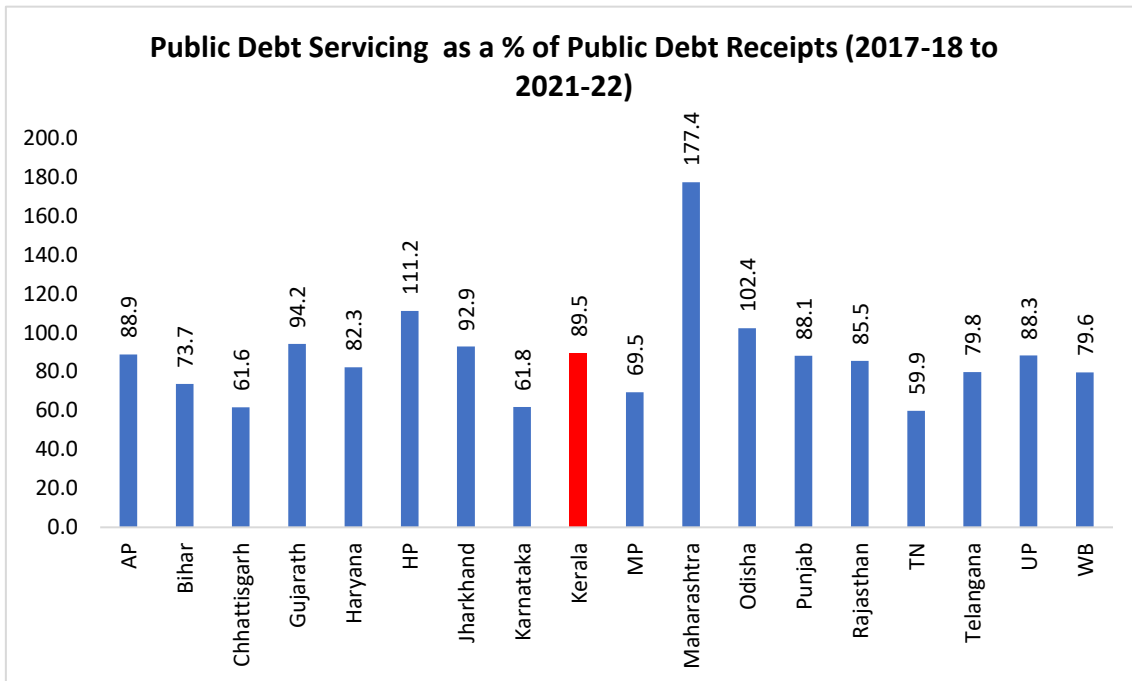


Figure 3 shows the state wise share of debt servicing to debt receipts in India from 2017-18 to 2021-22 shows that Kerala's debt servicing ratios have been high, averaging 89.5% from 2017-18 to 2021-22, indicating significant fiscal pressure, in the case of Himachal Pradesh and Maharashtra exhibit notably high averages, 111.2% and 177.4% respectively, indicating that these states frequently use more than their total debt receipts for servicing existing debt. In contrast, Karnataka, Tamil Nadu, and Telangana maintain more sustainable debt servicing practices with averages of 61.8%, 59.9%, and 79.8%, respectively. These states demonstrate relatively better fiscal health and greater capacity to invest in developmental activities. Bihar shows an improvement trend, reducing its debt servicing ratio from 104.1% in 2017-18 to 55.8% in 2021-22, indicating better fiscal management over time.



6. Concluding Remarks

This study finds the current debt-deficit positions at all levels unsustainable. To achieve sustainability, general government debt should be reduced to 70.38%, with 46.65% for the Union and 23.74% for states (average) and for Kerala, the sustainable debt threshold is determined to be 27.8%. Our estimate suggests that, on average, if governments at all levels maintain a 3% deficit and 12% nominal growth, they will be able to reach a sustainable position within a maximum of 10-year period. If a states like Kerala with liquidity crisis requires a push through a 0.5% to 1% relaxation in the fiscal deficit target, the Finance Commission may recommend this adjustment. This approach ensures that, some years in the future, the deficit target can be worked out to be below 3%, while maintaining an overall deficit target of 3% for the 10-year threshold attainment period. Further by examining, three crucial fiscal indicators -the debt servicing to debt receipts ratio, the capital expenditure to fiscal deficit ratio, and the proportion of off-budget borrowing to total borrowing- we can avoid unsustainable borrowing, boost public investment and economic growth, and integrate budget and off-budget borrowing. If the latter two indicators ensure an optimal public investment and economic growth in the country, they justify a corresponding relaxation in deficit targets. Further, the 16th Finance Commission should consider revisiting fiscal targets flexibility along with others debt management strategies. It can introduce a swap scheme to convert high-interest loans to low-interest ones. Old loans can be reissued as new loans with longer maturity periods to reduce debt servicing and avoid a Ponzi scheme scenario.

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1. Introduction

The Goods and Services Tax (GST), a landmark reform introduced post-independence, has profoundly impacted fiscal federal relations in India. By centralizing key taxation powers, the reform has required states to relinquish a greater share of their taxing authority compared to the Centre, raising concerns about the erosion of revenue autonomy at the sub-national level (Mukherjee, 2023). This reduction in states' revenue space poses challenges to their fiscal sustainability, particularly in managing expenditures and addressing development priorities. Therefore, the GST (Compensation to States) Act was enacted to ease concerns about declining revenue in 2017. This Act assured all states an annual growth rate of 14% in their GST revenue compared to the base year of 2015-16, spanning five years from July 2017 to June 2022 (Gupta & Hirway, 2020). The compensation period ended on 30 June 2022.

The revenue collections touched new highs monthly during the previous fiscal year, 2023-24. The gross GST revenue in June 2024 reached ₹1.74 lakh crore, 7.7 per cent higher than June 2023. Average GST collections for the financial year-till-date, i.e., April-June 2024, is ₹1.86 lakh crore. It is the highest so far since GST was introduced. However, there is a significant variation in the sub-national performance in GST revenue collection (Dash & Kakarlapudi, 2022). Most states experienced a fiscal boost due to the 14% annual growth guarantee in GST revenues during the transition period (FY18–FY22) (Agarwal, et al 2024). States with slower nominal GDP growth benefited more because the compensation mechanism ensured revenue growth outpaced their GSDP growth, raising their revenue-to-GSDP ratios. Conversely, faster-growing states like Karnataka and Gujarat saw relatively smaller gains. Richer states, including Punjab, Himachal Pradesh, and Karnataka, gained from the compensation mechanism, particularly as it mitigated losses from the shift from production to consumption-based taxes (Agarwal, et al 2024). To the extent the GST-induced changes have a significant bearing on the fiscal health of the states, the Finance Commission shall undertake a comprehensive evaluation of GST's revenue implications and induce the GST council to explore feasible alternatives to bolster states' revenue generation capacities, ensuring a balanced and sustainable fiscal framework.

Therefore, the main objective of this chapter is to provide a comprehensive analysis of state-wise GST performance in India. We try to analyse the state-level performance of GST and the states' tax performance pre- and post-GST. We also try to analyse the intensity of how states were affected by the end of the GST compensation era with a view

²⁵ Prepared by Dr Kiran Kumar Kakarlapudi, Assistant Professor & Jerome Joseph, Research Scholar, GIFT

to raise certain issues for the consideration of 16th FC given its concern for cooperative federalism and fiscal health of the states.

2. Data and Methodology

We take 16 central states in India for the analysis. Since the scope of our analysis starts from before 2014, when Telangana was separated from Andhra Pradesh to become a separate state, we have combined the data of both those states into ‘Andhra Pradesh’. The analysis period is from 2012-13 to 2023-24; i.e., 5 years pre-GST period and 6 years post-GST period. The year 2017-18 has not been considered, as this was the transition year. Further, since both the Union and state governments settled transitional credits of pre-GST taxes with GST liability, GST collection is not likely to reflect actual GST potential in 2017-18 (Mukherjee, 2023). Gujarat and Haryana's pre-GST tax collection data were unavailable in the GST portal. In this regard, we have used the exact estimations from Mukherjee (2020). States' revenue has been calculated as the sum of State Goods and Services Tax (SGST) and Integrated Goods and Services Tax (IGST) settlement to the states. The GSDP and GST revenue data of the states were collected from the Ministry of Statistics and Programme Implementation (MoSPI) and the GST²⁶ portal, respectively.

3. GST Revenue Performance

Simplifying the tax structure after implementing GST is expected to enhance tax revenue collections. However, studies have shown significant variation in GST revenue collection across states (Dash & Kakarlapudi, 2022). Further, the pandemic has disproportionately affected the GST revenue of some states (Dash & Joseph, 2022). Table 1 compares the growth of taxes subsumed under GST and GST revenue collection before and after the reform to assess whether states have gained after GST implementation. Since the tax reform was implemented in 2017-18, this analysis considers data from 2018-19. The average growth of yearly GST collections from 2013-14 to 2016-17 (pre-GST period) is compared with the average growth of 2019-20 to 2023-24 (post-GST period).

Notwithstanding the absolute decline in GST revenues in the pandemic year (2020-21), states, on average, recorded higher revenue growth after GST implementation, except for Bihar. **However, two points merit further discussion as far as Kerala is concerned. Kerala's GST growth performance ranked 8 out of 16 states (8.9%) during the pre-GST regime. However, during the post-GST regime, Kerala's growth ranked the lowest (11.98%), indicating a poor revenue performance compared to other states. Consequently, the average improvement in growth performance after GST is one of the lowest (3 percentage points) after Jharkhand and West Bengal.**

During the post-GST regime, Odisha registered the highest growth performance (19.7%) followed by Haryana (16.9% and Gujarat (16.68%). Contrary to expectations, two of the largest producing states, Gujarat and Maharashtra, have shown the largest improvements in growth rates compared to the pre-GST period. For Gujarat, it increased from 3.8 per cent to 16.7 per cent. The GST growth of Maharashtra during the GST period is 11 percentage points higher than the pre-GST period. This result negates the argument that

²⁶gst.gov.in

producing states will be the net losers as GST is a destination-based tax. Interestingly, Kerala, a major consuming state, is the only high-income state with the lowest GST increase after the GST implementation.

Table 1: Pre- and Post-GST Revenue Growth Rates of States

Name of State	Pre GST					Post GST					
	13-14	14-15	15-16	16-17	Avg	19-20	20-21	21-22	22-23	23-24	Avg
Andhra Pradesh	5.6	-1.1	6.9	17.7	7.3	8.1	-7.1	30.7	23.4	12.8	13.6
Bihar	23.8	4.0	27.8	15.5	17.8	15.6	-2.2	22.8	23.2	23.4	16.6
Chhattisgarh	8.5	5.1	7.6	9.7	7.7	8.6	-3.4	21.3	22.7	28.2	15.5
Gujarat	4.4	6.9	-0.3	4.2	3.8	8.4	-11.7	49.3	22.9	14.6	16.7
Haryana	7.5	14.8	10.7	12.1	11.3	13.8	-4.2	31.8	25.9	17.4	16.9
Jharkhand	9.2	11.9	2.4	25.7	12.3	13.9	-9.4	23.9	21.3	13.0	12.5
Karnataka	13.8	13.9	9.8	9.3	11.7	13.9	-9.4	33.7	24.1	19.8	16.4
Kerala	9.8	9.2	6.6	10.3	9.0	5.5	-8.9	27.8	24.9	10.7	12.0
Madhya Pradesh	5.8	9.0	8.3	13.3	9.1	10.6	-7.8	24.4	25.1	27.1	15.9
Maharashtra	2.5	5.4	1.4	11.5	5.2	9.2	-14.6	41.8	24.7	19.9	16.2
Odisha	8.7	7.2	2.7	14.8	8.3	22.9	-1.8	27.6	16.2	34.1	19.8
Punjab	13.1	7.1	-18.2	27.4	7.4	13.2	-11.5	38.3	19.1	20.9	16.0
Rajasthan	10.1	20.6	9.0	3.1	10.7	5.2	-7.4	35.5	25.3	16.6	15.0
Tamil Nadu	3.3	7.4	7.2	5.1	5.8	8.7	-12.7	32.2	21.7	17.6	13.5
Uttar Pradesh	1.1	9.0	8.3	9.2	6.9	12.7	-11.0	29.9	19.4	21.5	14.5
West Bengal	17.8	8.4	2.8	12.7	10.4	11.5	-9.8	25.7	24.0	12.2	12.7

Source: Own calculation using data from the GST portal.

Tax-GDP Ratio

The tax to gross domestic product (GDP) ratio is total tax revenue as a percentage of GDP, which indicates the share of a country's output that the government collects through taxes. The tax-to-GDP ratio is a standard indicator of the tax base. Table 2 compares the GST to GSDP ratio between the pre-and post-GST periods. **Interestingly, none of the states have registered a higher GST to GSDP ratio after the GST regime than the pre-GST regime.**

Prior to GST, Punjab (4.6%), Karnataka (3.5%), and Odisha (3.4%) were the top states with the highest GST to GSDP ratio. Similarly, Rajasthan (2.4%), West Bengal (2.6%) and Tamil Nadu (2.6 %) are at the bottom. **Kerala ranked 9 during pre-GST regime while its rank marginally improved after the GST to 8th position.**

States' relative position has changed substantially from 2018-19 to 2022-23. Punjab, which had the highest tax GDP ratio in the pre-GST regime, could not maintain the momentum in the GST regime, experiencing a significant decline from 4.6 to 2.4 per cent. Maharashtra and Uttar Pradesh have emerged as the top-performing states after the implementation of GST.

Table 2: Pre- and Post-GST Tax to GDP Ratio of States

State	Dec-13	13-14	14-15	15-16	16-17	Av g	18-19	19-20	20-21	21-22	22-23	23-24	Av g
Andhra Pradesh	3.3	3.1	2.7	2.5	2.6	2.9	2.3	2.3	2.1	2.3	2.5	2.5	2.3
Bihar	2.7	3.0	2.9	3.4	3.5	3.1	2.5	2.6	2.5	2.7	3.0	3.3	2.8
Chhattisgarh	3.4	3.1	3.1	3.3	3.1	3.2	2.1	2.2	2.1	2.2	2.4	2.8	2.3
Gujarat	3.6	3.4	3.1	2.8	2.6	3.1	2.1	2.1	1.9	2.3	2.6	2.5	2.3
Haryana	3.2	3.0	3.1	3.1	3.0	3.1	2.4	2.6	2.4	2.7	3.0	3.2	2.7
Jharkhand	2.9	3.0	2.9	3.1	3.4	3.1	2.3	2.6	2.5	2.7	2.8	0.5	2.2
Karnataka	3.7	3.5	3.6	3.5	3.3	3.5	2.5	2.6	2.4	2.6	2.8	3.0	2.7
Kerala	3.2	3.1	3.1	3.0	2.9	3.1	2.3	2.4	2.3	2.5	2.8	2.2	2.4
Madhya Pradesh	3.2	3.0	3.0	2.8	2.7	2.9	2.0	2.0	1.8	1.9	2.0	2.5	2.1
Maharashtra	3.8	3.4	3.4	3.1	3.1	3.3	3.0	3.1	2.7	3.2	3.5	3.9	3.2
Odisha	3.5	3.4	3.4	3.4	3.2	3.4	2.1	2.4	2.4	2.5	2.5	3.0	2.5
Punjab	4.9	5.0	5.0	3.7	4.3	4.6	2.2	2.4	2.1	2.7	2.9	3.0	2.5
Rajasthan	2.4	2.4	2.6	2.5	2.3	2.4	2.3	2.2	2.0	2.2	2.4	2.6	2.3
Tamil Nadu	2.9	2.7	2.6	2.5	2.4	2.6	2.3	2.3	1.9	2.2	2.4	2.5	2.3
Uttar Pradesh	3.4	3.0	3.0	2.9	2.8	3.0	2.6	2.7	2.5	2.8	3.1	3.1	2.8
West Bengal	2.6	2.7	2.7	2.5	2.6	2.6	2.2	2.3	2.1	2.2	2.4	2.5	2.3

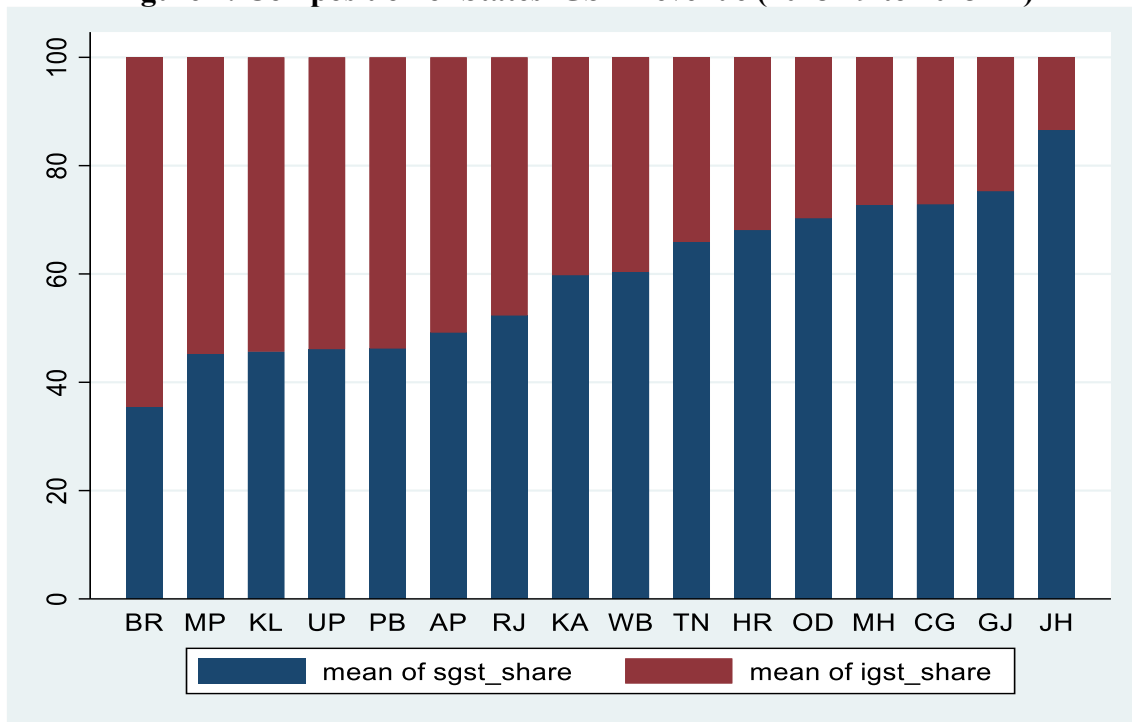
Source: Authors' own calculation using data from the GST portal and MoSPI

The Composition of GST revenue collection and IGST settlement

The states' GST revenue includes two components. State Goods and Services Tax (SGST) and settlement of Integrated Goods and Services Tax (IGST) by the Centre. For intra-state transactions, 50 per cent of revenue is collected each by the state (SGST) and the Centre (CGST). In the case of interstate transactions, the entire GST will go to the IGST account and then will be apportioned equally among the centre and the destination state. This amount, which will be apportioned to the states on account of interstate transactions, is the IGST settlement. A state with a high share of SGST implies that the state has more intrastate transactions. On the other hand, a state with a greater share of IGST settlement in its revenue will be a state whose revenue is dependent mainly on inter-state transactions. Since GST is a destination-based tax, it was anticipated that primarily consuming states would benefit from the producing states. Hence, the composition is crucial to states' GST revenue performance.

Figure 1 illustrates the relative share of SGST and IGST in the total revenue collection of the states over the years.

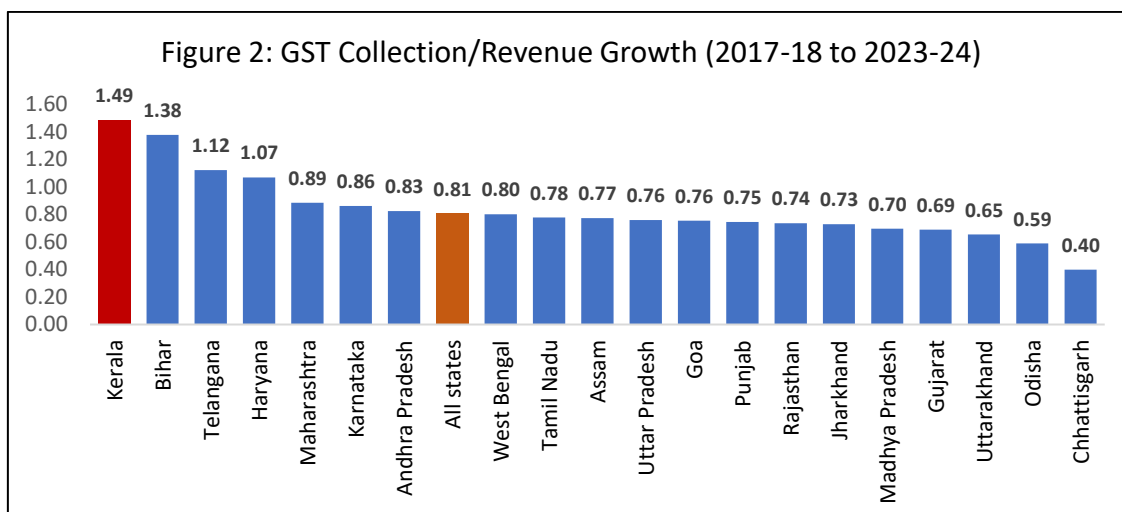
Figure 1: Composition of States' GST Revenue (2018-19 to 2023-24)



Source: Authors' calculation using data from the GST Portal

The states could be organised into those with a higher relative share of IGST settlement and those with a higher share of SGST. Chhattisgarh, Gujrat, Haryana, Jharkhand, Maharashtra, Odisha, Tamil Nadu, and West Bengal have a larger share of SGST in their GST revenue, implying that they have a large amount of intra-state transactions. In other words, these states are less dependent on other states for their consumption. On the other hand, states like Bihar, Madhya Pradesh, Kerala, Uttar Pradesh, Punjab and Rajasthan received more than 50 per cent of the share through IGST settlements. Except for Kerala and Punjab, other states are low-income states. The producing states are relatively high-income states except Chhattisgarh and Odisha. These two are mining-rich states with a lot of value creation taking place within the state.

The high dependence on IGST settlement could cause loss of revenue for the states. The Kerala Public Expenditure Review Committee estimated that the estimated gross loss of revenue due to IGST for the last seven years is to the tune of Rs 20000 to 25000 crore. Hence, the consumer states are not reaping the benefits. The inefficiencies created by the IGST are further corroborated in Figure 2. As shown in Figure 2, the growth rate of GST collection (SGST+CGST+IGST) is 1.5 times higher than the revenue (SGST+IGST settlement). This could mean in terms of collection, the state is not performing as poorly compared to the revenue.



How can the end of GST compensation affect the states?

GST compensation scheme was a system which is designed to bestow compensation to the States for five years to surpass the revenue loss on account of the implementation of GST. This provision of compensation has been enacted through the 101 Constitution Amendment Act, 2016. Section 7 of the GST Compensation Cess Act determines the calculation of the compensation amount payable to the states. Compensation payable to the states is calculated as the difference between actual GST collection and protected revenue. The projected revenue for any year in a State shall be calculated by applying the projected growth rate of 14 percent over that State's base year (2015-16) revenue. If the base year revenue for 2015-16 for a concerned State is 100, then the projected revenue for the financial year 2018-19 shall be as follows— Projected Revenue for 2018-19=100 (1+14/100)³.

Table 3: The protected and actual revenues for 2023-24

Name of State	15-16	2023-24			
		Protected Revenue	Actual Revenue	Difference	%
Andhra Pradesh	29982	85526	73083.4	-12443	-14.5
Bihar	12621	36001	27956.8	-8044	-22.3
Chhattisgarh	7357	20986	14052.9	-6934	-33.0
Gujarat	28856	82315	64447.7	-17868	-21.7
Haryana	15231	43447	35186.4	-8260	-19.0
Jharkhand	6411	18287	12534.6	-5752	-31.5
Karnataka	36144	103104	75984.8	-27119	-26.3
Kerala	16821	47984	31205.5	-16779	-35.0
Madhya Pradesh	15329	43728	34217.3	-9511	-21.7
Maharashtra	60505	172595	150233	-22362	-13.0
Odisha	11049	31519	25382.2	-6137	-19.5
Punjab	14472	41282	22366.2	-18916	-45.8
Rajasthan	17159	48946	39607.5	-9339	-19.1
Tamil Nadu	29786	84968	66294.2	-18674	-22.0
Uttar Pradesh	33388	95242	77806.9	-17435	-18.3
West Bengal	20098	57330	42443.5	-14887	-26.0

Source: Authors' own calculation using data from GST Portal

Table 3 shows that eleven out of sixteen states recorded above 14% growth in GST during the last six years. Five states, such as Andhra Pradesh, Tamil Nadu, West Bengal, Jharkhand and Kerala, recorded less than 14% average growth rate. Hence, the end of GST compensation eroded the revenues. If compensation had been provided in the fiscal year 2022-23, most states would have received a substantial increase of at least 20 per cent in their revenue collections. This highlights the potential impact that compensation could have had on the financial position of these states.

Conclusion

Even though most states have a higher growth rate in their tax revenue after the implementation of GST, no states have improved their tax-to-GDP ratio in the GST era. Therefore, the increased growth rate in tax revenue could be attributed to other economic factors, especially the rebound of the economy after the downfall of the COVID-19 pandemic. Some states like Gujrat, which were lagging behind in the pre-GST regime, were able to emerge as the top performers in many aspects of the GST. Many states that have performed better in the pre-GST regime have also come down in the GST regime. Therefore, it is certain that there has been a structural change in the tax-earning capacity of the states after implementing a destination-based tax. Kerala, despite being a consumer state, grossly lost after the GST implementation.

Viewed from the perspective of building a strong fiscal federal system, which is the prime concern of the Finance Commission, especially in the event of India's vision to be developed economy by 2047, there are reasons to believe that the introduction of GST has had its deleterious outcome on the health of India's Federal federalism. This could be seen in terms of the reduced fiscal base of the states on account of the reduced GST GDP ratio during the post GST period as compared to the pre-GST period. Interestingly, enough, most of the states that witnessed declining share in in the divisible pool also appears to have hard reduction in their GSTGDP ratio, indicating a double whammy. More importantly, a uniform tax rate across states for different slabs seems to have reduced the fiscal freedom of the states.

In this context, the future GST reform agenda shall focus on improving the fiscal health and fiscal freedom of the states. For improving fiscal health of the states, it is essential to ensure revenue neutrality which calls for ensuring the SGST share higher than IGST share. This is justifiable, especially in a context where states have surrendered a higher share of their tax revenue (52%) than that foregone by the Union (29%) for the establishment of the new tax regime. Secondly, instead of following a uniform rate across different slabs across states decided by the GST Council, there is the relevance of setting a markup rate above the uniform rate to be decided by the GST council. The state legislatures shall retain the freedom to decide the exact mark-up rate to be imposed not exceeding the ceiling set by the GST council.

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