Indian Public Policy Review 2026, 7(1): 55-63
https://doi.org/10.55763/ippr.2026.07.01.004

IPPR

Commentary: Ecological Fiscal Transfer in India: Broadening the Framework

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Abstract

India adopted ecological fiscal transfer (EFT) in the 14th Finance Commission (FC) and redefined the tax share formula by adding the net forest cover alongside other parameters such as population, income, area, tax collection, and demographic performance. The 16th FC has tried to bring some positive changes in the EFT formula by combining the share of weighted forest area and share of increase in the weighted forest area of states to address oversimplification of the ecological variable. However, the EFT has more potential, beyond just forest. Other national-level issues, specifically air and water pollution, trickle down to the local level, squeezing the subnational expenditure. Therefore, including pollution in fiscal transfers would do justice to lower-level governance. In this context, the 'Forest and Ecology' in the tax devolution can be replaced with a multidimensional environmental component, combining the forest, air and water quality. However, if the union government is not confident enough to experiment with the pollution angle in the transfer mechanism, they can consider including biodiversity in the transfer formula as an immediate action. This will be a less radical way to modify the EFT framework by integrating biodiversity along with forest cover, keeping the essence of forest and ecology in the centre of EFT. The commentary offers an alternative narrative for the EFT mechanism in India and paves a way to a different set of ideas that can be further expanded and studied empirically.

Keywords: Ecological Fiscal Transfer, Structural Gap, Single indicator approach

Publication Date: 28 February 2026

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1. Introduction

The national government shares some tax revenues with subnational governments, known as intergovernmental fiscal transfers. Brazil first introduced ecological indicators in its fiscal transfer in the 1990s, which was later followed by Portugal (De Paulo and Camões 2019). The integration of ecological indicators into the tax transfer mechanism was termed 'Ecological Fiscal Transfer' (EFT), aiming to mainstream environment and conservation actions in the government budget. According to Busch et al. (2021, 756), 'EFT transfers public revenue between governments within a country based on ecological indicators.' Selva et al. (2021, 270) have described EFT as 'a public policy mechanism that redistributes tax revenue between government levels to compensate for or incentivise environmental protection.'

India adopted EFT in the 14th Finance Commission (FC), when the fiscal transfer formula changed by adding forest cover. Since 2014, the union government of India started redistributing its tax revenue with states based on the net forest cover alongside historical parameters such as population, income, area, tax collection, and demographic performance (Kaur et al., 2023). The rationale for including the net forest cover in the formula was to provide 'compensation' to the states for maintaining vast forest areas, which otherwise could have been utilised for development activities (Chakraborty 2021).

The 15th Finance Commission introduced a slight change in the terminology and weightage for the net forest cover in the EFT formula. The term 'forest cover' was replaced by 'forest and ecology', along with an increase in the weightage from 7.5% to 10% in the tax devolution (Table 1). This change was from the perspective of both 'compensation' and 'incentive' mechanisms, with the aim of incentivising states to increase their expenditure for conservation efforts (Chakraborty 2021).

The 16th FC has recently released its report, with some changes in the tax devolution criteria and their weightage. For instances, the tax effort variable (with a 2.5% weightage in 15th FC) has now been replaced by the contribution to Gross Domestic Product (GDP) with a 10% weightage. This is a new criterion introduced in line with India's growth aspiration. The income distance (defined as per capita GSDP distance of a state from the average per capita GSDP of three large states with topmost per capita GSDP) has been reduced in weightage from 50% in 14th FC to 42.5% in 16th FC.

An interesting change is in the forest variable, which now includes share of open forest area (alongside the share of dense forest) and the state's forest expansion efforts, combined in an 80:20 ratio. This change aims to address the oversimplification of forest variable (which was reduced to only net forest cover) in the earlier FC reports, and to make the EFT more effective and suited for decentralised conservation efforts.

However, the EFT has more potential, beyond just forest cover. The 16th FC has already tried to bring some positive changes in the EFT, but the framework can be broadened further to make it more inclusive. The purpose of this commentary is to propose an alternative framework to draw policymakers' attention to re-examining the EFT framework. In this regard, I have highlighted some structural issues to start with.

Table 1: Criteria for Tax Devolution in Finance Commission

Criteria	14th Finance Commission (% of total tax transfer)	15th Finance Commission (% of total tax transfer)	16th Finance Commission (% of total tax transfer)
Income Distance (Per Capita GSDP Distance)	50.0	45.0	42.5
Population 1971	17.5	-	-
Population 2011	10.0	15.0	17.5
Area	15.0	15.0	10.0
Forest Cover	7.5	-	-
Forest and Ecology	-	10.0	10.0
Demographic Performance	-	12.5	10.0
Tax Effort	-	2.5	-
Contribution to GDP (New criterion in 16th FC)	-	-	10.0
Total	100.0	100.0	100.0

Source: Reports of the 14th, 15th, and 16th Finance Commissions.

2. Structural Limitations of EFT in India

The spirit of EFT is to encourage decentralised conservation efforts. The exogenous ecological fiscal transfers are expected to increase local government's expenditure on environmental commitments (Kaur et al., 2023). But the problem lies in the fact that EFTs are not a conditional grant and are not tied to the state forestry budget (Busch et al. 2020). This means states are not bound to spend EFT on forests, and can channel resources to other sectors they want to prioritise.

A study by Busch et al. (2020) confirms that states have increased expenditure more on adaptation-development-related activities such as crop improvement, waterbodies restoration, livelihood improvement, etc., instead of spending on forest conservation. It is essential to trace these sectors to understand and monitor the subnational priorities, rather than blindly believing that EFT would strengthen the state's forest conservation efforts.

Another structural issue is with the single indicator approach that EFT uses. Theoretically, environmental quality is defined in three ways (Oats 2001). Firstly, it is seen as an international public good and is a concern for the global community, such as with ozone layer depletion. Secondly,

environmental quality is viewed as a local good in which forest degradation becomes a matter of discussion, and thirdly, it is an inter-jurisdictional issue, for instance, in the case of water and air pollution.

The 14th Finance Commission deployed a single indicator approach to transfer funds, considering environmental protection a local good. A single indicator here refers to a single representative for a variable, such as net forest cover, representing the environment and ecology in the fiscal transfer mechanism. The 15th Finance Commission maintained the same approach.

However, this method is insufficient to accommodate many other national-level issues that trickle down to the local level, squeezing the subnational expenditure. The narrow focus on forests, based on a single indicator approach, limits the potential of EFT. The 16th FC has tried to expand the forest variable to some extent, by combining the share of weighted forest area and share of increase in the weighted forest area of states between 2015 to 2023. However, there is still a scope for further incorporation of other parameters in the EFT.

3. Towards a More Inclusive EFT Mechanism

The scope of the EFT framework can be broadened by including more parameters beyond forest and ecology. A recent discussion around the inclusion of pollution and biodiversity in the EFT framework is gaining ground. Inclusion of these parameters would mainstream environmental and ecological actions within the fiscal transfer.

Air quality is a national-level issue that is beyond the control of local governments. The state pollution control boards also have a limited financial and technical ability to deal with the problem (Ghosh et al. 2022). This limited local ability to cope with environmental costs becomes a legitimate ground for drawing the attention of the finance commission and bringing fiscal transfer into the picture.

The current EFT approach also sidelines the issues around water. Global warming and water stress are a growing concern nationwide. What is even more problematic is that water scarcity has imposed double pressure on marginalised population groups, due to the intersectionality of caste and class. Still, there is a complete absence of focus on marginalised communities and the water issues in the fiscal transfer.

Additionally, water and air are inter-jurisdictional concerns, and states rely on the union government's intervention to a large extent. Interstate water debates reflect the need for the active involvement of the union government, given India's federal political structure (Modak, Ghosh, and Mauskar 2021).

As per the 73rd and 74th Constitutional Amendments, some air and water conservation-related responsibilities have been passed on to the local bodies. Despite some fiscal devolution, almost 60% of the subnational expenditure in developing countries is dependent on the union government (Alam 2014). Therefore, including pollution in fiscal transfers would do justice to lower-level governance.

The ever-degrading air and water quality ultimately leads to a decline in the labour productivity and efficiency of the economic system (Behrer, Choudhary, and Sharma 2023), implying that water and air pollution issues are equally important as forest conservation and ecological maintenance. Therefore, the finance commission has a scope to widen its transfer boundary beyond the forest in the future.

On the other hand, a group of environmental experts are arguing for the integration of biodiversity in the tax distribution formula. Given that monoculture has appeared as a new threat to forests, the nature of the forest cover is a more meaningful way to investigate the protection of nature rather than the net forest cover. Given these arguments, the EFT can be modified in two ways: (1) integrating biodiversity into the forest and ecology and (2) replacing forest and ecology with a multidimensional environmental component.

To actualise the above proposals, a composite weighted indicator will be needed. A composite indicator combines multiple dimensions to represent the single variable. The 16th finance commission has made a positive change in the EFT framework by replacing the single indicator approach used by the previous FCs in the forest variable.

i. Integration of Biodiversity into the Forest and Ecology

A relatively easier and less radical approach is to only integrate biodiversity along with forest cover, keeping the essence of forest and ecology in the centre of EFT. A weighted average of biodiversity richness and net forest cover in the state would represent the ecological parameter within the tax devolution. The idea aims to compensate states for maintaining forest cover and incentivise states to maintain biodiversity within the forest.

However, we need to be careful of the likely perverse incentives that may dampen the true intention of the EFT. For instances, greenwashing via plantation on marginal lands, grasslands, or common areas to increase the forest area for pulling tax transfer, and temporary biodiversity enhancement through short-term manipulation (i.e., cosmetic enrichment planting) around the survey period rather than long-term commitments, are some real concerns.

In this regard, negative weights or caps can be introduced for sharp increases in forest area with declining biodiversity. Multi-year average can be applied to counter the short-term manipulation in the data; in addition, third party audits (by universities or independent research institutes) may enhance the accuracy of forest data.

India State of Forest Report (ISFR), the biennial publication of the Forest Survey of India (FSI), is the most important source for forest data. The state/UT wise forest cover data is available in every edition of IFSR. The biodiversity or species richness is commonly measured by Simpson's Index or Shannon's Index. FSI has used the Shannon Index for trees, herbs, and shrubs separately in respect to each state and UT in the ISFR 2019. This report can be referred for biodiversity data to start with.

However, the latest edition of ISFR (2023) does not include biodiversity richness. For future tracking of biodiversity data, it would be useful if future ISFR editions reintroduce biodiversity

assessment, particularly the Shannon Diversity Index. In this regard, the next finance commission has to coordinate with the Ministry of Environment, Forest and Climate Change for explaining data requirements and parameters to the FSI.

ii. Environment instead of Forest and Ecology

A more radical way to modify the EFT framework is to replace the 'Forest and Ecology' in the tax devolution with a multidimensional environmental component, which can be simply termed as 'Environment.' In this regard, the 'Ecological Fiscal Transfer' may be renamed as 'Environmental Fiscal Transfer.'

The 'Environment' variable can be expressed as the composite relative weightage of forest quality, air quality, and water quality. The transfer amount under this 'Environment' component can be determined based on a two-stage formula: the baseline environmental situation in the first stage and environmental performance in the second stage. In the initial few years (for instance, 5-10 years), the transfer should focus on the poor forest, air, and water quality. Later, the state's efforts to maintain the target level should become the major parameter. The rationale behind this is to ensure a needs-based compensation at first, and then a performance-based incentive, motivating the states to manage the air and water quality effectively.

However, this system is more vulnerable to 'gaming' if poorly designed. The two-stage formula needs to be rule -based. In the first stage, the finance commission would have to fix the baseline year, along with a fixed duration (so that states do not intentionally remain 'poor' and delay interventions for very long to pull the needs-based transfer). In the second stage, the performance of the states should be assessed relative to peers with a similar baseline situation, to prevent penalising structurally constrained states and rewarding the low-effort gains in already less-polluted states. In addition, the performance-based share of the transfer could be capped.

The potential sources and measuring parameters for the Environment variable are given in Table 2.

Table 2: Measuring Parameters and Data Sources for 'Environment'

Dimensions of the 'Environment' Variable	Measuring Parameters	Data Source
Forest Quality	Forest Degradation in each state (degradation of canopy density that can be expressed as % loss of land to the total forest area).	India State of Forest Report (latest edition 2023) published by the Forest Survey of India.
Air Quality	Average Air Quality Index of winter months of major polluted cities in the State.	Year wise data file at the city level for each state is available in the AQI Repository of the Central Pollution Control Board.
Water Quality	Currently there is no comprehensive monitoring index for water quality. A water quality index is proposed in this regard, like the water management index, developed by NITI Aayog. Biochemical Dissolved Oxygen, Nitrate N and Total Coliform can be used as major indicators in constructing the Water Quality Index.	The Central Pollution Control Board has released yearly state-wise data on pollution of rivers, ponds, lakes, wetlands, canals, even drains across the identified indicators.

4. Conclusion

In this commentary, I have highlighted the structural gap in the EFT in India and have made my efforts to conceptualise an alternative framework for consideration. While there are plenty of studies in the ecological fiscal transfer literature, none of them has developed any alternative narrative, a gap that my commentary tries to address. Although this article is not an empirical work, it paves a way to some different ideas that can be further expanded and studied.

A strong forest conservationist lobby in India has made the task easy for policymakers to look at only through the lens of forest, sidelining other environmental components. Air and water pollution can be potential future parameters. The decision lies with the finance commission, as to whether it wants to experiment with new components. If the union government is not confident enough to consider the pollution angle in the transfer mechanism, including biodiversity in the transfer formula is advisable as an immediate action.

Only five countries worldwide have mainstreamed environmental and conservation actions into the budget. India's forward-looking changes in the transfer mechanism will influence other countries in the global south to design their EFT formula. It is understandable that monitoring limitations in air and water quality, especially with regard to the current controversy on air pollution monitoring, raises questions on the feasibility of the composite index. This article, being a commentary piece, only offers a normative framework and leaves room for further arguments based on empirical studies. My ideas presented here remain open to contestation and modifications.

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