## SPECIAL SESSION:

## The role of economic instruments in the conservation policy mix - II

# "The 'Ecological' Value Added Tax (*ICMS-Ecológico*) in Brazil and its effectiveness in State biodiversity conservation: a comparative analysis"

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**Abstract:**

Fiscal transfer schemes are being widely used to redistribute public revenues from national and subnational to local governments. Since the 1990s, environmental fiscal transfer (EFT) schemes were implemented as part of an integrated set of incentives to reward local government efforts toward sustainable development. Responding to emerging concerns over resource conservation, agricultural expansion and biodiversity, Brazil pioneered the introduction of EFTs through the adoption of the *ICMS Ecológico* (ICMS-E) in a number of states to compensate municipalities for land-use restrictions and opportunity costs imposed by protected areas. The ICMS-E arose from the constitutional prerogative that states may legislatively allocate up to 25% of the revenues they devolve to municipalities from value added taxation, according to their own criteria (rather than on the basis of revenues generated locally alone). Although the ICMS-E was originally introduced to compensate for land-use restrictions, it soon developed into an incentive to create new protected areas. However, two important shortfalls impede its effectiveness in this regard: 1) ICMS-E revenues are not earmarked to support local government environmental expenditures unless local governments pass complementary legislation, and 2) the amounts devolved for this purpose are diluted by the instrument's very success; as it represents a fixed proportion of overall value added revenues, additional protected area creation reduces the proportionate amount of overall value added taxes devolved per unit area. Discussion is still underway concerning the real impacts of ICMS-E in Brazil, but a similar instrument has been created in Portugal and is under discussion in other countries. This paper aims to provide a policy analysis of the ICMS-E in Brazil with respect to its environmental effectiveness, distributive impacts and the institutional requisites for its improvement. Pointing to the results of prior research, we describe the experience of several states that enacted ICMS-E legislation over a similar period, pairing them with other states that have not yet implemented the instrument. Progress in protected area creation in the selected states will be compared from a BACI (before-after-control-intervention) perspective, taking into account the typology of conservation units and the apparent role of municipal governments in their creation. The following questions will be discussed: (a) to what extent has the introduction of the instrument and relative volume of ICMS-E allocations appeared to stimulate state and local responses to promote greater conservation?; (b) is there a threshold beyond which the instrument is no longer effective (related to the fixed proportion of ICMS-E revenues or to geographic limitations to protection)?; (c) What are the social impacts and the fairness in inter-municipal allocation of ICMS-E? (d) What legal and institutional arrangements including requirements for local

participatory budgeting and conservation quality assessment as a complement to EFT allocation weighting could allow an improvement in the effectiveness and equity effects of the ICMS-E implementation?

## "Ecological fiscal transfers in Portugal: their role and incentive in the policymix for biodiversity conservation"

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**Abstract:**

This study was developed in the scope of POLICYMIX project (EC-FP7), building on the adopted common framework for assessing instruments in policy mixes. The objective is to analyse the functional role of ecological fiscal transfers (EFT) in the policy mix for biodiversity conservation in Portugal, as well as the incentives to change local public actors behaviour and increase policy outcomes.

Ecological fiscal transfers intend to align incentives of public actors at different governance levels in order to foster biodiversity conservation objectives. Portugal is a pioneer within the European Union in the use of ecological fiscal transfers, through the recently amended Portuguese Local Finances Law (LFL) of 2007, which introduced ecological criteria in the allocation of fiscal revenues from the national to the municipal level in Portugal.

The intergovernmental fiscal transfers account for an average of around 60% of the budgets of Portuguese municipalities. Non-earmarking is the general principle adopted for intergovernmental fiscal transfers to the local level. This means that all monies are received as lump-sum transfers, with municipalities free to decide upon their use. The total area under protection and the percentage of municipal land taken up by conservation areas are the only conservation criteria involved in the ecological fiscal transfer component of this law. The quality of conservation areas is not taken into account.

This scheme provides for the compensation of municipalities whose economic development options have been limited by the land-use constraints imposed as a result of the designation of protected areas or Natura 2000 sites. This aspect is of particular importance when studying the functional role of ecological fiscal transfers in the Portuguese biodiversity conservation policy, as protected areas are the centrepiece of this policy.

To study the functional role of EFT, in terms of synergies, conflict or temporal sequencing with other instruments, the paper analyses the evolution of the conservation policy in Portugal based on published information and interviews with key stakeholders. The perceptions and attitudes towards the Law for a sample of decision-makers at the municipal level are also studied.

A second part is focused in the ex-post analysis of the instrument performance in the context of the policymix, considering environmental, social and economics criteria. The analysis covers a period of 4 years (2005/2006, previous to the new Law, and 2008/09 corresponding to two years with full implementation of the Law). The instrument is analysed in terms of the significance of fiscal transfers for municipal

budgets, showing the impact of the Law across municipalities. The crossover effects of the several changes and adjustment mechanisms introduced in the Law are highlighted. The incentive and redistributive effects are also analysed.

Based on the results obtained, adjustments in the Law are suggested and ex-ante scenario analysis is performed for some aspects. Lessons learnt provide significant insights both for improving the functional role of LFL in the Portuguese conservation policy as well as the policy outcomes.

## "Ecological fiscal transfers in Germany and their role in the policy mix for biodiversity conservation"

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**Abstract:**

The objective of this study is to analyse the institutional context and conduct a scientific assessment of the role of ecological fiscal transfers (EFT) in the policy mix for biodiversity conservation in Germany. It builds on a conceptual framework that was developed within the POLICYMIX project and is working towards two guiding questions. Firstly, what is the functional role of EFT in the policy mix in terms of synergies, conflict or temporal sequencing with other instruments? Secondly, what is the additional value of EFT in the policy mix in terms of outcomes? To these ends, the study analyses the institutional and legal background of biodiversity conservation policies in Germany and models the impacts of a potential EFT scheme between the federal level and the German Länder by introducing various new conservation indicators.

**Biodiversity conservation and the role of ecological fiscal transfers in Germany:** Protected areas (PAs) are the centrepiece of Germany's efforts towards biodiversity conservation. However, so far there is an insufficient consideration of the opportunity costs attached to setting land aside, causing opposition by affected actors against the designation of further conservation areas. Economic instruments such as payments for environmental services are now a common tool to create incentives for nature conservation among private landowners in Germany. However, foregone public revenues caused by conservation policies are so far unduly recognized in fiscal relations between different governmental levels. Ecological fiscal transfers might correct for this and help to foster acceptance of biodiversity conservation among subnational government levels.

**The status quo of fiscal transfers in Germany:** Fiscal transfers between the federal government and the German Länder play an important role in local and regional development by way of securing financial resources. Lump-sum transfers from the federal government are assigned on the basis of the 'fiscal need' in relation to the 'fiscal capacity' (own revenues based on state and local taxes, etc.) of the German Länder. The fiscal need is determined by the product of the number of inhabitants and a weighting factor that increases with the population. Accordingly, the more inhabitants live in densely populated urban areas the higher the lump-sum transfers that are assigned to German Länder. The heavily developed German Stadtstaaten (city states), i.e. Hamburg, Berlin and Bremen, benefit from an extra high weighting factor. In turn, less densely populated Länder that play an important role in safeguarding biodiversity conservation in Germany, such as Mecklenburg Western Pomerania, Niedersachsen or Brandenburg

comparatively lose out due to low population numbers. Hence, the existing system poses a strong incentive upon German Länder towards development and thereby acts as a driver of opposition against more comprehensive conservation policies.

**Considering conservation indicators in fiscal transfers:** In order to adequately reflect the public functions provided by biodiversity conservation the study proposes the integration of ecological indicators into the existing fiscal transfer scheme. Potential building blocks of such ecological indicators may encompass the size and strictness of PAs, their connectivity and their quality. What is more, an indicator could also build upon the special responsibility of some of the Länder to maintain Germany's natural heritage, e.g. to safeguard a unique but threatened species. A trade-off exists between increasing the complexity of ecological indicators to more adequately reflect effectiveness of conservation efforts and the transaction costs associated with data collection and calculating the index. When modelled against the backdrop of existing rules for allocating fiscal transfers, the distribution of winners and losers among the Länder and the absolute amount of transfers that is redistributed depend on the type of indicator used and the weighting factor assigned to it.

All in all, ecological fiscal transfers in Germany have the potential to turn the oft-encountered opposition towards protected areas at subnational government levels into active support for further conservation action. Biodiversity conservation and the associated opportunity costs are acknowledged as important public functions, and set equal to traditionally considered functions such as infrastructure needs. Furthermore, ecological fiscal transfers may provide necessary financial resources to subnational governments to fully implement and maintain the network of protected areas essential for biodiversity conservation.

## "Designing intergovernmental fiscal transfers for conservation: the case of REDD+ revenue distribution to provincial and district governments in Indonesia"

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**Abstract:**

A REDD+ scheme would involve the transfer of financial resources to forested developing countries taking part in it. The distribution of revenue from the central government to local governments to support forest conservation needs therefore to be considered. This paper simulates different approaches to the design of intergovernmental fiscal transfers (IFTs), a possible means to channel a REDD+ international payment to provincial and district governments. Using Indonesia as the case study, two different approaches, which are suggested by the fiscal decentralization literature, are tested: the cost-reimbursement and the derivation approaches. It is demonstrated that both approaches could be used. Using the cost reimbursement approach, localities with more degraded forests will receive a higher compensation per unit carbon emission reduction as compared to districts with primary forests. Avoiding further conversion of logged-over areas is associated with higher opportunity costs as compared to preventing the conversion of primary forests. In contrast, the derivation approach sets a fixed percentage and rate to distribute REDD+ revenue and ignores the opportunity costs of REDD+ incurred by local governments. The distribution of REDD+ revenue to eligible district governments is based on an assumed market price of carbon credits from REDD+. This paper then concludes with discussing the implications of the findings to designing the distribution of REDD+ revenue both for Indonesia and more generically for other developing countries.

## "Why do the functional roles of economic instruments vary across different national policymixes ? - examples from PES and EFT"

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**Abstract:**

A *policy mix* is a combination of policy instruments which has evolved to influence the quantity and quality of biodiversity conservation and ecosystem service provision in public and private sectors(Schröter-Schlaack and Ring 2011). The Policymix analysis framework proposes a three step approach to evaluating the roles and impacts of economic instruments such as payments for ecosystem services (PES) or ecological fiscal transfers (ET) in a policymix for biodiversity conservation; Step 1 Identifying challenges and context; Step 2 Identifying gaps and choosing instruments for analysis; Step 3 Policy evaluation and design. Step 2 involves conducting a 'functional role' analysis of economic instruments in their policymix, with possible outcomes such as the economic instrument being 'in complementarity', 'mutually reinforcing', or 'in conflict' with other economic, regulatory or information instruments. There has been little methodological or empirical work on instrument characteristics that explain such functional roles.

One avenue is to use strengths and weaknesses of instrument categories according to existing literature on policy instruments and mixes for biodiversity conservation (e.g.(Gunningham and Young 1997; OECD 1999; Schröter-Schlaack and Ring 2011). A broader, but descriptive approach might select context variables from the range of resource system, resource unit, user and governance system variables suggested in Ostrom's social-ecological systems framework (Ostrom 2007). Contextual variables explaining functional roles could also be found in normative frameworks. Ostrom's institutional analysis and design (IAD) focus on the 'rules' that describe common property resource management institutions might be adapted to explain institutions at other constitutional levels, including instruments (Ostrom 2005). Pannell's (2008) framework proposes rules for choosing policy mechanisms depending on the configuration of public and private net benefits of an intervention/project at a specific location (Pannell 2008).

We discuss pros and cons of different conceptual frameworks for explaining economic instruments' functional roles, and how these may vary depending on the national setting. We draw on findings from PES and EFT in preliminary case studies in Europe and Latin America in the POLICYMIX project (http://policymix.nina.no).

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