

1. Introduction

Properly designed intergovernmental fiscal transfers (IFTs) present an innovative instrument that creates incentives for public actors to support conservation. Whilst much of the literature on payments for environmental services has focused on private actors, such as smallholders and companies, and their forgone benefits due to conservation (Wunder, 2007), the economic implications of conservation for public actors have received less attention. Yet, this group of stakeholders should not be overlooked. When the state claims ownership of land – a situation common in many tropical forest-rich countries (Tacconi et al., 2010) – public actors are responsible for maximising the revenues from resource utilisation. This does not imply that revenue maximisation is, or should be, the only parameter used by governments to make decisions concerning natural resources. There is evidence, however, that it is a significant determinant of resource management, as noted, for example by Barr et al. (2006) and Andersson et al. (2006). Conservation, however, restricts public actors from generating public revenues, as they can no longer issue permits to pursue income-generating activities in areas designated for conservation. Local governments usually obtain a share of revenues from those resources. As these revenues can no longer be generated due to conservation, compensation to reconcile local costs with the benefits that reach beyond local boundaries is required for local governments to support conservation.

IFTs that include ecological indicators for the allocation of transfers to decentralised governments, and are therefore also known as ecological fiscal transfers, have been advocated as a means to address the spillover effects of the provision of environmental services. This provision of environmental goods and services, such as pollution control and conservation, create spillover effects (Oates, 2001; Sigman, 2005; Kuncce and Shogren, 2005; Ring et al., 2010). These effects, also referred to as spatial externalities, occur when public-service provision generates benefits that reach beyond the boundaries

of the administrative unit generating the service, while the costs are borne only by the local residents of the unit and the unit itself (Oates, 1972). Due to these externalities, local governments often neglect the benefits that spill over outside their administrative boundaries during the decision-making process. As a result, they tend to provide services below the efficient level (Oates, 1972). To address the spatial externalities of conservation, ecological fiscal transfers have been implemented in Brazil and Portugal and proposed in Switzerland, Germany and India to compensate the forgone opportunity costs of protected areas (Grieg-Gran, 2000; May et al., 2002; Köllner et al., 2002; Ring, 2002; Ring, 2008b; Ring, 2008c; Kumar and Managi, 2009; Santos et al., 2012). In Brazil and Portugal, the transfers have been used to distribute a portion of national governments' taxes (for example the value-added tax) to the states, based on a set of conservation and ecological indicators (Grieg-Gran, 2000; May et al., 2002; Ring, 2008c; Santos et al., 2012). The State of Pará in Brazil has adopted new legislation, as part of its Green Municipality program, where the state government will provide revenues for municipalities for their progress toward reducing deforestation in addition to their effort to support the existing protected areas.¹

International experience with IFTs shows that funding is mostly sourced from domestic public finance, mainly national government taxes. As the global community becomes increasingly interested in paying for environmental services, international finance may become available to support conservation at the subnational level, and could be channelled through an IFT mechanism. For instance, the agreement on Reducing Emissions from Deforestation and Forest Degradation (REDD+), which was reached at the 2010 Cancun meeting of the UN Framework Convention on Climate Change (UNFCCC), is expected to result in a flow of funds from developed to developing countries. Public finance that has been mobilised (and approved) to support REDD+ between 2008 and November 2011 has been estimated at \$446 million, of which \$252 million has been disbursed (Nakhouda et al., 2011). REDD+ finance is currently 13 per cent of total climate finance. At the end of 2013, the Conference of the Parties of the United Nations Framework Convention on Climate Change adopted a decision that provides guidance for ensuring environmental integrity for the full implementation of REDD+ activities on the ground. The package also provides a foundation for transparency and integrity of REDD+

action, clarifies ways to finance relevant activities and how to improve coordination of support (UNFCCC, 2013).

A REDD+ scheme would require developing countries to set aside additional forest conservation areas, which may not necessarily yield additional environmental services for local residents. Additional forest conservation would compete with other land-use activities, such as commercial logging, timber plantations and oil palm plantations, which can legally take place in productive forestlands. REDD+ measures that impose restrictions on the development of those land-use activities could therefore lead to a substantial loss of public revenues at the various government levels. At the subnational level, it can be expected that local governments would be interested in REDD+ only if the benefits and costs of conservation were duly acknowledged.

This book builds on the opportunity presented by the global interest in REDD+, and uses it as a case study to examine key design aspects of IFTs for conservation in developing countries. It explores the potential to use IFTs as a means to distribute payments for conservation between different levels of government. The distribution of international payments through IFTs may require a new approach to the design of IFTs, as their purpose is not only to correct spatial externalities of public-service provision (conservation) but also to distribute public revenues vertically between government levels from resource utilisation.

1.1 THE IMPORTANCE OF IFTs FOR DECENTRALISED FOREST MANAGEMENT

Developing countries have progressed towards decentralising functions for the provision of basic public services to subnational governments. A similar trend can also be observed in forest management, where powers to manage forest resources are being transferred to subnational governments (Larson and Soto, 2008; Larson, 2003; Ribot et al., 2006). Decentralisation is advocated on the basis of bringing the decision-making process closer to the public to ensure that policies better suit local needs (Cheema and Rondinelli, 1983; Conyers, 1983; Rondinelli, 1990). Decentralisation in public administration also needs to be accompanied by the transfer of authority to subnational governments to generate public revenues to finance

local public services. Through fiscal decentralisation, national governments can increase the tax authority of subnational governments or increase transfers to local governments to finance public-service provision at that level (Schneider, 2003; de Mello, 2000; Bräutigam, 2002; Falleti, 2005). However, despite the massive decentralisation process in public administration, national governments in developing countries are often not willing to pursue real fiscal decentralisation as they fear that subnational governments cannot deliver the public services devolved due to, *inter alia*, the low capacity of subnational governments (Bahl and Wallace, 2005).

Decentralisation in forest management transfers administrative functions to subnational governments to deliver a number of forest-related services, including forest monitoring and illegal logging control (Andersson et al., 2004; Andersson et al., 2006; Larson, 2003). However, as forest resources involve strong economic and political dimensions (Larson, 2003), decentralised forest management is often complicated by a lack of meaningful powers and sufficient resources being transferred to local authorities. National governments often refuse to devolve authority over raising or spending revenues and deciding the utilisation of high value resources to subnational governments (Ribot et al., 2006). Local governments, in turn, feel that they have been given the burden of delivering forest services without having the income to manage forests (Larson, 2003). When administrative functions are transferred to subnational governments without sufficient resources to fulfil these functions, subnational governments face a mismatch between revenues and expenditures, which will eventually compromise the quality and quantity of service provision (Bahl and Wallace, 2007; Bird and Smart, 2002; de Mello, 2000). The resistance of national governments to pursue true decentralisation policies has compromised the results of decentralised forest management in developing countries (Larson and Soto, 2008; Larson, 2003; Ribot et al., 2006). Moreover, the issue of spillover benefits resulting from forest conservation and protected areas has complicated forest management in developing countries (Ring et al., 2010; Kumar and Managi, 2009; Ring, 2008c)

To address both the mismatch between revenues and expenditures as well as the spatial externalities of service provision, the literature on fiscal decentralisation suggests IFTs as a suitable option. Two important purposes of IFTs are to distribute part of a national government's revenues to close the gap between spending and rev-

venues mobilised locally and to correct spillover benefits of public services to other jurisdictions (Bird and Smart, 2002; Bahl, 2000; Bahl, 1999; Bird, 2001; Bird, 1999). In decentralised countries, it is common practice for national governments to collect most public revenues and leave local governments with a limited tax base (Bräutigam, 2002; de Mello, 2000; Bahl and Wallace, 2007; Bahl and Wallace, 2005). Hence, if subnational governments are considered important providers of certain public goods and services, the higher level government needs to use IFTs to distribute part of its revenues to close the gap between spending and revenues mobilised by the local governments (de Mello, 2000; Bahl and Wallace, 2007; Bird and Smart, 2002). In relation to the spillover effects of public-service provision, by providing a unit of subsidy to local units generating spillover benefits, IFTs can encourage local decision makers to take into account the benefits of public-service provision that spill outside their administrative jurisdictions (Oates, 1972; Bird and Smart, 2002; King, 1984).

Designing IFTs to support conservation in decentralised countries requires a comprehensive examination of the impacts of forest management on the expenditures and revenues of local governments. In forest management, government stakeholders are concerned about providing forest-related services and most importantly about generating public revenues from forest resources. As conservation restricts local governments from generating public revenues from forests, IFTs for conservation are imperative to correct spatial externalities of forest-related services and also to distribute public revenues generated from forest resources between government levels. The distribution of revenues from forests will impact on the capacity of local governments to finance local public-service provision in other sectors, such as health and education. This study therefore aims to design IFTs for conservation through a careful examination of both the expenditure and revenue streams of local governments.

1.2 THE BOOK'S OBJECTIVES AND METHODOLOGY

In developing countries, designing IFTs for conservation requires careful consideration of technical challenges and constraints related to the capacity of implementing agencies. Research on IFTs for biodiversity conservation to date has focused on the distribution

formula to estimate the amount of transfers allocated to each unit of subnational government (for example Köllner et al., 2002; Ring, 2008b; Kumar and Managi, 2009). Two other components of the design of IFTs – conditionality and accountability – have received inadequate attention and are therefore considered in this book. Finally, using the case of REDD+ revenue distribution from the national to local governments, we provide a practical example of the design of an IFT for conservation in Indonesia.

The book is organised into three parts. First, it sets the scene by addressing the role of financial incentives and other factors in influencing local governments' interest in, and commitment to, conservation in Indonesia. Second, it addresses the design of IFTs for conservation – focusing on Indonesia's experience as the country case study – with a focus on the distribution formula, conditionality and accountability. Lastly, it provides the practical example of designing an IFT for REDD+ revenue distribution to local governments in Indonesia.

1.2.1 Setting the Scene: The Role of Financial Incentives

The first part sets the scene to understand the role that IFTs can play to support conservation. A review of the literature about decentralised forest management is provided as an overarching theoretical background. This literature has mostly analysed the administrative and political decentralisation implications of forest management (Ribot et al., 2006; Larson, 2003; Tacconi, 2007; Andersson et al., 2004; Andersson, 2004; Andersson and Gibson, 2007; Andersson, 2003). Studies of decentralised forest management have focused specifically on the institutional configurations and balance of power and interactions between actors involved in, or affected by, forest management (Larson and Soto, 2008). Although fiscal incentives have been highlighted as an important condition of success, specific research on decentralised forest management and fiscal decentralisation is lacking. The literature on fiscal decentralisation suggests a number of instruments for the efficient provision of public services at the local level (Bird and Ebel, 2007; Bird and Smart, 2002; Bahl and Wallace, 2007). This part brings together, therefore, the issues of fiscal decentralisation and decentralised forest management to understand how to design instruments that provide incentives for subnational governments to better manage forest resources.

There have been several recent assessments of the extent of deforestation in Indonesia. The government had estimated deforestation over the period 2000–2005 and 2006–2009 at 1.08 and 0.83 million hectares per year (Ministry of Forestry, 2008b; Ministry of Forestry, 2013). A more recent government assessment reported deforestation over the period 2009–2011 at 0.40 million hectares per year (Ministry of Forestry, 2013). However, a more recent, independent peer-reviewed study provides significantly higher estimates of deforestation in recent years, and a very concerning picture in terms of the trend of the deforestation rate. Annual deforestation stood at about 0.21 million hectares in 2001, and it had increased to about half a million hectares by 2005 (Margono et al., 2014). It also stood at around half a million hectares per year during the period 2006–2010, with a peak of about 0.71 million hectares in 2009, but in the last two years of the assessment it showed an upswing, reaching about 0.84 million hectares in 2012 (Margono et al., 2014). These levels of deforestation and forest degradation have positioned Indonesia as the third largest emitter of greenhouse gases (GHG) (World Bank, 2007a). Moreover, deforestation also affects biodiversity, and Indonesia is one of the globe's biodiversity hotspots (Myers et al., 2000). Indonesia's former President Yudhoyono pledged to cut emissions by 26 per cent by 2020 compared to business as usual. The forestry sector accounts for 87 per cent of the total 26 per cent target (Government of Indonesia, 2011). In response to REDD+ negotiations, the government of Indonesia is developing the regulatory and institutional architecture to implement REDD+, using a nationally based approach. Local governments would be encouraged to participate to implement subnational REDD+ projects. Carbon credits generated at the local level would be standardised and accounted for within the national system. This approach requires the national government to distribute the revenues that would be generated from REDD+ to subnational stakeholders.²

The alarming rate of deforestation in Indonesia, which is a major national and global concern, and the fact that the country has embarked on a programme to implement REDD+ are the reasons behind the choice of the country for the case study. Two provinces were selected as the focus of this book. They represent diverse cases in terms of deforestation trends, fiscal capacity and special autonomy status. Chapter 3 provides a detailed discussion of the key features of the case study.

Deforestation can be perceived as either good or bad by local stakeholders, including local communities and government officials, since legal land-use changes and forest exploitation generate public revenues. The second half of the first part of the book seeks to understand how financial incentives and other factors influence local governments' interest in reducing deforestation in Indonesia based on their perspectives towards deforestation and forest conservation (Chapter 4). This analysis is important as financial incentives alone may not be sufficient to shift local governments' interest, and may need to be accompanied by other factors, such as devolution of authority and pressure from NGOs. Chapter 4 aims to shed light on the causal mechanism of how different factors may influence local governments' interest in, and commitment to, conservation and/or land-use change in their localities. A causal statement is important in developing a public policy to ensure that the policy has an accurate theory of how to bring about change (Sabatier and Mazmanian, 1980; Sabatier, 1988; Sabatier, 1991; Parsons, 1995; Sabatier and Mazmanian, 1979). It is therefore important to provide a possible explanation of how the behaviour of subnational governments as the target group could be influenced by financial incentives to achieve the desired end-state – that is, reduced deforestation.

1.2.2 The Design of IFTs for Conservation

The second part focuses on the design elements of IFTs for conservation. The literature on IFTs for biodiversity conservation suggests that different options can be developed for fiscal transfers based on theoretical justifications, but political processes and community lobbying will influence the final design of IFTs (Ring, 2008b; Köllner et al., 2002). Specifically, Chapter 5 provides a comprehensive assessment of the literature on the design of IFTs as seen from the perspective of the fiscal decentralisation literature, the international experience on IFTs for conservation, and the existing Indonesian IFT mechanism for the forestry sector and land-based activities.

The second half of the second part presents an analysis of government officials' perspectives about the design of an IFT (Chapter 6). Since political negotiations to decide the final design of IFTs involve a multiplicity of actors, it is imperative to understand their values and interests on the design of IFTs. In order to examine those perspectives, an interpretivist policy analysis approach is adopted. Such

an approach advances a *practical* conception of reason as an alternative methodological framework to the traditional form of scientific rationality (Fischer, 2003). When conducting interpretive policy analysis, analysts have to become immersed in the beliefs (ideas, values, feeling and meaning) of the participants (Yanow, 2000). Stakeholders' perspectives about the design of IFTs are socially constructed (Guba and Lincoln, 1994). Hence, we did not aim to find a universal truth about this social situation. Rather, we sought to identify details related to the preferences of stakeholders and to combine them in a sensible and coherent manner (Furlong and Marsh, 2010). The research for Chapter 6 involved interviews with government officials. A constant comparison analysis, applying the principles suggested by the grounded theory method (Robson, 2002; Grbich, 2007), was applied during the analysis of the qualitative data collected. The analysis involves coding and analysing categories and meaning of qualitative data.

1.2.3 Practical Example: Designing IFTs for REDD+ Revenue Distribution

The third part provides a practical example of designing IFTs for conservation using the REDD+ revenue distribution in Indonesia. The description of REDD+ in this specific context is provided in Chapter 8. The two key aspects of IFTs are the determination of grant size and the distribution formula. They are considered in Chapter 9, which looks at those issues with the practical case of allocating REDD+ revenues to subnational governments. To estimate the amount of REDD+ revenue transfers to local governments, the tools used are available from academic disciplines including welfare economics and public finance. But before discussing the grant size and the distribution formula, the existing financial incentive structure that influences subnational governments' decisions needs to be assessed. The incentives affecting land-use change and forest exploitation in Indonesia is therefore considered in Chapter 8, which estimates REDD+ opportunity costs of alternative land uses from the perspective of subnational governments, as well as the central government and companies. That analysis focuses on three land-use activities: commercial logging, timber and oil palm plantations. The opportunity costs of alternative land-use activities can be used as the basis to determine the size of the REDD+ distributable

pool allocated to each government level. After the distributable pool is estimated, the study analyses the impact of using different approaches to determine the amount of the transfers for district governments.

NOTES

1. <http://policymix.nina.no/News/Newsarticle/tabid/3574/ArticleId/2196/Exciting-development-in-Amazon-ICMS-E.aspx> accessed 9 January, 2014.
2. There are three tiers of government in Indonesia: national, provincial and district/municipality level. For simplicity, this study refers to the district/municipality level as the 'district level', as forests are mostly found in districts, while municipalities refer to city areas. Subnational level is used to refer to both provincial and district/municipality levels.