

Protecting Forested Areas in Non-Forest Zone through The Ecological Fiscal Transfer Scheme in Indonesia: A case study from Kutai Timur district

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ABSTRACT

Ecological fiscal transfer (EFT) is an incentive scheme of budgetary transfers from different levels of a government (central and regional) to reward performances in environmental management. In Indonesia, EFT is mainly intended to protect forest zones or protected areas but does not include forested areas in the non-forest zone. This article investigates the opportunities and challenges of adopting the EFT scheme as a policy instrument to maintain the forested areas in Kutai Timur, a district in East Kalimantan province with the largest forested areas in its non-forest zone. This study applies a socio-legal approach along with a regulatory simplification instrument to examine the laws and regulations surrounding the adoption of an EFT scheme in Kutai Timur district. It demonstrates that the Kutai Timur district government can adopt the EFT scheme, given that they have the authority to manage the APL and village funds allocation. The scheme has no specific requirements or standards, identifying priority issues in the environmental sector. To adopt the scheme, the district government should develop criteria and indicators by considering the goals and priorities of district development, the data availability, and the opportunity for every village to implement it. The preparation of these criteria and indicators must be carried out in a participatory and accountable process to be well accepted by the stakeholders. Further, the district government requires integrating the EFT scheme in district policies on village funds allocation. By implementing the EFT scheme, the district government can encourage village governments and villagers to protect and manage forested areas in their village.

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KEYWORDS

Forested areas; Non-forest zone; Ecological fiscal transfer; Village funds allocation, Kutai Timur

1. INTRODUCTION

Our planet's climate is rapidly changing (Eckstein et al., 2019; World Economic Forum, 2020), and many countries, including Indonesia, increasing face environmental risks-- both in terms of their frequency as well as the impact of these risks. Indonesia is a country that is particularly prone to ecological disasters, such as floods, droughts, and rainstorms (Badan Kebijakan Fiskal, 2019), and the United States Agency for International Development (USAID) estimates that the damage of ecological disasters to be borne by Indonesians will reach a staggering IDR 132 trillion (the equivalent of approximately USD 9,2 trillion) in economic losses by 2050 (Hecht, 2016).

Climate change is a negative externality from economic activities that decrease the community's welfare (Hallegatte et al., 2016; Stern, 2007). These negative externalities from economic activity continue to accumulate, triggering an increase in the concentration of greenhouse gas (GHG) emissions, which are the main source of climate change (Badan Kebijakan Fiskal, 2019). In practice, the social and environmental externalities are often hidden, since they are commonly not addressed (GGGI, 2016), causing the risks to fall upon the shoulders of the community or

government. These externalities create costs for restoring and preserving the environment, often borne by the government. In budgeting policies, these costs become a component of government spending allocated in the State Revenue and Expenditure Budget (*Anggaran Pendapatan dan Belanja Negara/APBN*) or Regional Revenue and Expenditure Budget (*Anggaran Pendapatan dan Belanja Daerah/APBD*).

In an effort to manage climate change risks by 2020, Indonesia established policies to mitigate GHG emissions and to better adapt to the impact of climate change. Their plans were outlined in the National Action Plan for Reducing Greenhouse Gas Emissions (*Rencana Aksi Nasional Untuk Penurunan Emisi Gas Rumah Kaca/RAN GRK*) and the National Action Plan for Climate Change Adaptation (*Rencana Aksi Nasional Adaptasi Perubahan Iklim/RAN API*). Their efforts became supported through an allocated budget, however, such funding-related efforts need to be further supported by looking at opportunities for alternative sources of financing. Some of these alternative sources can come from government fiscal policies, such as environmental taxes (green tax), village funds, special allocation funds (*Dana Alokasi Khusus/DAK*), regional incentive funds (*Dana Insentif Daerah/DID*), green bonds, green *Sukuk*¹, and others through investment schemes by private parties, such as biodiversity offsets and private equity. Moreover, this crossover between governmental and private financing (quasi-fiscal) includes environmental trust funds (UNDP, 2018). To help reward governments that undertake initiatives to improve the environment and prevent climate change risks, including forestry several countries have developed an incentive scheme, through through the regulation of fiscal transfers known as *ecological fiscal transfers (EFT)* (Erbaugh & Nurrochmat, 2019; Nurfatriani et al., 2015; Sherifdeen et al., 2020). First developed in the early 1990s in Parana, Brazil, the scheme was promoted to overcome the scale mismatch between the environmental benefits and the economic costs of ecosystem conservation (Busch et al., 2021; de Paulo & Camões, 2021; Ring, 2004)

The discourse on EFT in Indonesia has developed over the last five years. The Research Center for Climate Change, University of Indonesia (RCCC UI), proposed the forest area as a variable in distributing the General Allocation Funds (*Dana Alokasi Umum/DAU*) to regions. The Biodiversity Finance Initiative (BIOFIN), initiated by the United Nations Development Programme (UNDP), encourages a DID scheme for biodiversity (BIOFIN, 2018, 2021; UNDP, 2018). In the Heart of Borneo, the World Wide Fund for Nature (WWF) conducted a study on ecological indicators for regional fiscal transfer schemes. This research focused on High Conservation Value (HCV), which may become an instrument for assessing the ecological benefits of an area in the East Kalimantan province (WWF Indonesia, 2019). Then The Asia Foundation (TAF) and civil society networks promote EFT through three schemes, namely the Ecology-based District Budget Transfer (TAKE), the Ecology-based Provincial Budget Transfer (TAPE), and the Ecology-based National Budget Transfer (TANE) (Putra et al., 2019). Such initiatives show that the fiscal transfer schemes in the EFT take various forms: from the central government to the regions, from the province to the districts, and from the district to the villages. The EFT also has multiple criteria and indicators, depending on what issues in the environmental and forestry sectors will be prioritized, protected, and managed (see Di Gregorio et al., 2017; Rossita et al., 2021; Yovi & Nurrochmat, 2018).

The district governments have an opportunity to protect forested areas outside the forest zone, known as other areas of use (*Areal Penggunaan Lain/APL*), using the

¹ Green *Sukuk* is a shari'ah compliant investment in renewable energy and other environmental assets. It addresses Shari'ah concern for protecting the environment.

EFT scheme, since that APL is under the district government's authority. Forested areas in APLs provide an essential role in community life support systems by: maintaining microclimates, being a habitat for wildlife, reducing pollution, and supporting community livelihoods, as well as potential non-timber forest products (Herman et al., 2019). The Ministry of Environment and Forestry (*Kementerian Lingkungan Hidup dan Kehutanan/KLHK*) notes that many forest covers in APLs are found scattered throughout Indonesia (Nurrochmat et al., 2020). The total forest cover area in APL until 2018 was around 7.9 million hectares (Ditjen PKTL, 2019). The most extensive forest cover of 2.5 million hectares in Kalimantan and the province with the most significant forest cover in APL is East Kalimantan with 996 thousand hectares (Herman et al., 2019).

This study examines the EFT scheme's possibilities to protect forested areas in Kutai Timur's APL (Figure 1). The author selected this district because it has one million hectares of APL (the largest in East Kalimantan) and a forest cover of about 161 thousand hectares (Herman et al., 2019). Several land-based activities on a large scale, such as oil palm plantations and coal mining, threatened the remaining forested areas in Kutai Timur's APL. The opportunity to convert forested areas in this APL by these two activities are great considering that both are the main pillars of the district's economy. Coal mining, for instance, constituted a significant 77.74 percent to the GRDP in 2020. Following the mining industry, the second highest contributing sector was oil palm plantation with a contribution of 9.6 percent to (BPS Kutai Timur, 2021; Pemkab Kutai Timur, 2021).

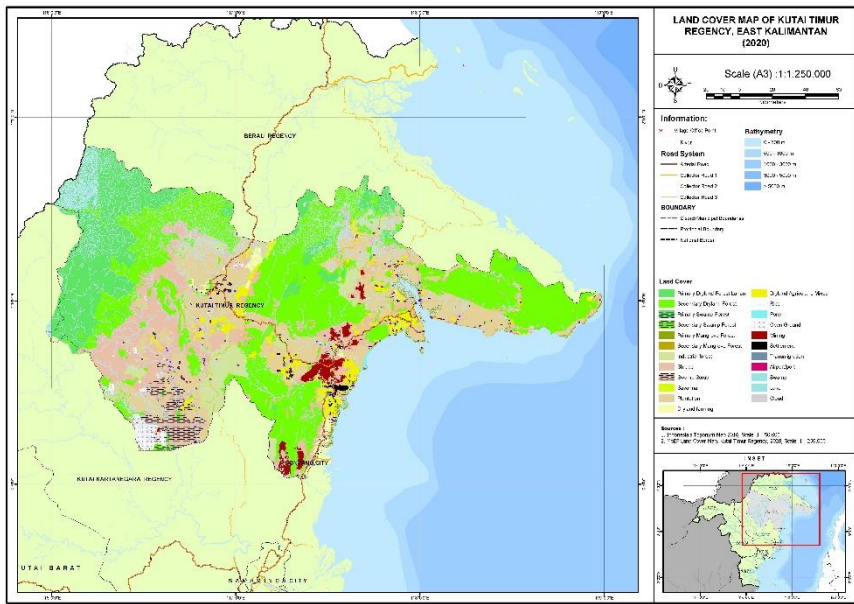


Figure 1. Study site

Coal mining permits in this district account for 1.6 million hectares or about 46 percent of the district's total area (Maulana, 2019). As for plantation, the planted areas are 483,751,97 hectares, and oil palm plantations take up most of this, constituting 94.99 percent of the total plantation area (BPS Kutai Timur, 2021), and it puts Kutai Timur as the largest oil palm plantation area in East Kalimantan (BPS Kaltim, 2021). The plantations areas are expected to continue to grow, considering that the grand design of long-term development mandates that the district become an agribusiness

and agro-industry region (Diskominfo Perstik Kutim, 2021). Besides, the district provides about 1.2 million hectares for oil palm plantations in its Spatial Plan document (2016-2036). Of this area, approximately 852 thousand hectares are situated in the district's APL (Herlambang et al., 2020).

Discussion on implementation of the EFT scheme is essential considering that the three EFT schemes initiated by BIOFIN, WWF, and TAF (TANE, TAPE, and TAKE) do not specifically encourage the protection of forested areas in the APL. This study is significant considering that the district government can protect the forested areas in this non-forest zone. Moreover, because it is legally not categorized as a forest zone, the opportunity to convert it into plantations, mining areas, and settlements is widely open. By proposing the EFT scheme, the district government can encourage village governments to protect and manage forested areas in their village. In this context, corrective policies are required to seek a breakthrough in preserving the remaining forests in the district's APL and to reduce deforestation and biodiversity loss, maintain carbon sequestration, and provide a better ecological balance.

This paper aims to understand how the EFT scheme can be a policy instrument to maintain the forested areas in Kutai Timur's APL, East Kalimantan. In particular, this article investigates the following research questions: Can the EFT scheme become a useful instrument to protect forested areas in the district's APL? If so, what should the district government do to implement it? What are the challenges in implementing it, and how should they be addressed?

2. METHODS

This study applied an interdisciplinary approach that is common in the discipline that has come to be known as the field of socio-legal studies (Banakar, 2019; Schrama, 2011). This manuscript follows a two-step approach. The first step involved a desk study analyzing the related regulations, such as forestry, environment, finance, regional governance, and literature on EFT schemes. Secondly, organized five focus group discussions (FGDs) via zoom meeting to investigate the current situation of the forested areas in Kutai Timur's APL. The online FGDs identified items that can be used as EFT criteria and indicators and examined opportunities and challenges in implementing the EFT scheme in the Kutai Timur district, East Kalimantan. Due to the COVID-19 pandemic, this study had to rely on online meetings because all travel and face-to-face interactions to collect data were not allowed.

This study uses a doctrinal legal approach to examine laws and regulations, comprising a critical conceptual analysis of all relevant legislation to reveal the meaning of provisions of the law pertinent to the matter under investigation (Hutchinson, 2016; Kharel, 2018), while the analysis steps refer to the regulatory simplification instrument. With this instrument, the regulatory analysis is carried out using legality, need, and situational criteria. By operationalizing these three criteria, a regulation that meets legality (not contradicting other rules, both vertically and horizontally), need (required by the community), and is business-friendly, can be assessed as a reasonable regulation (Sadiawati et al., 2015). Based on this method, the author proposes to amend the regency head regulation on village funds allocation (ADD).

This study evaluates the feasibility of implementing EFT by examining the legal framework of ADD in Indonesia. In doing so, this research reviews rules, opportunity, capacity, communication, interest, process, and ideology, also known as the ROCCIPI method (Otto et al., 2008; Seidman et al., 2001). This method is applied to investigate problems not adequately identified yet in regulatory drafting (Hoesien, 2012).

Investigating *rules* means to what extent the existing regulation of the village financial governance prescribes how actors (central, regional, village governments, and society) should behave. Meanwhile, discussing *opportunities* in this method looks at the environmental circumstances that allow the relevant actor to act as the law prescribes or vice versa. The next aspect is *capacity*. It refers to the relevant actors that possess the necessary knowledge, skills, and resources to behave as defined by the law or contrary to it. The ROCCIPI method also requires inquiry into the *communication* aspect to see whether the actors know and understand the rules of the village financial governance. Moreover, *interest*, refers to the existing incentives that induce relevant actors to behave as they do. Further, this method examines the *process*, which refers to the situations by which the actors decide whether they (dis)obey the rules and, finally, *ideology*, which means the actors' values, beliefs, and attitudes that influence their behavior.

3. RESULTS

3.1. Forested areas in APL in Kutai Timur district

Kutai Timur is the largest district in the East Kalimantan province, with 3,189,649 hectares, which makes up 24 percent of the province's total land area (BPS Kaltim, 2021). The district also has considerable potential for forest resources spread over 18 sub-districts in the Kutai Timur district. Forest resources are located both in the forest zone as well as APL and consist of the rain forest, karst forest, swamp forest, and mangrove forest. Rainforests are the dominant forest type and are present in all sub-districts except for the South Sangatta, North Sangatta, and Muara Bengkal sub-districts. Forests in the North Sangatta and South Sangatta sub-districts are mangrove forests, while forests in Muara Bengkal are swamp forests (Herman et al., 2019).

The APL area in the district spans 1,059,13 thousand hectares, and the forest still maintained is 161,374 hectares. The forested areas in APL are located in all sub-districts, with the largest areas located in the Muara Ancalong sub-district covering 31.429 hectares and in the Sandaran sub-district covering 28.240 hectares. The following table provides information on forested areas in APL in the Kutai Timur district.

Table 1. Forested areas in APL in the Kutai Timur district

Sub-district	APL Area (Ha)				Total	Non-forest	Total
	Forested Areas						
	Rain forest	Karst Forest	Swamp Forest	Mangrove forest			
Batu Ampar	564	-	-	-	564	7.590	8.154
Bengalon	11.229	19	19	925	12.192	114.113	126.305
Busang	10.186	161	-	-	10.347	26.924	37.271
Kaliorang	198	554	-	1.206	1.958	18.702	20.660
Karangan	11.886	4.015	406	-	16.307	57.720	74.027
Kaubun	9.461	1.286	-	3.128	13.875	63.149	77.024
Kongbeng	4.350	-	-	-	4.350	80.529	84.879
Long Mesangat	292	-	2.022	-	2.314	27.760	30.074
Muara Ancalong	3.548	-	27.881	-	31.429	83.708	115.137
Muara Bengkal	-	-	180	-	180	36.282	36.462
Muara Wahau	4.711	28	-	-	4.739	94.449	99.188
Rantau Pulung	4.246	-	-	-	4.246	60.804	65.050
Sandaran	20.854	2.628	18	4.738	28.238	64.541	92.779
Sangatta	-	-	-	79	79	6.099	6.178

Sub-district	Forested Areas				APL Area (Ha)		
	Rain forest	Karst Forest	Swamp Forest	Mangrove forest	Total	Non-forest	Total
	Selatan	-	-	-	984	984	30.822
Sangkalirang	5.964	950	667	11.308	18.889	85.124	104.013
Telen	10.442	-	241	-	10.683	36.227	46.910
Teluk Pandan	-	-	-	-	-	3.216	3.216
TOTAL	97.931	9.641	31.434	22.368	161.3	897.7	1.059.1

[Source: (Herman et al., 2019)]

Given its significant size, the forested areas in APL play a significant role in reducing carbon emissions. Compared to the forest zone in the Kutai Timur district, the forested areas in APL are the largest, comprising 31 percent of the total forest in the district (Amirta et al., 2019a). The district's comprehensive secondary dryland forest cover is both an opportunity and a threat to reduce emissions from deforestation and forest degradation. Poor forest governance, for instance, can have an impact on the decline in the quality of forest cover into thickets, which has the potential to produce relatively large emissions.

The conversion of secondary dryland forest into shrubs is the most significant contributor to GHG emissions in the district (81.14 percent), followed by deforestation of secondary dryland forest into plantations (7.41 percent). The expansion of plantation land (carbon stocks reached 65.6 tons/hectare), for example, is carried out in abandoned areas, such as shrubs (carbon stocks around 29.9 tons/hectares), which can reduce GHG emissions 35.7 tons/hectare. However, if the plantation land comes from the conversion of secondary dryland forest (carbon reserves of 169,7 tons/hectares). It will contribute to GHG emissions of 104,1 tons/hectare (Amirta et al., 2019b).

3.2. Forested areas in APL: Why should they be protected?

There are two main categories of land in Indonesia: forest and non-forest zones, also known as APL (Siscawati et al., 2017). A forest zone consists of forest areas designated for conservation, protection, and production, while APL is mainly designated for non-forestry sector development. The Ministry of Environment and Forestry (*Kementerian Lingkungan Hidup dan Kehutanan*: KLHK) has jurisdiction to govern the forest zone. In contrast, the management of APL is under the Ministry of Agrarian and Spatial Planning/National Land Agency (*Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional*: ATR/BPN) regional governments. From a spatial planning point of view, APL is a cultivation area designated for industry, fishery, plantation, settlement, food crops, and horticulture activities. With such a reputation, the forested areas in APL are very likely to be exploited.

Some APL land is forested, while many forest zones have been highly degraded with little or no forest cover remaining (Nurrochmat et al., 2020). Reforestation of degraded forests is expensive. Based on the Director-General of Watershed Control and Protected Forest's (PDASHL) regulation Nr. P.8 of 2017 concerning the Basic Unit Prices of PDASHL Activities in 2018, for example, the cost of replanting forests per hectare ranges from 11-19 million rupiah. These costs do not include maintenance, security costs, and the risk of crop failure.

There are at least four reasons why forested areas in APL need to be protected. *Firstly*, out of about 7.9 million hectares out of 67 million hectares of APL (11.7 percent) are forested (Ditjen PKTL, 2019). Therefore, maintaining the remaining forest at APL will reduce deforestation and biodiversity loss, maintain carbon sequestration, and provide a better environmental balance. When the remaining forest in APL can be maintained and appropriately managed, it can become a tangible and intangible

regional investment. *Secondly*, these forested areas are legally considered to be outside the forest zone, which will motivate local government or people to convert them into other land uses (deforestation). Legally, forests in APL can be converted into plantations, or mining areas, or be used for other non-forestry sector developments as long as they do not conflict with regional spatial plans. The motivation to exploit forested areas in APL follows four fundamental factors: 1) the high-cost economy, 2) the technical inefficiency in forest resource utilization and processing of forest products and services, 3) the economic value of forest products/services low, and 4) the unequal distribution of forest resource benefits (KalFor, 2018; Rahmani et al., 2021; Yovi & Nurrochmat, 2018)

Thirdly, no policies or laws provide specific protections for the forested areas in the APL. Spatial planning regulations, both on central and regional levels, and only preserve the forest cover area in APL as a green open space (*Ruang Terbuka Hijau: RTH*) when it is located in industrial and residential areas. Dealing with biodiversity, GR Nr. 18 of 2021 concerning Management Rights, Land Rights, Flat Units, and Land Registration, obliges HGU holders to manage and maintain the high conservation value areas in their concession.² Other regulations concerning forests in APL are not addressed explicitly, but their content relates to forests with HCVs either in forest zones or APLs. *Fourth and lastly*, maintaining and protecting forested areas in APLs is essential to strengthen Indonesia's commitment to reducing GHG emissions, which cause global warming. This commitment, accompanied by actions to protect the remaining forested areas in APL, will further enhance trade negotiations for several leading commodities associated with environmental damage³, mainly tropical forests in Kalimantan.

3.3. EFT scheme as an instrument to protect the forested areas in APL

The EFT scheme is an alternative financing source for environmental recovery and preservation. Such a mechanism is a policy instrument designed to redistribute central and local governments' revenues based on ecological indicators (Ring & Barton, 2015). The EFT mechanism creates central and regional governments' intergovernmental fiscal transfer schemes by adding ecological indicators in the agreed formulation (Boadway & Shah, 2009). Thus, EFT enables a fiscal capacity for regions to strike an excellent environmental balance between its use for the community's welfare as well as for ecological preservation efforts (Kettunen et al., 2017).

The EFT scheme was first initiated in Parana, Brazil, in the early 1990s. In just eight years, the state succeeded in increasing the total protected area in Parana from 637 thousand hectares in 1991 to 1.69 million hectares in 2000 or increased by about 165 percent (Mumbunan, 2011; Ring, 2004). This success has inspired other states in Brazil as well as numerous other countries such as Portugal (Rodrigues, 2014), India, Germany, Australia, and Switzerland (Mumbunan, 2011; Mumbunan et al., 2012) to adopt the scheme in efforts to preserve the environment.

In Indonesia, the government accommodates the EFT scheme through the Minister of Finance Regulation (PMK) Nr. 160/PMK.07/2021 concerning Management

² There are six values and categorization of HCV: species diversity (HCV 1), landscape-level ecosystems and mosaics as well as intact forest landscapes/IFL (HCV 2), ecosystems and rare habitats (HCV 3), ecosystem services (HCV 4), community needs (HCV 5), and cultural values sites (HCV 6) (Senior et al., 2015) (Jennings et al., 2003; C Stewart et al., 2008). There is even an effort to increase the HCV criteria to seven for the production of certified plantation crops (Edwards et al., 2012) and promote carbon management (Christopher Stewart et al., 2010).

³ Indonesia's leading commodities often associated with environmental damage and deforestation are oil palm and pulp and paper plantations. See: (Alisjahbana & Busch, 2017; Austin et al., 2019; Barthel et al., 2018)

of Regional Incentive Funds (DID). This PMK further elaborates the criteria for the government's public service performance as the basis for providing fiscal incentives in Law Nr. 6 of 2021 concerning the 2022 State Revenue and Expenditure Budget. Through this PMK, the government has included the environmental management performance category as part of the government's public service performance indicators. It expands on the previous one, which only used waste management performance indicators.

Meanwhile, the fiscal transfers between provinces to districts, district to villages, which adopted the EFT scheme, later became the policy instruments are TAKE and TAPE. Jayapura district is the first district to implement the TAKE scheme established by Regency Head Regulation Nr. 11 of 2019 concerning Village Funds Allocation (Lintas Papua, 2019). The regulation prioritizes the ADD used for sanitation, spatial planning, environmental management, and alternative energy. Taking after Jayapura, the district that first established this policy, is Nunukan in North Kalimantan. This district implements the TAKE scheme through Regency Head Regulation Nr. 59 of 2019 concerning Amendment to Regency Head Regulation Nr. 15 of 2015 concerning Village Funds Allocation. The regulation provides ADD allocation for environmental protection at the village level, among others.

The third district to implement the scheme is Kubu Raya in West Kalimantan (Oxtora, 2020) through Regency Head Regulation Nr. 101 of 2020 concerning Procedures for Allocation, Determination, Distribution Village Funds Allocation, and Profit-Sharing Taxes and Regional Retribution for the Fiscal Year 2021. The Regency Head regulation provides incentives for village performance in using and protecting natural resources. The Siak district is the fourth district that adopted the scheme. The district enacted the green village index to be one of the indicators of the TAKE scheme through the Regency Head Regulation Nr. 135 of 2020 concerning Village Funds Allocation.

Meanwhile, at the provincial level, the TAPE scheme became implemented in the North Kalimantan province through Governor Regulation Number 6 of 2019 concerning Amendments to Governor Regulation Number 49 of 2018 regarding Procedures for Providing, Distribution, and Accountability for the Government of North Kalimantan Provincial Government Financial Assistance Expenditures (Gusti, 2019). The regulation stipulates a new allocation for ecologically-based financial assistance directed to five activities: forest fire prevention in APL, green open spaces' management (*Ruang Terbuka Hijau*: RTH), waste management, protection of water sources, and prevention of air pollution (Putra et al., 2019).

Referring to the explanation above, the opportunity to propose the EFT scheme to protect forested areas in APLs is available. At the district level, the local government can adopt it by modifying the policy on ADD.

3.4. Opportunities and challenges when implementing the EFT scheme in the Kutai Timur district

Opportunities to implement the EFT scheme can be tracked in regulations regarding the authority of district governments related to ADD. According to Government Regulation Nr. 43 of 2014 concerning The Implementation of the 2014 Village Law (amended by GR Nr. 47 of 2015: GR Nr. 43 of 2014), the district government can manage the allotment and use of ADD. In the Kutai Timur district, the district government arranges the ADD through Regency Head Regulation Nr. 36 of 2019 concerning ADD Guidelines (amended by Regency Head Regulation Nr. 56 of 2020). This

regulation determined the ADD distribution based on basic⁴ and proportional⁵ allocations. With such authority, the district government can reformulate the ADD distribution by adding affirmative⁶ and performance-based⁷ allocations on village performance achievements in the issue assessed, namely in protecting forested areas in APLs. This policy intervention can be carried out, considering that the district government annually amends the Regency Head regulation to determine the amount of ADD and its use in each fiscal year.

The district's Mid-Term Development Plan (2021-2026) also provides the opportunity to integrate the EFT scheme into district policies regarding ADD. Under the planning document, the district government will, among other things, establish procedures regarding the mechanisms for sustainable management of the forested areas. Doing so requires synergy and integration between the government, the community, and the private sector; along with regulations on forestry management mechanisms that are environmentally friendly; and a mechanism that can ensure an increase in the welfare of the community around the forests (Pemkab Kutai Timur, 2021).

Lacking quantity and quality of human resources causes sub-optimal monitoring of activities around forested areas in APL. One effort to overcome these limitations is to involve the communities. Given that the forested areas in APL are under the district's jurisdiction, integrating the EFT scheme into ADD will allow the district government to "share" their obligation to protect forested areas in APL with villagers. In addition, the village will receive compensation to protect forested areas in APL. In the long term, safeguarding forested areas in APL can reduce GHG emissions that cause global warming.

The opportunity to adopt the EFT scheme is in part also supported by the communities' traditional knowledge and longstanding customs related to forest preservation. For instance, in Wehea, Kutai Timur district, the community combines their local genius with the Wehea forest's resources to develop ecotourism, which is also intended to increase its economy around the forest area (Edwin et al., 2017). From the government side (district and villages), the protection of forested areas in APL implements sustainable development, including intra-generational and intergenerational equity principles (Maggio, 1996; Weiss, 2008). It is also part of the government's commitment to controlling climate change, considering that the Government of Indonesia has ratified the Climate Change Convention through Law Nr. 6 of 1994 concerning Ratification of the United Nations Framework Convention on Climate Change. Thus, Indonesia is officially bound by the obligation to achieve the convention's objectives (Triatmodjo, 2005).

In terms of challenges, the district government deals with the district's financial capacity to implement the EFT scheme. The determination of the ADD in 2020 experienced a significant decrease. In 2019, the ADD allocation was IDR 292.5 billion, and in 2020 the value of this allocation decreased to IDR 192.7 billion. There was a decrease of around Rp. 99.7 billion (34.11 percent). The decline in ADD determination

⁴ Basic allocation is the portion of ADD allocated to finance the fixed income of the village head and village officials. Under this basic allocation, all villages receive the same funds.

⁵ Proportional allocation is ADD distribution based on population, a number of poor people, area, and geographic difficulties.

⁶ Affirmative allocation is ADD distribution that intends to assist certain villages that require specific support, such as traditional villages, poor villages, and others.

⁷ Performance allocation is the distribution of ADD based on village performance achievements in the issues/sectors being assessed.

was due to the emergence of the Covid-19 pandemic. The district government has since refocused its budget distribution to handle and prevent Covid-19 (Pemkab Kutai Timur, 2020). Besides, the EFT scheme is designed to be part of the ADD, whose allocation is mandatory in the budgeting policy. However, the central government policy on increasing the number of fixed incomes for village heads and apparatus can reduce the proportion of ADD for performance-based incentives if not followed by adequate financing from the DAU (Putra et al., 2019).

Another constraint in adopting the EFT scheme is data availability. The characteristics of the data used in the preparation of criteria and indicators of the EFT scheme should be omnipresent and available on an ongoing basis. The standards and indicators are valid in each village and periodically available (Halimatussadiyah et al., 2021; Putra et al., 2019). Other obstacles are apparatus capacity and commitment. The actors who play a role in this are varied, such as the Village Community Empowerment Service, the Regional Development Planning Agency, the Environment Service, the Regional Financial and Asset Management Service, the Legal and Natural Resources Divisions of the Regional Secretariat, and the village government. These actors should know their duties and functions in performing the EFT scheme. In addition, implementation of the scheme also requires a high commitment from the government apparatus since, for example, there are still village government officials who commit ADD corruption at the village level in the Kutai Timur district (Teras Kaltim, 2021).

4. DISCUSSION

To implement the EFT scheme, the district government should set up criteria and indicators of EFT and integrate them into district policies and regulations related to village funds. The following explanation indicates how to perform both steps and the opportunities and challenges that may be encountered in its implementation.

4.1 Developing criteria and indicators of the EFT scheme to protect the forested areas in APL in the Kutai Timur district, East Kalimantan

There is no specific standard as a reference in developing criteria and indicators of the EFT scheme. The initial scheme was related to biodiversity conservation exist (de Paulo & Camões, 2019; Droste, 2017). Still, over time, ecological criteria and indicators are dynamic and developed, such as water conservation policies (Paulo et al., 2020), solid waste management, reforestation, and fire control (de Paulo & Camões, 2021; Haryanto, 2016).

In developing an EFT scheme in Kutai Timur district, this study argues that an incentive scheme, such as the EFT requires criteria and indicators that can measure and indicate the performance of the village government in protecting its environment. The district government should provide these criteria and indicators and update them annually to measure village government performance. The complexity of criteria and indicators used will affect the village government's performance assessment. Therefore, the district government should involve the relevant regional apparatus organizations to develop the EFT criteria and indicators. In general, there are two development models that the district government can choose between: first, a model with single data as criteria and indicators, meaning the EFT uses only one data type owned or compiled by the government, such as data on the forest cover in APL or on waste management; second, a model using multiple data as criteria and indicators of EFT, namely the preparation of the EFT index based on various data where each index has its score (Putra et al., 2019).

Adopting this scheme will help protect forested areas in APL, especially since the EFT is institutionally easier to implement than other programs that require approving

new, additional, annual budget outlays (Busch et al., 2021). There are three requirements in setting up criteria and indicators for the EFT scheme at the district level: relevant to the goals and priorities of district development, the availability of data, and the opportunity for every village to implement it (Putra et al., 2019). By referring to those standards and discussions with stakeholders in the Kutai Timur district⁸, this article proposes several criteria and indicators of the EFT formulation in the district. Both are dynamic and flexible, and after a year of implementation, the district government can evaluate and improve these criteria and indicators.

This study promotes the existing forested areas in the village as the first criterion to measure the village's performance in the EFT scheme. The forested areas become an option considering it has a significant role in addressing climate change (Brack, 2019; Streck, 2009). Approximately 2.6 billion tons of carbon dioxide, one-third of the CO₂ released from burning fossil fuels, is absorbed by forests every year (IUCN, 2021). In the case of Kutai Timur district, many forested areas in its APL are in good condition, storing carbon stocks and high biodiversity (Amirta et al., 2019b). Including this issue as a standard will encourage the village government to identify and protect the forested areas in the APL. The district government will compare it to the village data. It is also required to examine whether the size of the forested lands in the village increases, remains, or decreases.

The second criterion is village policies to protect forested areas in APL. Under Law Nr. 6 of 2014 concerning Village (the 2014 Village Law), the village can arrange regulations to govern forest resources optimally and equitably to improve the welfare of local communities around the forest area (Christmas et al., 2021; Zunnuraeni & Zuhairi, 2018). The district government can measure their commitment to protect the forested areas by examining whether the village has regulations intended to protect forested areas. The criterion could also be verified through the village's spatial plan regulating space allocation for forested areas in APL and its use.

The third criterion is a local genius⁹ in protecting forested areas in APL. Villagers play an essential part in safeguarding forested areas in APL. For the Dayak communities in Kalimantan, the role is generally based on knowledge or traditions that have been inherited from generation to generation (Anau et al., 2019; Bakker, 2005; Ifrani et al., 2019; Leo et al., 2022). Therefore, in assessing this criterion, it is necessary to identify the local genius related to forest resources in a village. The local understanding can be in the form of knowledge or practices intended to protect forested areas, including endemic biodiversity, that have been going on for a long time.

The fourth criterion is the activities performed by the villagers to protect forested areas in APL. Community involvement in forest protection developed for decades and is also known as community-based forest management (CBFM) (Wahyu et al., 2020). This scheme provides the opportunity for the community and government to achieve sustainable forest management. Additionally, it also aims to reduce the rate of deforestation (Fisher et al., 2019; Safitri, 2010). Integrating the CBFM as a criterion for the EFT scheme will reward villagers' initiatives in protecting forested areas. The EFT

⁸ The stakeholders consist of the district government; such as regional development planning agencies, environmental services, community empowerment and village government services, plantation services, agriculture services, land and spatial planning services, district secretariat (legal division, economic division and natural resources division); representatives of village government; NGOs; and universities.

⁹ Local genius is the values and norms that become a guideline for a community in carrying out their daily activities. It refers to what humans know, how they behave, and what strategies they develop to sustain their existence where they live (Bakker, 2009; Sartini, 2010; Tahir et al., 2021)

scheme also needs to consider community activities to protect forested areas in the APL in their village, such as patrols, installing signs prohibiting illegal logging, and boundary markings.

The final criterion is forest and land fire prevention in APL. This criterion refers to the fact that simple rules aimed at fire prevention in forests managed by communities in East Kalimantan have existed for many decades (Karki 2002; Siombo 2021; Suhardiman et al. 2002; Nanang and. Devung 2004). Adopting this criterion also takes into consideration the satellite monitoring that shows many fire-prone regions have been found in the district. According to The District Disaster Management service, all sub-districts in the Kutai Timur are prone to fire disasters; 50 percent have a vulnerable status, half of which are in the very vulnerable category (Pemekab Kutai Timur, 2021). The district government should explore how villagers carry out land-clearing practices related to this criterion. It is also crucial to check whether there are firebreaks around forested areas, including fire prevention efforts through installing signs and warning boards for land fire prevention. Moreover, it should also be observed whether there are assistance and guidance services that help prevent land fires in the village, as well as how to increase the capacity of the villagers to prevent and control forest and land fires themselves. The following table presents the proposed criteria and indicators for the protection of forested areas in APL.

Table 2. Criteria and indicators for the protection of forested areas in APL

No.	Criteria	Indicators
1.	Forested areas in APL in the village area	<ul style="list-style-type: none"> a. Percentage of forested areas in the APL compared to the village's size; b. an increase or decrease in forested areas in APL
2.	Village policies to protect forested areas in APL	<ul style="list-style-type: none"> a. village regulations related to the protection of forested areas in APL; b. village regulations regarding the village's spatial plan; c. village regulations regarding the protection of cultural sites in the APL (for certain villages)
3.	Local genius to protect forested areas in APL	<ul style="list-style-type: none"> a. longstanding customs/practices intended to protect forested areas in APL; b. traditional knowledge maintaining endemic biodiversity/flora and fauna
4.	The villagers undertake activities in protecting forested areas in APL	<ul style="list-style-type: none"> a. villagers' initiatives in protecting forested areas in APL (e.g., Patrol); b. signs and warning boards for illegal logging; c. boundary markings for forested areas in APL
5.	Forest and land fire prevention in APL	<ul style="list-style-type: none"> a. the practice of land clearing without burning; b. firebreaks around forested areas; c. signs and warning boards for land fire prevention; d. socialization and counseling on land fire prevention through various methods; e. capacity building of villagers for the prevention and control of forest and land fires

4.2 Integrating the EFT scheme into district policies on village funds allocation

To implement the EFT scheme properly, the district government should integrate it into district policies on ADD. The step consists of six following stages:

4.2.1 Internalization

Understanding the EFT concept within the Kutai Timur district government and other stakeholders is necessary. At this step, the proponent disseminates the EFT concept to the stakeholders in the district government. This step is significant because the EFT mechanism can only be well adopted if local stakeholders are well-informed about the benefits that can be derived from the EFT scheme (Ring & Barton, 2015).

4.2.2 Development of criteria and indicators

At this phase, the following activities must be performed:

- identify and list the strategic issues in the environment and forestry sectors that will be used as criteria and indicators;
- select and establish criteria and indicators to assess village government performance;
- develop the EFT formulation and index based on the chosen criteria and indicators; and
- perform simulation.

These stages are essential to ensure the quality of criteria and indicators. Qualified and acceptable criteria and indicators can improve the effectiveness of the EFT's implementation (Loft. et al., 2016), particularly for village's social and environmental co-benefits.

4.2.3 Coordination

The coordination stage is intended to facilitate a discussion the EFT scheme to receive input and support from the district apparatus organizations and village governments. The main issue will be how the stakeholders will understand and support the scheme, especially with regard to the use of criteria and indicators, and their impact on the number of funds received by each village. Coordination is required to ensure accountable and transparent information sharing about the qualifying criteria and indicators and to increase the efficiency and equity outcomes in the disbursement and spending of EFT funds.

4.2.4 Drafting instrument

The initial step to introduce the scheme into the Regency Head's ADD regulation is by reformulating it by adding the Affirmation Allocation and Performance-Based Allocation criteria.

4.2.5 Dissemination

It is necessary to disseminate the Regency Head's ADD regulation (and also regulations concerning the EFT) to the relevant district apparatus organizations, village governments, and other stakeholders. This dissemination must provide an overview of the EFT scheme stipulated in the Regency Head regulation.

4.2.6 Monitoring and Evaluation

Upon the implementation of the EFT, is furthermore necessary to develop a monitoring and evaluation mechanism to measure its effectiveness in improving the village's performance in relation to ecological criteria and indicators. This stage is essential to ensure that the EFT scheme can be well executed and to help strengthen its implementation. Moreover, monitoring sessions and evaluations are required to examine how effective the EFT is in positively changing the behavior of village

governments. Does the scheme enhance efforts to protect forested areas in APL and the environment for the better? The monitoring and evaluation results will serve as input for further developments of the concept and implementation of EFT. The following chart visualizes and describes the stages of EFT integration into district policies.

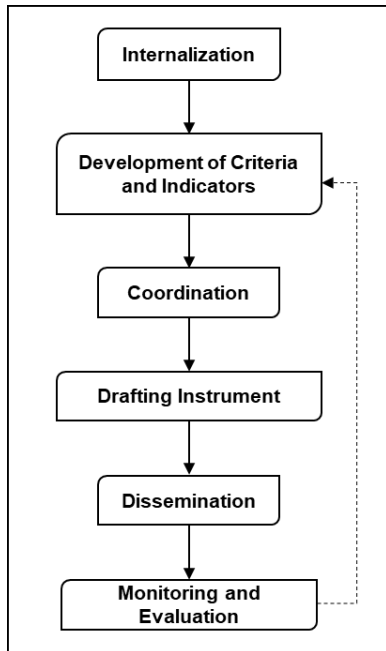


Figure 3. Stages of integrating the EFT scheme into district policies on ADD

4.3 The feasibility of implementing an EFT scheme in the Kutai Timur district

In terms of this research scope, this study focuses on the legal framework of ADD to investigate the feasibility of adopting the EFT scheme as a policy instrument to protect forested areas in the Kutai Timur district's APL. Based on the previous description, by applying the ROCCIPI method, this research discerns seven aspects of ROCCIPI into subjective and objective factors (Giri, 2016).

The subjective factor deals with the actors' mindsets, which are influenced by interest and ideology. In this case, maintaining the forested areas gives the villages awards or compensation from the district government. With regards to their ideology, preserving the forested areas in APL is part of communities' longstanding traditional knowledge and customs. Besides, the effort to maintain forested areas in APL implements sustainable development and the government's commitment to controlling climate change. In the long term, safeguarding forested areas in the APL can reduce GHG emissions which cause global warming.

Meanwhile, the objective factor consists of rule, opportunity, capacity, communication, and process. These five factors are related to the causes of institutional behavior that support or hamper achieving the goals set out in the regulation. Examining the *rules* shows that under GR Nr. 43 of 2014, the district government authorizes determination of ADD distribution and use. Moreover, the district's Mid-Term Development Plan (2021-2026) provides the opportunity to integrate the EFT scheme into district policies regarding the ADD. The *opportunity* to adopt the EFT scheme is available. The district government annually amends the Regency Head regulation to determine the amount of ADD and its use in each fiscal year. The district government

can reformulate ADD distribution by granting affirmative and performance-based allocations to village performance achievements that help protect forested areas in APL. The EFT scheme does not increase the amount of ADD but rather reformulates the allocation mechanism.

When looking at *capacity*, there are three issues to be dealt with. The first concerns budget capacity. An urgent situation or need can make the district government reduce ADD allotment. In addition, the dependence of the district government on the fiscal transfer from the central government causes the financial capacity of the district to be vulnerable. Predominantly if the central government reduces or is late in transferring funds to the regional government. The second concern is data availability. The preparation of criteria and indicators of the EFT scheme should be supported by the omnipresent data and remain available on an ongoing basis. The third concern is the local government capacity and commitment. Implementation of the EFT scheme requires adequate knowledge of the government apparatus, both on the district and village levels. Additionally, this also requires accountability to manage the EFT budget transparently and responsibly.

From a *communication* perspective, integrating the EFT scheme into ADD requires two steps. Initially, the scheme's internalization by the district and village apparatus. The internalization aims to promote a shared understanding of why the Kutai Timur district needs to adopt an EFT scheme to protect the forested areas in its APL. The second step involves determining the criteria, indicators, and scores of each of those criteria and indicators. In the establishment of these three items, the district government should consider the goals and priorities of district development, the availability of data, and the opportunity for every village to implement it. Furthermore, with regards to the *process*, the stakeholders involved in the implementation of the EFT scheme are varied, making it a mandatory requirement to establish guidelines on the duties and functions of each of these actors. The guidelines should also explain the mechanism that enables the assessment of the performance of forest area protection in APL.

The above explanation shows that the opportunities for integrating the EFT scheme into the ADD regulation are available. Under the law and regulations pertaining the village, the district government has jurisdiction to determine its allocation and distribution to each village. The possibility to accommodate the EFT scheme into the Regency Head's ADD regulation will improve through the reformulation of the budget by adding affirmative and performance-based allocations. Both criteria do not increase the number of existing ADD but rather reformulate its distribution. In the Kutai Timur district, the opportunity to accommodate the EFT scheme in the ADD is possible through amendments to Regency Head Regulation Nr. 36 of 2019 concerning ADD Guidelines (amended by Regency Head Regulation Nr. 56 of 2020). This policy intervention can be carried out since the district government annually amends the regulation to determine the ADD and its distribution in each fiscal year.

For most villages in Kutai Timur district, protecting the forest is a part of villagers' local wisdom and longstanding customs. It also reflects the government's commitment to implement sustainable developments in an effort to help mitigate and control the consequences of climate change. The integrating of the EFT scheme into the ADD regulation can encourage community participation in protecting the forested areas in APL, and help reduce GHG emissions.

The challenge in developing the EFT scheme is budget sustainability. Central government's ADD budget policies often change due to political or social dynamics. The government's decision to increase budget allocation for a village apparatus, for

example, will affect the other allocations. Likewise, when the central government refocuses the budget to manage the consequences of Covid 19, this affects budget revenues on the regional level. For sustainable funding, the district government should integrate the protection of forested areas in the APL into medium and long-term planning documents, not only for those related to the district's environment, but also those related to natural resources, and development programs.

Given that the EFT scheme is a new instrument introduced in ADD regulation, many actors do not understand the mechanism. This misunderstanding could be an obstacle to implementing the EFT scheme in the Kutai Timur district. To address this issue, the district government should provide guidelines on the EFT scheme that describe the actors' role and the mechanism for assessing affirmative and performance-based allocations. Another challenge is data availability. Developing criteria and indicators should be based on regularly available data. The criteria and indicators are valid in every village and available periodically. That said, in many cases, both district and village governments do not have accountable records management on their programs and activities. The criteria and indicators should consider three points: whether they are relevant to the goals and priorities of regional development, whether they can be applied in every village, and if they can be realized by the village authority. The lack of data can be anticipated by asking each village to fill out a form of assessed criteria and indicators, which the district government can then verify.

5. CONCLUSION

The forested areas in APL play a significant role in maintaining biodiversity and reducing greenhouse gas emissions. The Kutai Timur district government should protect these areas through comprehensive financial policies using the EFT scheme. By implementing this scheme, the district government can encourage and support village governments and villagers to preserve the remaining forests in the APL and in doing so help reduce deforestation and biodiversity loss, maintain carbon sequestration, and provide a better ecological balance. Under GR Nr. 43 of 2014, the Kutai Timur district government could adopt the EFT scheme in the ADD regulation. The feasibility of this implementation is real because the district government annually amends the Regency Head regulation to determine and adjust the amount of ADD and its use in each fiscal year. The possibility to adopt the EFT scheme is also supported by the fact that the maintenance of forests is already an integral part of communities' traditional knowledge and longstanding customs. Additionally, the village will receive compensation for their participation in protecting forested areas in the APL and thus financially benefit from this. Furthermore, maintaining forested areas in APL can help reduce emissions, which is in alignment with the government's efforts (central and regional) to fulfill its commitment to help mitigate and manage the effects of climate change.

To make the EFT scheme an interesting endeavour to stakeholders and to ensure its continued implemented in the Kutai Timur district, the district government should internalize the scheme. Apart from providing an overview of what the EFT entails, the district government should identify stakeholders' responses to the scheme, including the obstacles encountered and even the possibility of rejection. Using this information, the district government should develop criteria and indicators that take into consideration the goals and priorities of district development, the data availability, and the opportunity for every village to implement it. Once completed, coordination should be carried out, mainly on how the stakeholders understand the EFT scheme's criteria and indicators, and once this has been finalized the next step entails the

integration of the scheme into ADD district policies

The district government could reformulate the ADD by adding affirmation and performance-based allocation. After amending such a regulation, it is necessary to disseminate it to the relevant district apparatus organizations, village government, and other stakeholders. Finally, the last step is monitoring and evaluation. Both activities are required to examine how effective the EFT scheme is in strengthening village governments' and villagers' efforts to protect forested areas in APL and the environment for the better. The monitoring and evaluation results will serve as input for further developments of the concept and implementation of EFT.

To overcome obstacles related to the lack of data availability, the preparation of EFT criteria and indicators should examine the goals and priorities of district development, village capacity and authority. In the assessment process, such obstacles could be addressed through self-assessment by the villages. Concerning budget sustainability, the district government needs to integrate its commitment to maintain the environment, natural resources, and development programs in relation to the APL's forested areas in its district development plan, both for the foreseeable future and in the long-term.

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