Indeks Desa Membangun Plus (IDM+): Enhancing Direct Incentives for Sustainable Land Use

Report
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CLIMATE POLICY INITIATIVE

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ABOUT CPI

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has six offices around the world in Brazil, India, Indonesia, Kenya, the United Kingdom, and the United States.

ABOUT LEOPALD

This paper is the second in a series of studies to be conducted by CPI in Berau, East Kalimantan, as part of Project LEOPALD (Low Emissions Palm Oil Development). As part of the International Climate Initiative (IKI), this project is led by The Nature Conservancy and implemented jointly with GIZ and CPI. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative based on a decision adopted by the German Bundestag. Project LEOPALD aims to support East Kalimantan to achieve its Green Growth Compact through more sustainable palm oil practices. CPI focuses on the climate financing aspects of this goal.

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EXECUTIVE SUMMARY

Villages are the smallest unit of administration in Indonesia's vast and multi-tiered governance system. Central government targets for achieving sustainability goals should ideally trickle down to all levels of the government, culminating in clear action plans for the village unit. However, there is evidence that villages are not making sustainable land use programs a major part of their spending: Our work shows this is true even in regions where there is a strong commitment by the Provincial Government to accelerate green growth, such as in East Kalimantan (CPI, 2018).

There is currently a strong push to develop new fiscal transfer instruments that would provide monetary incentives to regions that achieve certain ecological goals. Many reforms have been passed over the past two years that have created rewards for certain achievements related to environmental sustainability. These have included rewards from the central government for waste reduction, and rewards at the locality level to its sub-localities for other ecological performance factors. It is important that these developments are underpinned by clear achievement metrics that truly indicate an improvement in the sustainability of the region. There is a growing urgency, particularly during the current pandemic-induced economic recession, to ensure that programs that foster a healthy environment and resilience are being supported.

This paper proposes a potentially sweeping, but relatively practical reform to the existing Village Development Index to encourage villages across Indonesia to adopt sustainability targets. First, by enhancing the index to include more sustainability indicators. Second, by using it as a basis for new fiscal transfers to incentivize villages.

This paper proposes a two-part approach for a potentially sweeping, but relatively practical reform to encourage villages across Indonesia to adopt sustainable practices.

The first part of the approach recommends that the current relevant indices, namely the Village Development Index (*Indeks Desa Membangun – IDM*), be enhanced to factor in better sustainability indicators that are applicable to all villages across Indonesia, despite di□erences in natural resource characteristics.

The second part of the approach recommends that this new index, which we propose to call the **Sustainable Village Development Index or** *Indeks Desa Membangun Plus* **(IDM +),** becomes the basis for new fiscal transfer instruments to incentivize villages to achieve their sustainability goals. .

The following findings form the basis of our recommendations:

1. **Existing development indicators and evaluation tools are inadequate to mainstream environmental sustainability targets to the village-level**

Existing evaluation methods are not adequate to account for – let alone reward – village actions to reach the implementation of Sustainable Development Goals (SDGs) or sustainable development in general. The existing evaluation indicators made by the central

government ministries for village-level governance—Village Development Evaluation (Index Pembangunan Desa—IPD) and Village Development Index (Indeks Desa Membangun—IDM) — are unable to holistically measure the environmental performance of villages. IPD is more focused on measuring socio-economical aspects and disaster resilience. And though IDM has an ecological resilience index, it only assesses a narrow scope of environmental quality and disaster risk management.

2. **Despite the existence of a national framework for Sustainable Development Goals (SDGs), there are no evaluation indicators for SDGs that would result in fiscal transfers to villages**

Despite the existence of a national framework on SDGs, there are no SDG evaluation indicators being actively used by localities for assessing villages. As a result, current fiscal transfers to villages provide no support for villages to improve on these non-existent indicators.

Evaluation methods need to be updated to reflect ecological factors in support of sustainable development. SDGs are the best basis for this, as they have been adopted at national levels through Presidential Regulation No 59/2017 and absorbed into Indonesia's Mid-Term Development Plan (Rencana Pembangunan Jangka Menengah – RPJMN). The Mid-Term Development Plan calls for improving environmental quality, disaster resilience, and low carbon development, among other things. There are more than 50 SDGs related to ecological indicators tailored to Indonesia's 2020 - 2024 development agenda. Despite that, we found that the lower tier of the government has no or limited sustainability indicators.

This could be because sustainability indicators are clear at the national level, but rather ambiguous at the subnational level, or the monitoring and evaluation procedures have not properly trickled down to the lowest tier of government. For example, when it comes to villages, our study in Berau shows that there are no indicators that can measure performance for land use and natural resources management. Similarly, when it comes to low carbon development, villages have no metrics applicable to them for renewable energy, or mitigation-adaptation infrastructure.

3. **New fiscal transfer mechanisms need to be based on ecological indicators that can be universally applied across all regions, but minimize bureaucratic disruption.**

Evidence shows the importance of fiscal incentives in supporting local actors for delivering ecological outcomes, particularly in the land-use and forestry sector (See Li 2016; Sutiyono et al. 2018; Thuy Tu et al. 2013; Wahyudi and Wicaksono 2020). This is because incentives are pivotal to induce changes in entrenched behaviors and policies at all levels of governments (Thuy Tu et al. 2013). Furthermore, basing fiscal transfers on conservation performance is also relevant in the context of COVID-19, where limited fiscal capacities calls for fiscal e□ciency: to use as little public money as possible to deliver the biggest outcomes.

Generally, fiscal transfer instruments have an underlying purpose to provide all regions with equitable opportunities nationwide and account for di□erences in GDP, human development, and poverty rate, among other things.

To provide a push for improvement across the nation, villages that have the highest environmental performance need to be rewarded by e□ective, transparent, and equitable mechanisms.

Therefore, implementing new ecological fiscal transfer mechanisms requires having sound ecological indicators that are applicable across all regions, yet able to account for unique differences. An equitable fiscal transfer based on ecological indicators should be able to absorb differences in natural resources, topography, weather, condition of forests or marine areas, and agricultural activities.

The indicator must be flexible in two ways — it must be broad enough to be relevant for all villages, and it must be flexible enough to be tailored to specific localities[1]. It must also be feasible to implement, and able to tap into existing bureaucratic processes instead of reinventing the wheel.

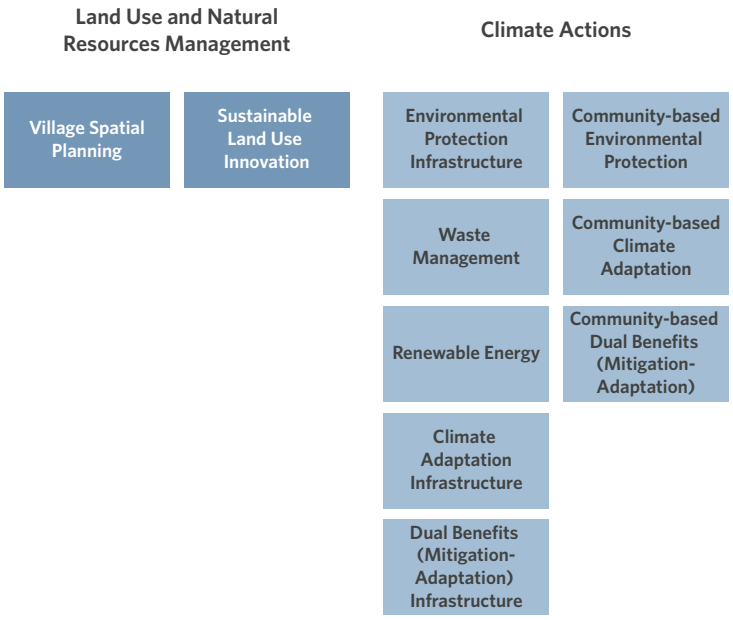
CPI PROPOSES A SUSTAINABLE VILLAGE DEVELOPMENT INDEX ("IDM+").

Based on these findings, CPI proposes a new indicator called the Sustainable Village Development Index (IDM +) that would support a regency-level Ecological Fiscal Transfer capable of translating SDG priorities to the village level.

IDM+ uses an existing index and adds 10 different ecological indicators which is divided into two main categories; land-use and natural resource management, and climate actions. The index adds important ecological performance indicators but does not create a new index. It instead builds on existing instruments already used in villages, to avoid lengthy bureaucratic adaptations.

The 10 IDM+ indicators are designed to be universally applicable across all villages, while also flexible to take on local characteristics. For example, some villages with specific goals might take on additional sub-indicators beyond the main 10 to showcase high performance.

Figure ES1. IDM+ main indicators



Source: *Climate Policy Initiative*

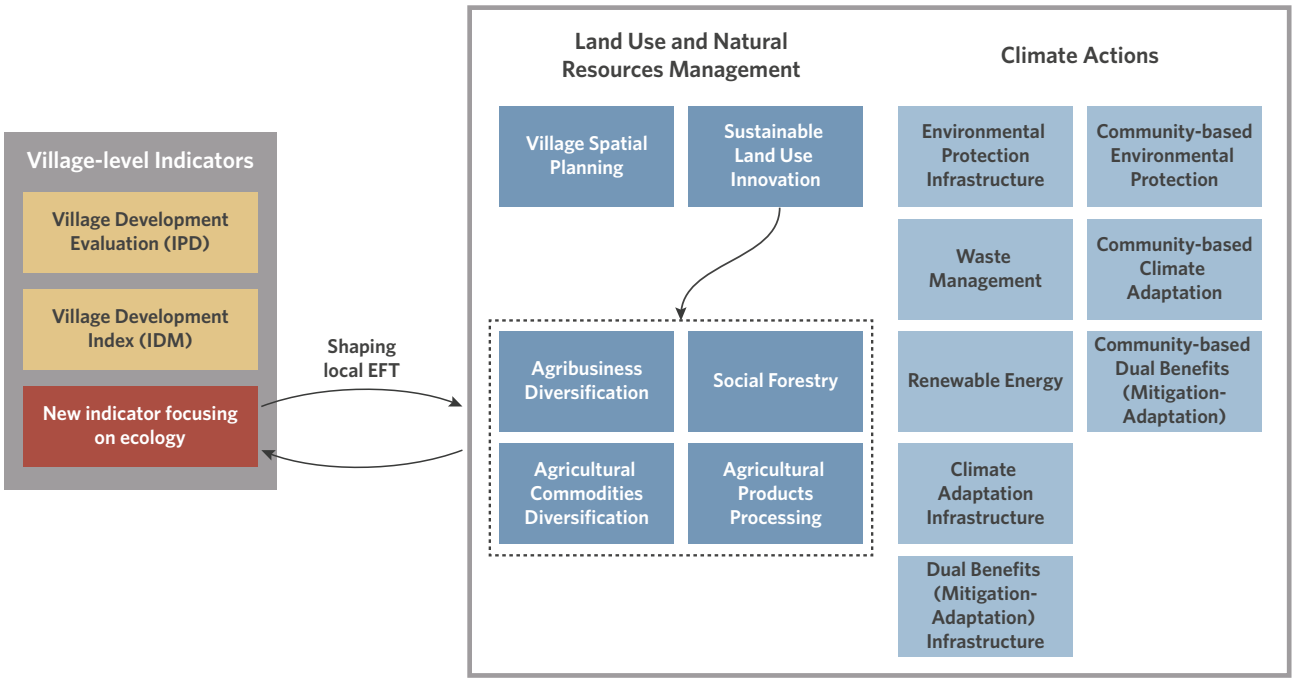
1 Under Law 06 Year 2014 on Villages, villages are mandated to help regency's development priority, including those with sustainability goals. This is also in line with Ministry of Village Regulation 13 Year 2020 on the use of village fund where SDGs program must be prioritized. The lack of coverage for SDGs in the existing IDM indicator means there is a need for villages to have sound ecological indicators.

There are two main indicators in the land-use/natural resources management category, which are village spatial planning and land-use innovation. Meanwhile, there are eight main indicators in the climate action category, such as environmental protection infrastructures, waste management, renewable energy, community-based environmental protection, climate adaptation, community-based climate adaptation, dual benefits (mitigation and adaptation), as well as community-based dual benefits.

As a case study, CPI looked at the Berau District of East Kalimantan to understand how such a transfer mechanism might be applied. We evaluated 100 villages based on the 10 IDM+ indicators as well as an additional 4 sub-indicators. The additional four indicators are agribusiness diversification, agricultural commodities diversification, agricultural products processing, and social forestry[2].

IDM+ measures 10 different ecological indicators. It is thus more comprehensive than existing ecological evaluations, while also flexible to take on local characteristics. For example, in the case of Berau, IDM+ could have 4 sub-indicators in addition to the main 10.

***Figure** ES2. IDM + Ecological Indicators in Berau*



***Source:** Climate Policy Initiative*

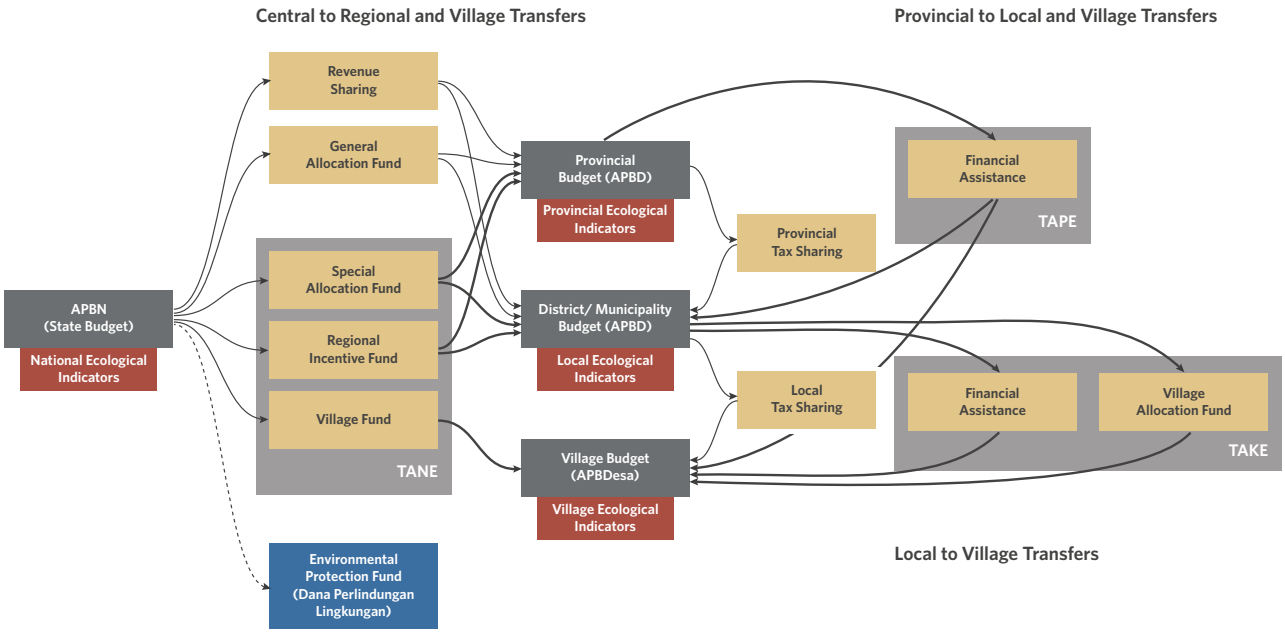
IDM+ is complementary to a rich array of initiatives taken up by civil society organizations and academia in recent years to push for Ecological Fiscal Transfers. These initiatives recommend including ecological indicators as a criterion to determine the amount of fiscal transfer received by local government beneficiaries[3]. There are three categories of reform

2 On the addition of social forestry in the indicator: although social forestry programs are implemented in the forest area which is under the authority of provincial or central government, the village governments have pivotal roles in assisting the licensing process for social forestry. Hence, the "performance" for this indicator will refer to this aspect.

3 Since 2019, there has been emerging advocacy movement for ecological fiscal transfer which was adopted by several localities, such as Indonesia's Jayapura Regency (2019), Nunukan Regency (2019), and North Kalimantan Province (2019). For more detail see Suryaputra (2019)

that are currently being discussed: Central Ecological Fiscal Transfer (Transfer Anggaran Nasional Berbasis Ekologi—TANE), Provincial Ecological Fiscal Transfer (Transfer Anggaran Provinsi Berbasis Ekologi—TAPE), and Regency Ecological Fiscal Transfer (Transfer Anggaran Kabupaten Berbasis Ekologi—TAKE).

Figure *ES 3. Fiscal instruments currently undergoing discussion for reform.*

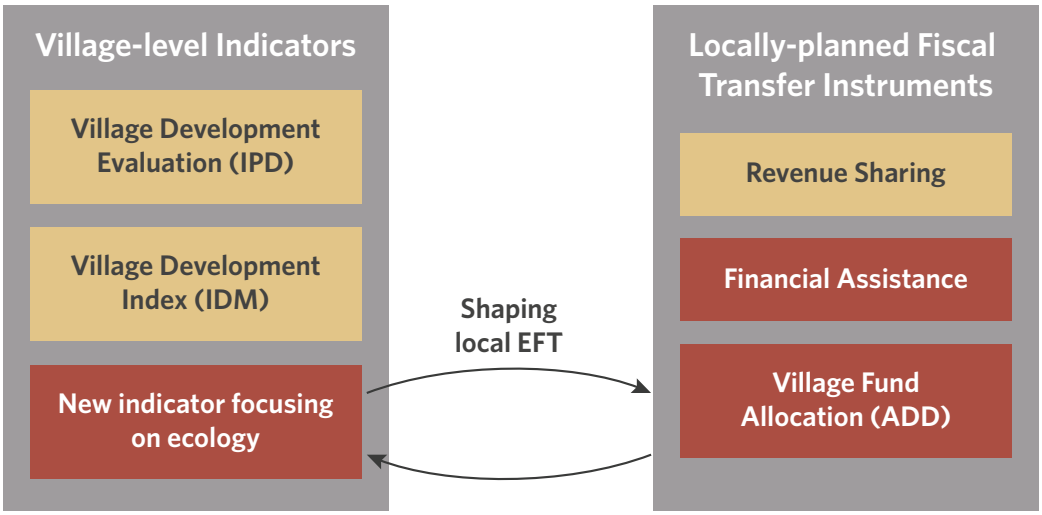


TANE: Central-to-Local transfers; **TAPE:** Province-to-Local transfers; **TAKE:** District-to-Local transfers

Source: *Climate Policy Initiative*

Many local governments are currently exploring EFT mechanisms, with the support of central government. Therefore, there is an opportunity to enrich this discourse and fill the gaps in measuring ecological performance to deliver on the ground impacts.

Figure *ES4: How ecological indicators underpin fiscal transfer instruments*



Source: *Climate Policy Initiative*

THE SUSTAINABLE VILLAGE DEVELOPMENT INDEX (IDM+) CAN FORM THE BASIS FOR DIRECT FISCAL INCENTIVES TO VILLAGES

There are various fiscal instruments that regional governments can use to incentivize village performance as measured by IDM +.

In the case of regency-to-villages fiscal transfer, there are a few fiscal instrument options that can be used for transfer funds to villages. The first one is Financial Assistance (Bantuan Keuangan Kabupaten), and the second one is Village Fund Allocation (Alokasi Dana Desa). The choice on which instrument can be connected with IDM + indicator is contingent on fiscal capacity, political support, and development priorities.

APPLYING IDM+ IN BERAU REGENCY, EAST KALIMANTAN PROVINCE AS A TEST CASE

***Fig ES5**. Berau Regency, East Kalimantan, Indonesia*

Results of our survey in Berau's 12 subdistricts, show that in general, most villages score Very Low (48/100) and Low (35/100) on the performance scale.

Survey results show that diversification of agricultural commodities (which contributes to resilience) has the strongest score, meanwhile village spatial planning and social forestry has the lowest performance across villages. We find that IDM + provides a wide illustration of the state of environmental performance across villages in Berau—illuminating which aspect needs the most support.

Based on the simulation, we found that for Berau it is recommended to opt for the use of mixed fiscal instruments for ecological fiscal transfer. That is, each instrument can be targeted for specific environmental objectives so that if mixed together, they can create a

fiscal transfer system that can both incentivize villages with high performance while assisting villages with low performances. For example, Village Fund Allocation (ADD) instrument can be used for village incentives, but a Financial Assistance instrument can be used to help low performance villages perform better—acting as an a□rmative action[4]. The use of blended fiscal instrument must be meticulously planned to promote intervillage competition on improving ecological programs, all while the government explores possibilities of using a new source of non-government funding, such as grants or result-based payments.

Based on our calculation, villages that did well and achieved a High on the performance scale, stood to gain an additional IDR 200 million on average from ADD, which is an increase of about 12-18% from their original fiscal allocations. However, this will also entail a reduction for the other villages that perform poorly. Hence, to prevent significant resistance to the introduction of ecological fiscal transfer in Berau, the district should leverage other instruments or other sources of non-government funding to complement ADD. This way, at least the low performing villages can receive similar fiscal allocation from the regency to improve their environmental governance capacity.

POLICY RECOMMENDATIONS: MOVING FORWARD WITH EFFECTIVE FISCAL MECHANISMS BASED ON IDM+ TO INCENTIVIZE ENVIRONMENTAL SUSTAINABILITY IN VILLAGES REQUIRES SUBNATIONAL GOVERNMENT INITIATIVES AND CENTRAL GOVERNMENT SUPPORT

Based on our simulation, we recommend policy support for the Central Government:

1. Continue to endorse the implementation of EFT across localities in Indonesia at the political and regulatory levels. Wide political support, particularly by the Ministry of Finance, is pivotal for local governments to tailor fiscal transfers underpinned by sustainability indicators.
2. Explore the possibility of incorporating IDM+ into IDM by the Ministry of Villages. This would help mainstream ecological performance evaluation down to the village-level across Indonesia.

We also recommend several key steps for the Berau Government:

1. Ensure clear and transparent dissemination on pre and during policy implementation, that IDM+ is an enhanced mechanism, built from the existing performance indicators and its associated fiscal instruments.
2. Ensure commitment and leadership from the heads of local villages. This policy involves multiple stakeholders with the principle of inclusive sustainable development, i.e. all villages have equitable opportunities and access to resources to improve their performance. Thus, this requires leadership and cooperation between the government, the private sector, and other development partners.
3. Knowledge and capacity building on IDM+ to enhance and develop knowledge tools, equipment, and other resources needed for successful implementation and continuous improvement on village sustainability.

4 In 2020, the Ministry of Finance set the regulation that allocates Village Fund for a□rmative action up to 1.5% of the total fund for all villages in Indonesia. The a□rmative allocation is defined as the percentage of the total Village Fund divided by all villages with high poverty rate nationwide. See Article 6 (4) Ministry of Finance (PMK) regulation 205 Year 2019.

1. INTRODUCTION

Indonesia is committed to mainstream the global indicator framework into its governance system under the Presidential Regulation No. 59 for the year 2017, to achieve its sustainable development goals (SDG) for 2030 and the national mid-term development plans *(Rencana Pembangunan Jangka Menengah Nasional—RPJMN).*

While Indonesia's overarching policy framework illuminates the importance of good governance in achieving environmental goals, the 'governance' in this case covers not only its country-level administration. Considering the decentralized and multi-tier governance in Indonesia, specific jurisdictional governments such as provincial, regency or municipality, and even village-level authorities must follow the national policy framework to incorporate sustainability principles into their governance frameworks. The successful translation of a country's policy objectives into locally-tailored policies, signals far-reaching implementations, political acceptance, and locally-made adjustments at the national-level policy, and enables their execution in a practical context.

Villages are the smallest units of administration in Indonesia's vast and multi-tiered governance system. Central government targets for achieving sustainability goals should ideally trickle down to all levels of the government, culminating in clear action plans for the village units. However, there is evidence that one of Indonesia's villages in East Kalimantan did not make sustainable land use programs a major part of its spending (CPI, 2018), despite the strong commitment of the provincial government of East Kalimantan to accelerate green growth.

Meanwhile, there is currently a strong push to develop new fiscal transfer instruments that would reward or provide fiscal incentives to regions that achieve certain ecological goals. Many reforms have been passed over the last two years to reward specific achievements related to environmental sustainability. For instance, waste reduction is rewarded by the central government[5], and other ecological performance goals are rewarded by a locality to its sub-localities. It is important that these developments are underpinned by clear achievement metrics that truly indicate an improvement in the sustainability of the region. There is a growing urgency, particularly during the pandemic-induced economic recession, to ensure that programs that foster a healthy environment and resilience are being supported.

This paper examines how village-level governance frameworks can be modified to include sustainability principles that can be translated into action by leveraging ecological index and fiscal transfer instruments. The ecological index is a tool used by either provincial or regency-level governments to track the developmental performances of villages, including those concerning ecological aspects. The fiscal transfer instrument helps finance the development agendas of villages, including those with environmental objectives. In Indonesia, fiscal instruments are instrumental in shaping its decentralized governance system into three main dimensions, i.e., allocative, distributive, and stability dimensions (Mumbunan, 2011).

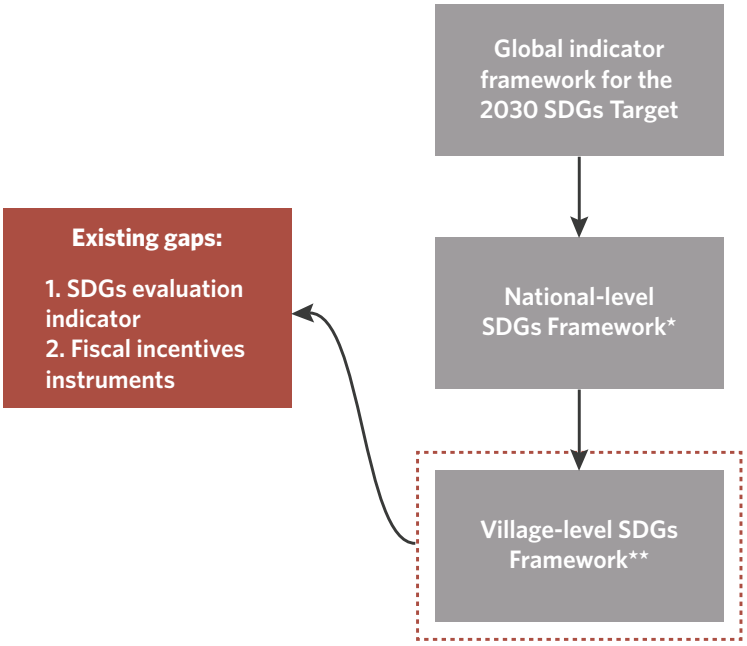
5 Through Regional Incentive Fund (Dana Insentif Daerah—DID) instrument.

This paper proposes a potentially sweeping, but relatively practical reform to encourage villages across Indonesia to adopt sustainability targets. The first recommendation is to enhance the village-level ecological index to include more sustainability indicators. The second is to use it as a basis for new fiscal transfers to incentivize villages. The third is to obtain political support from the central government to mainstream this reform nationwide.

2. EVALUATION INDICATORS AND FISCAL TRANSFERS IN IMPLEMENTING SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Indonesia needs an indicator to evaluate ecological performance at the village-level to ensure that high-level SDGs can translate into policies at the smallest administration units such as village-level governments. The indicator must be able to measure 'performances' objectively given the diversity of contexts on the ground. In addition, a reward system needs to be in place to enable the implementation of village-level SDG priorities. Fiscal transfer instruments are necessary to deliver incentives for those performances.

Figure 1. Village-level governance on sustainability in Indonesia



*Presidential Regulation 59 Year 2017 on SDGs Implementation
** Village law Year 2014 Article 78(1)

As part of the global agenda on SDGs, Indonesia's environmental goals are outlined in its Presidential Regulation 59/2017 on the implementation of SDGs and its national mid-term development plan. These adopted frameworks are reflected in the village law year 2014 that outlines village-level environmental goals.

2.1.1 MISSING LINKAGES

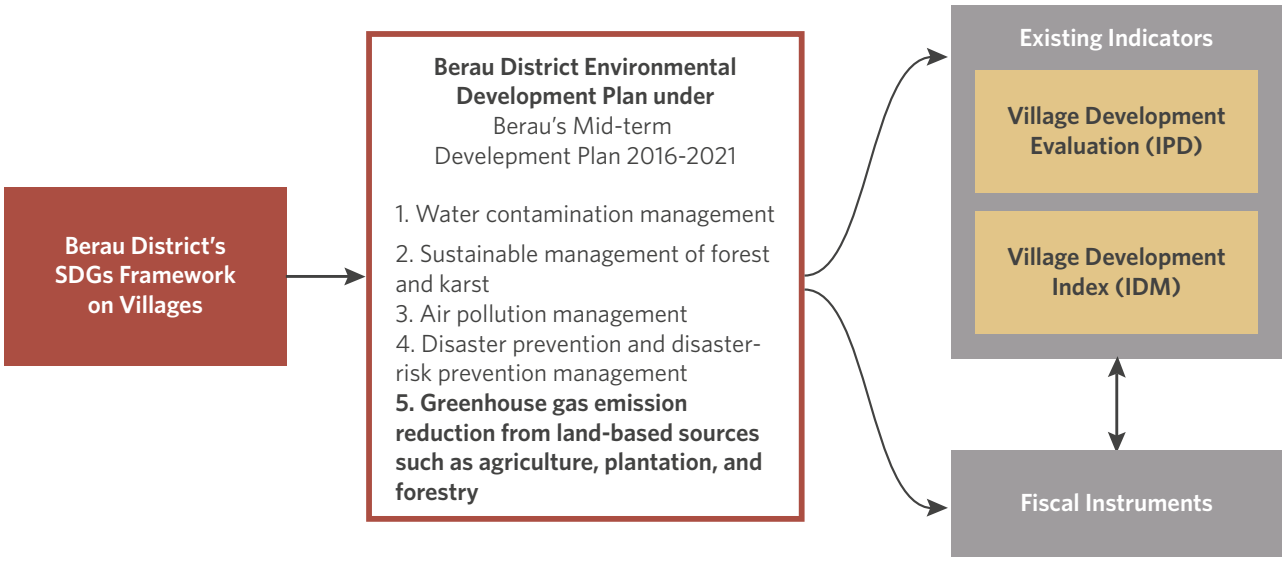
Existing indicators including fiscal instruments are disconnected to assess and incentivize village-level governance on environmental sustainability. Although the RPJMN has more than 50 ecological indicators tailored to its ecological development agenda in 2020-2024, targets and planning are clear only at the national level. Sub-national government planning may not be as clear, and monitoring and evaluation procedures may be lacking at the lower tiers of the government.

Therefore, it is necessary to have a comprehensive set of indicators that are capable of resonating with SDG targets and RPJMN indicators, and are also locality-specific to evaluate environmental sustainability at the village-level. In addition, the indicators must be able to underpin the existing fiscal instruments' aim to incentivize environmentally sustainable measures at the village-level.

Improving village-level governance on sustainability is also in line with the Indonesian government's agenda to build the country from the periphery *(membangun dari pinggir).*

2.1.2 CONNECTING VILLAGE-LEVEL EVALUATION INDICATORS AND THE HIGHER FISCAL FRAMEWORK

The regulatory framework for village sustainability exists, but its indicators are limited and disconnected from fiscal frameworks. For example, Berau Regency, East Kalimantan, has an existing environmental development plan that includes the reduction of greenhouse gas emissions. These plans are measured by existing indicators such as the village development evaluation *(Index Pembangunan Desa—IPD) and the village development index (Indeks Desa Membangun—IDM) both of which were created by central government ministries.*



Existing evaluation methods and fiscal instruments are not adequate to account for or reward village actions to achieve the implementation of SDGs in particular, or sustainable development in general.

The existing evaluation indicators for village-level governance lack the ability to holistically measure the environmental performance of villages. IPD focuses on measuring socio-economic aspects and disaster resilience, while the IDM ecological resilience index only assesses environmental quality and disaster risk management.

Our study in Berau Regency, East Kalimantan, shows that there are no indicators available to measure performance for land use and natural resources management. These could be tied into the fiscal transfer mechanism.

Similarly, in the case of low carbon development, villages have no metrics that are applicable to their renewable energy, or mitigation-adaptation infrastructure. Despite the existence of a national framework on SDGs, no SDG evaluation indicators are actively used by localities to assess villages.

Meanwhile, evaluation methods need to be updated to reflect the ecological factors that support the SDGs. This is applicable to all villages. To encourage improvement, villages that have been proven to have the highest environmental performance need to be rewarded with e□ective, transparent, and equitable EFT (Ecological Fiscal Transfer) mechanisms.

The EFT is an intergovernmental fiscal transfer based on ecological performance. Depending upon the financial instrument used for the transfer, it aims to induce incentive e□ects on the targeted jurisdictions. One of the expected e□ects is to enable green growth and fiscal e□ciency.

Berau Regency has a masterplan on environmental development. However, the two indicators used to measure achievements are inadequate. Moreover, the interconnections between the plan and the fiscal framework are not yet established.

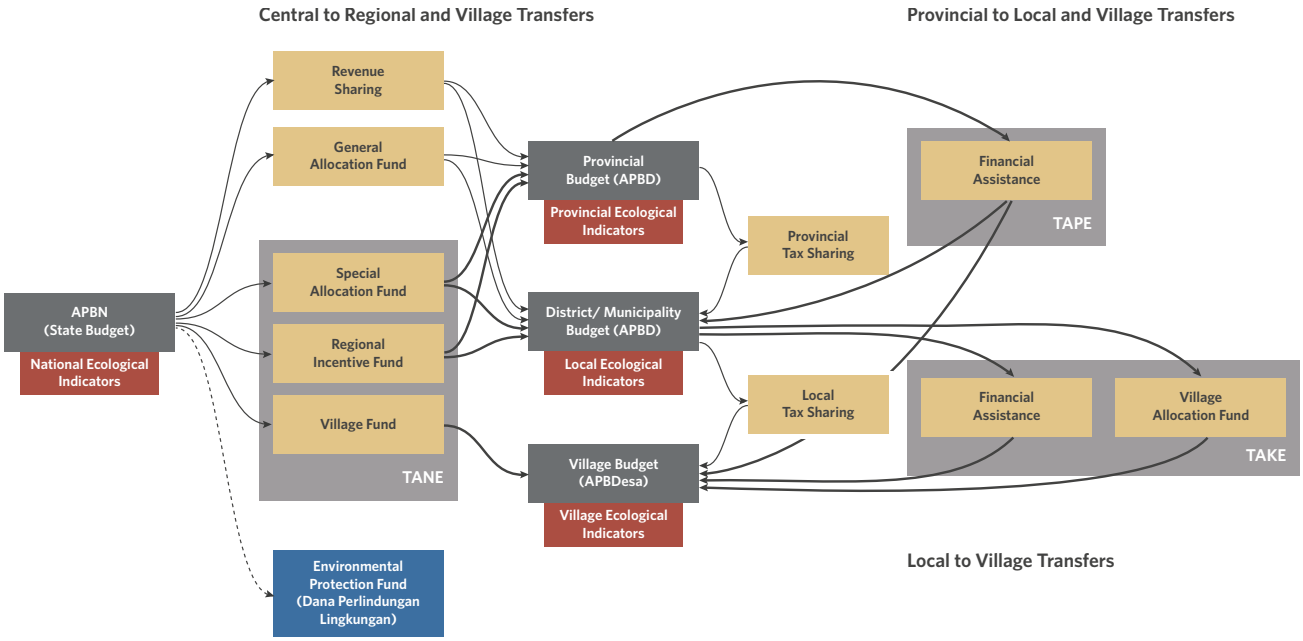
2.2 FISCAL REFORMS IN INDONESIA

Indonesia's fiscal transfer regime has already incorporated some ecological indicators, and designated fiscal instruments based on ecological performance. However, advocacy movements are pushing for ecological indicators to be considered as a factor in determining the amount of fiscal transfer received by the local government beneficiaries. Advocacy movements are usually conducted by civic society organizations and academia.

The growing acceptance on EFT is supported by several previous studies on incentives. Evidence shows the importance of fiscal incentives in supporting local actors for delivering ecological outcomes, particularly in the land-use and forestry sector (See Li 2016; Sutiyono et al. 2018; Thuy Tu et al. 2013; Wahyudi and Wicaksono 2020). This is because incentives are pivotal to induce changes in entrenched behaviors and policies at all levels of governments (Thuy Tu et al. 2013). Furthermore, basing fiscal on performance on conservation is also relevant in the context COVID-19, where limited fiscal capacities calls for fiscal e□ciency: to use as little public money as possible to deliver the most ecological outcomes

Three categories of reforms are currently underway: Central-to-local ecological fiscal transfer (Transfer Anggaran Nasional Berbasis Ekologi—TANE), Provincial-to-local ecological fiscal transfer (Transfer Anggaran Provinsi Berbasis Ekologi—TAPE), and Regency-to-local ecological fiscal transfer (Transfer Anggaran Kabupaten Berbasis Ekologi—TAKE)[6].

6 These three acronyms officially emerged from the report " Mengembangkan Transfer Fiskal berbasis Ekologi dari Pinggiran: Transfer Anggaran Provinsi berbasis Ekologi dan Turunan-Turunannya," in Bahasa, written by Erman A Rahman (The Asia Foundation), Tri Joko Haryanto (Fiscal Policy Agency), and R. Alam Surya Putra (The Asia Foundation).

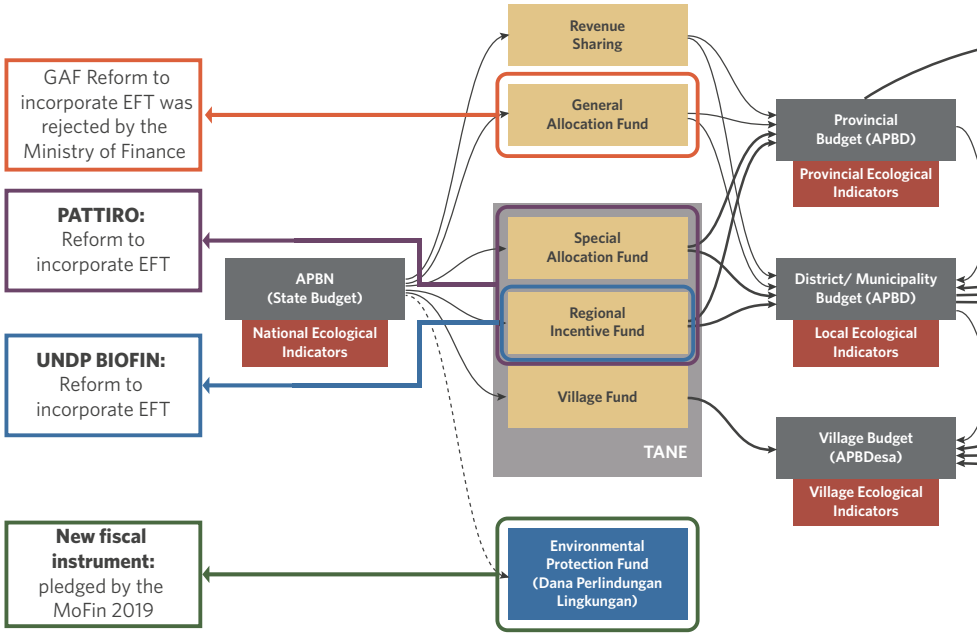


2.2.1 CENTRAL-TO-LOCAL FISCAL REFORM

At the national level, several non-governmental organizations have attempted to reform the Special Allocation Fund (*Dana Alokasi Khusus—DAK)* and Regional Incentive Fund *(Dana Insentif Daerah—DID)* instruments to incorporate sustainability indicators and reward local government performance on sustainability.

In the past, attempts were made to reform the General Purposes Fund *(Dana Alokasi Umum—DAU),* but the fiscal policy agency of the ministry of finance rejected these. This is because DAU instrument in particular is intended for balancing the inequality between localities, not for incentive purposes. Although the central government supports e□orts towards EFT reform that are advocated by CSOs, there has been no formal adoption so far.

Central to Regional and Village Transfers



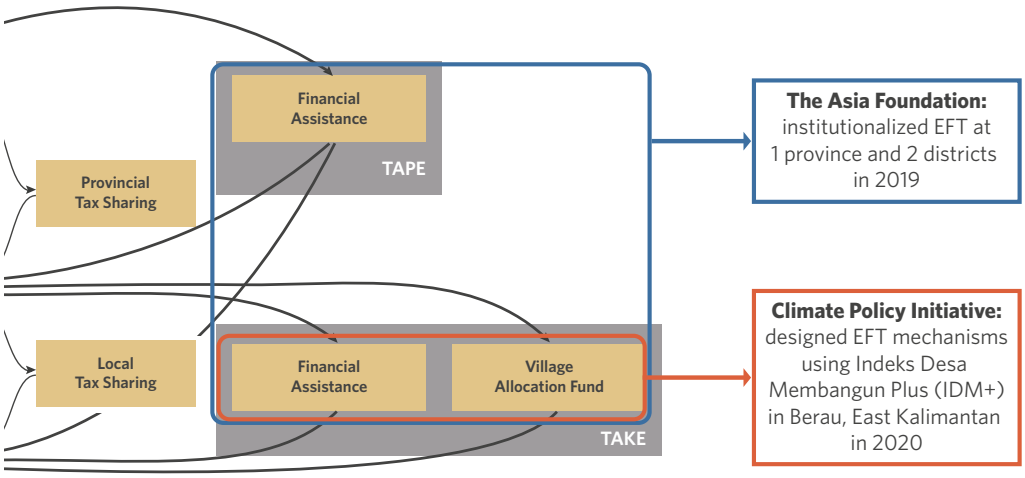
TANE: Central-to-Local transfers

2.2.2 PROVINCE-TO-LOCAL AND REGENCY-TO-LOCAL FISCAL REFORM

Many local governments are currently exploring EFT mechanisms, with the support of the central government. However, advocacy movements are often more successful at the local level than at the central level due to political performance and development priorities. Therefore, there are opportunities to enrich this discourse and fill in the gaps towards measuring ecological performance to deliver on-the-ground impact. There are two main transfer mechanisms at the local levels, i.e., province-to-local and regency-to-local fiscal transfers.

The case study on the Berau Regency, East Kalimantan, focuses on the latter and examines approaches to enable the Berau Regency government to use the ecological fiscal transfer mechanism in its villages.

Provincial to Local and Village Transfers



Local to Village Transfers

2.2.3 SPEED OF REFORM

Although fiscal reform occurs at all level of governments, our qualitative analysis suggests that reforms to incorporate sustainability are more likely to happen in the smaller administrative units

BOX 1. Reforms to incorporate EFTs based on the promoting institutions

	Fiscal Transfer Instruments	Proposed indicators	Promoting Institutions	Description
TANE (National-to-local)	Regional Incentive Fund (DID)	Biodiversity Indicators including coverage of protected areas, areas under sustainable management, and composite indices (air, water, and area coverage quality)	UNDP BIOFIN Indonesia, 2018	Besides the performance indicators, BIOFIN proposed 4 additional indicators serving as conditions for subnational government to be eligible for DID. These indicators include availability and quality of biodiversity planning documents, institutional capacity, and local biodiversity regulation
	Special Allocation Fund - Environment and Forestry Sector (DAK LHK)	Environment Quality Index (IKLH)	Pattiro, 2019	IKLH serves as one of indicators available to measure performance of environment development by provinces and national government. It is a composite index measuring environment quality consisting of three elements namely air quality index, water quality index, and land cover quality index; to date, IKLH data only covers provincial level and not applicable for districts/municipalities.
	Regional Incentive Fund (DID)	Environment Quality Index (IKLH)		
TAPE (Province-to-local)	Financial Assistance	Customized ecological performance index	The Asia Foundation, 2018	The formulation of indicators referred to relative variables reflecting ecological issues and priorities of implementing provinces. One province may have different/share similar ecological indicators compare to other provinces depending on each ecological context : case of North Kalimantan, the ecological index includes 17 indicators grouped in 5 criteria as follow: forest and land fire control and prevention in Other Use Area (APL/outside forest area); green open space (RTH); waste management; water resources protection; and air pollution prevention

TAKE (District-to-local)	Financial Assistance / Village Fund Allocation	Utilize the existing indicator: village development index (IDM / Indeks Desa Membangun)	The Asia Foundation, 2018	This index was developed by Ministry of Villages, Disadvantaged Regions, and Transmigration consisting of three sub index namely Economic Resilience Index, Social Resilience Index, and Ecological Resilience Index. The ecological resilience index reflecting two ecological issues at village level including environment conditions in general, and disaster
	(District of Jayapura and Nunukan)	Utilize the existing indicator: village development index (IDM / Indeks Desa Membangun)	The Asia Foundation, 2018	This index was developed by Ministry of Villages, Disadvantaged Regions, and Transmigration consisting of three sub index namely Economic Resilience Index, Social Resilience Index, and Ecological Resilience Index. The ecological resilience index reflecting two ecological issues at village level including environment conditions in general, and disaster potentials and mitigation.
	(North Kalimantan Province)	Customized ecological performance index	The Asia Foundation, 2018	The formulation of indicators referred to relative variables reflecting ecological issues and priorities of implementing provinces. One province may have di□erent / share similar ecological indicators compare to other provinces depending on each ecological context : case of North Kalimantan, the ecological index includes 17 indicators grouped in 5 criteria as follow: forest and land fire control and prevention in Other Use Area (APL / outside forest area); green open space (RTH); waste management; water resources protection; and air pollution prevention.

than at the central government level. Our analysis also indicates that intervention at the lowest level of administration should be prioritized to influence Indonesia's fiscal transfer regime as part of its governance structure to incorporate sustainability principles. This is because the latter is a low-hanging fruit, as it is easy to obtain concrete results with the specific locality's political support that would otherwise be difficult at the central government level.

The following table illustrates the pace of reforms happening at different levels of the government in Indonesia.

Table 1. Pace of fiscal reform to incorporate ecological principles in Indonesia.

Transfer Levels	Instrument	Description of Instrument	Indicators for Allocation	Pace of Reform
Central to Local	Revenue sharing (reforestation)	Levy from deforestation activities	60% for the central government, 40% for the producing regency	Slow, largely due to the low feasibility of regulatory amendment for ecological objectives
Central to Local	Special Allocation Fund (DAK) – Environment	Funds for physical projects related to wastewater management, air & water quality, and waste management	Environmental awards, critical watersheds, critical lakes, air quality monitoring protocol, existing accredited labs	Slow, largely due to the low feasibility of regulatory amendment for ecological objectives
Central to Local	Forestry DAK	Funds for forest and mangrove rehabilitation, Forestry Management Agency (KPH), national parks, equipment, and payment for ecosystem services	Critical lands, watershed, lakes, and mangroves; disaster-prone geographies, KPH, agro-forestry associations, silver/gold criteria, social forestry	Slow, largely due to the low feasibility of regulatory amendment for ecological objectives
Central to Local	Small-scale Energy DAK	Funds for renewable energy projects and rural electrification	Feasibility study, environmental impact assessments, allocated lands	Slow, largely due to the low feasibility of regulatory amendment for ecological objectives
Central to Local	Waste	Accelerating the	Designated municipalities for waste-to-energy facilities	Slow, largely due to the low feasibility of regulatory amendment for ecological objectives
Central to Local	Village Fund (DD)	Instrument to empower village-level planning; All villages are provided with ecological development guidelines.	All villages are independent: no authoritative indicators, Only guidelines on environmental spending are provided	Medium possibility for reform, not authoritative even if it occurs

Central to Local	Incentive Fund (DID) for Waste	Fiscal incentive to regencies or municipal governments who manage to reduce plastic waste	Local regulation on waste management, waste bank, plastic waste restriction policy	Medium possibility for reform, needs political will
Province to Local	Province Financial	Also known as Provincial EFT (TAPE). It rewards regencies or municipalities or municipalities with high environmental performance.	Regencies and municipalities that fulfill the province-made criteria. North Kalimantan is the only province that uses this instrument.	High depending on provincial-level political will and fiscal capacities
Regency to Villages	Village Fund	Also known as Regency EFT (TAKE). It rewards villages with high environmental performance.	Villages fulfilling the regency-made criteria criteria, such as Jayapura (Papua) and Nunukan (North Kalimantan) regencies	Highly depending on regency-level political will and fiscal capacities

2.3 SUSTAINABLE VILLAGE DEVELOPMENT INDEX (IDM+)

In collaboration with Berau Regency government, CPI proposes a new indicator called the Sustainable Village Development Index or (Indeks Desa Membangun Plus—IDM+) that would support a regency-level Ecological Fiscal Transfer capable of translating SDG priorities to the village level. IDM + bridges the gap in current ecological performance indicators, and builds on existing, widely used instruments such as the Village Development Evaluation (Index Pembangunan Desa—IPD)[7] and the Village Development Index (Indeks Desa Membangun—IDM)[8], to avoid lengthy bureaucratic adaptations and trainings.

7 IPD was first developed and published by the Center of Statistical Agency (Badan Pusat Statistik—BPS) together with Bappenas in 2014. Then BPS revised it in 2018 based on the evaluation of the 2014-2019 National Mid-Term Development (RPMJN) target. In the 2020-2024 RPMJN, the Village Development target still uses IPD with 3 classifications of village development. See more detail on https://www.bps.go.id/publication/2019/05/09/4edae4bd6c18d24b1b4273fe/indeks-pembangunan-desa-2018.html

8 IDM was first implemented based on Ministry of Village Regulation No. 2/2016 following the implementation of Law No. 6/2014 and Village Fund transfer. See more detail on https://idm.kemendesa.go.id/view/detil/1/tentang-idm

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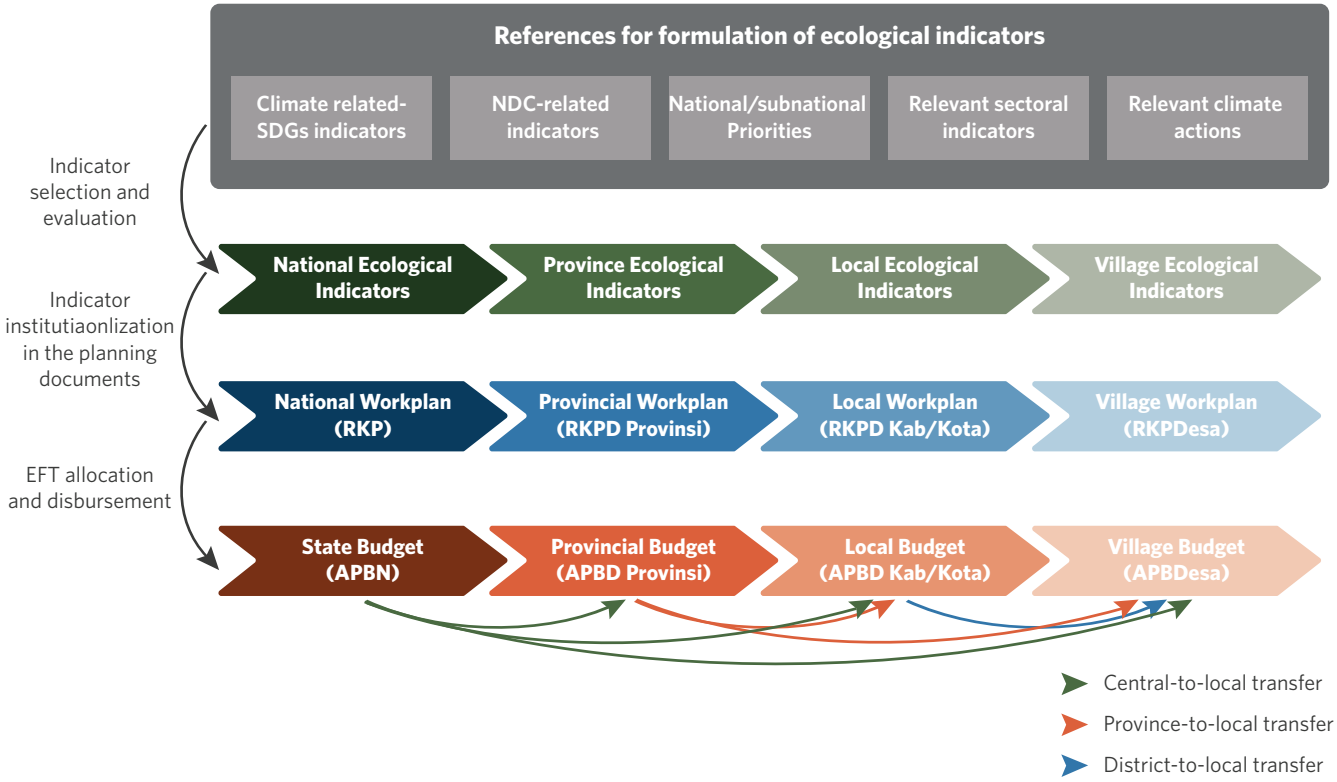
BOX 2. Framework to mainstream EFT into governmental planning and budgeting

Normally, fiscal reforms concerning EFT require new ecological indicators simultaneously. Thus, the enhanced design indicator needs to be incorporated into the local-government administrative process. The process of incorporation usually follows the flow below.



Civic society organizations (CSOs) are also coming up with locally-tailored ecological indicators, although these indicators are not necessarily connected to the fiscal framework.

Table 1. Ongoing reforms on the framework of ecological indicator mainstreaming

Promoting Institution	Institution Type	Description
Lingkar Temu Kabupaten Lestari (Roundtable on Sustainable Districts—LTKL)	Subnational Governments convened under CSO's supports	LTKL has been developing Local Competitiveness Framework (KDSD) as tool for evaluating sustainable jurisdictions for its members. The framework consist of 5 principles/criteria and 18 indicators synthesized from various relevant parameters. LTKL has no specific intention to link the framework to transfer instruments.
National Planning Agency (BAPPENAS)	Ministry	Currently, Bappenas is developing TERPERCAYA (Indicators to measure SDGs performance at subnational level) but still unclear pertaining its linkage to the existing fiscal transfer instruments
Earth Innovation Institute (Inobu)	CSO	Currently, Inobu is developing TERPERCAYA as indicators underpinning the Special Allocation Fund (Dana Alokasi Khusus

IDM+ adds 10 different ecological indicators which is divided into two main categories; One, land-use and natural resource management, under which there are two main indicators – village spatial planning and land-use innovation. And two, climate actions. Under climate actions there are 8 main indicators including environmental protection infrastructures, waste management, renewable energy, climate adaptation infrastructure, dual benefits (mitigation and adaptation), community-based environmental protection, community-based climate adaptation, and community-based dual benefits.

It is important to note that though the index adds important ecological performance indicators, it does not create a new index. These 10 IDM+ indicators are designed to be universally applicable across all villages, while also flexible to take on local characteristics. For example, some villages with specific goals might take on additional sub-indicators beyond the main 10 to showcase high performance.

IDM+ measures 10 different ecological indicators. It is thus more comprehensive than existing ecological evaluations, while also flexible to take on local characteristics. For example, in the case of Berau, IDM+ could have 4 sub-indicators in addition to the main 10.

In Berau, we would use the 10 IDM+ indicators as well as an additional 4 sub-indicators. The additional four indicators are agribusiness diversification, agricultural commodities diversification, agricultural products processing, and social forestry which account for local characteristics in measuring village ecological performances beyond forest cover.

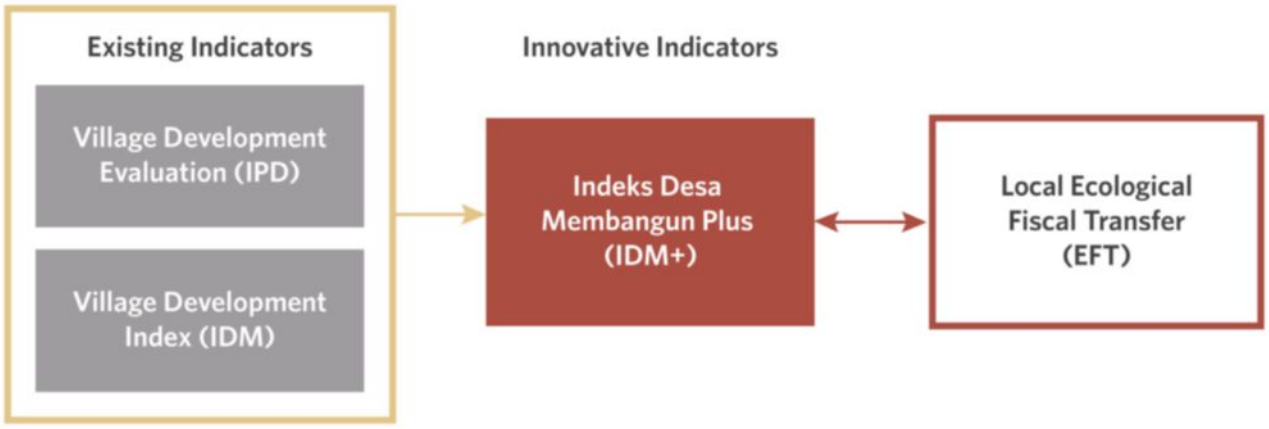
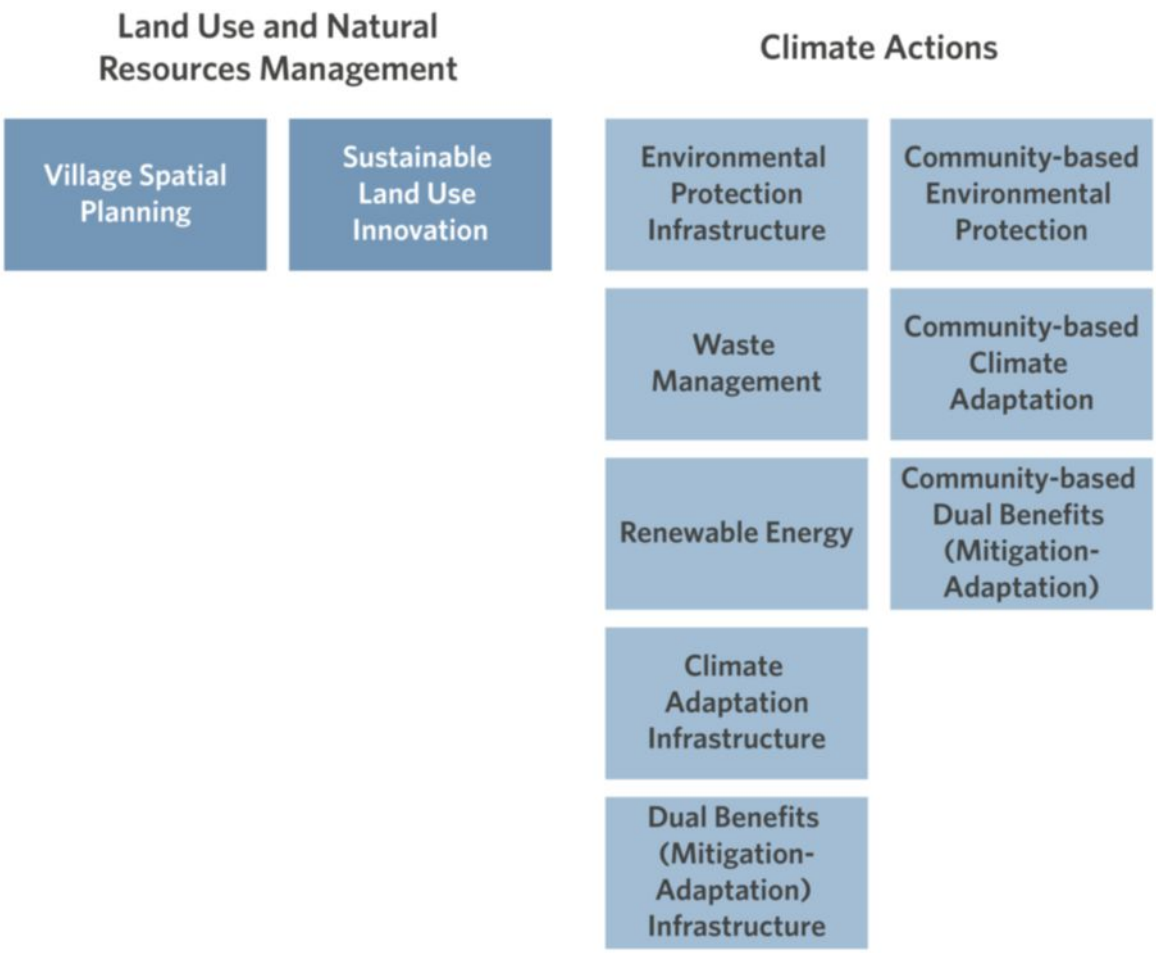


Figure 2. IDM+ 10 main indicators



3. CASE STUDY ON SUSTAINABLE VILLAGE DEVELOPMENT INDEX (IDM+) IN BERAU REGENCY, EAST KALIMANTAN

This chapter seeks to design, recommend, and model a suggested regency-to-village fiscal transfer mechanism: The Sustainable Village Development Index (IDM+).

3.1 UNDERSTANDING BERAU IN CONTEXT

With palm oil edging out other estate crops, Berau's economy currently lacks diversity and is unsustainable. Sustainable palm oil can be a starting point for economic growth. However, this needs to be hedged by a transition plan that prioritizes e□ciency over expansion, diversification into value-added products, and diversification into other crops (CPI, 2019). To execute the transition plan, Berau needs a su□cient amount of fiscal spending that is contingent on how e□ectively and e□ciently it manages its fiscal budget, which is often referred to as fiscal health.

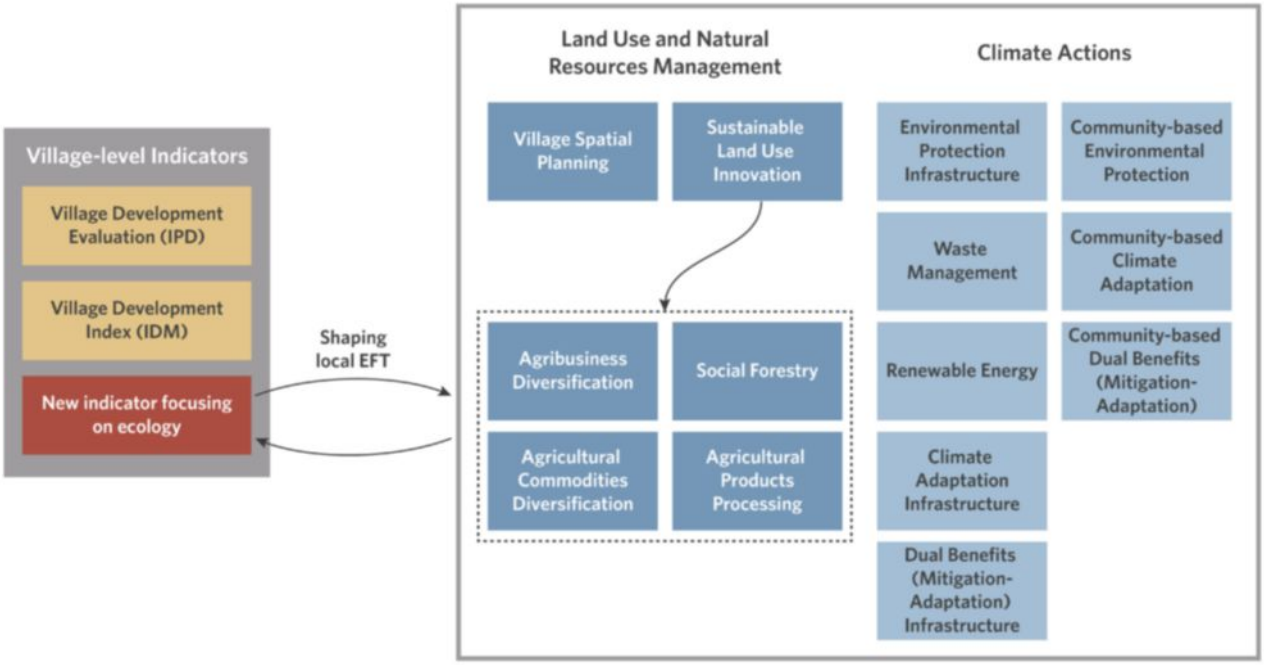
Berau's fiscal health can be supported by optimizing government revenue sources and improving budget allocations. Therefore, innovative fiscal transfer mechanisms need to be developed. Berau's inter-governmental fiscal transfer mechanisms could be improved to support the economic health of Berau's villages, and prioritize sustainability and diversification by making transfers conditional upon the achievement of certain sustainability performance indicators.

Central-to-regional fiscal transfer mechanisms show promise, as they already incorporate some degree of direct or indirect ecological variables. However, this relies on central government willingness for reform. New fiscal transfer mechanisms are being developed that focus on province-to-regency (TAPE) and regency-to-village transfers (TAKE). These insert ecological criteria. However, most formulas for TAPE only forest cover as a variable. This discriminates against regencies or municipalities that do not have any forest cover at all, but may have policies that support sustainability (such as sustainable marine areas or urban parks).

3.2 SUSTAINABLE VILLAGE DEVELOPMENT INDEX (IDM+) PILOTING IN BERAU

IDM+ is complementary to a rich array of initiatives taken up by civil society organizations and academia in recent years to push for Ecological Fiscal Transfers. These initiatives recommend including ecological indicators as a criterion to determine

the amount of fiscal transfer received by local government beneficiaries[9].
As a case study, CPI looked at the Berau District of East Kalimantan to understand how such a transfer mechanism might be applied. We evaluated 100 villages based on the 10 IDM+ indicators as well as an additional 4 sub-indicators. The additional four indicators are agribusiness diversification, agricultural commodities diversification, agricultural products processing, and social forestry[10].



The higher number of indicators allow the evaluation methods to account for Berau's geographical diversity—more than just forest cover. This shows that IDM+ is capable of measuring a wide range of environmental indicators—giving Berau's diverse villages a fair competitive start.

Each indicator is scored based on 5 degrees on the Likert scale. Each indicator evaluates the environmental performance of a village based on five ratings: very high, high, improving, low, and very low.

Likert Scale Categories	Index Level
Very High	85-100
High	75-85
Improving	50-75
Low	30-50
Very Low	0-30

9 Since 2018, there has been emerging advocacy movement for ecological fiscal transfer which was adopted by several localities, such as Indonesia's Jayapura Regency (2017), Nunukan Regency (2020), and North Kalimantan Province (2020). For more detail see Suryaputra (2019)

10 On the addition of social forestry in the indicator: although social forestry programs are implemented in the forest area which is under the authority of provincial or central government, the village governments have pivotal roles in assisting the licensing process for social forestry. Hence, the "performance" for this indicator will refer to this aspect.

3.2.1 DIRECT SURVEY

We conducted direct surveys on 100 villages in Berau's 12 districts using IDM+ indicators. The survey shows that 67% of villages have agendas that include sustainable activities, although the general performance is low. Most villages are at the very low (48/100) and low (35/100) performance levels. Survey result indicate that the diversification of agricultural commodities has the strongest score. Meanwhile, village spatial planning and social forestry has the lowest performance across villages.

IDM+ illustrates the state of environmental performance across villages in Berau—highlighting which aspect needs the most support.

	Indicator	1	2	3	4	5
1	Village spatial	84	6	7	2	1
2	Agribusiness	0	16	45	32	7
3	Agri-commodities	8	11	11	10	60
4	Agri-processing	18	32	30	11	9
5	Land-use innovation	24	38	28	6	4
6	Social forestry	73	14	10	1	2
7	Environmental protection	34	20	17	16	13
8	Waste management	42	21	11	20	6
9	Renewable energy	46	45	6	2	1
10	Comm-based env protection	25	27	17	15	16
11	Climate adaptation	34	20	14	14	18
12	Comm-based climate adaptation	31	28	18	14	9
13	Dual benefits	27	27	25	15	6
14	Comm-based dual benefits	27	32	17	15	9

3.2.2 VILLAGES AS MEASURED BY IDM+

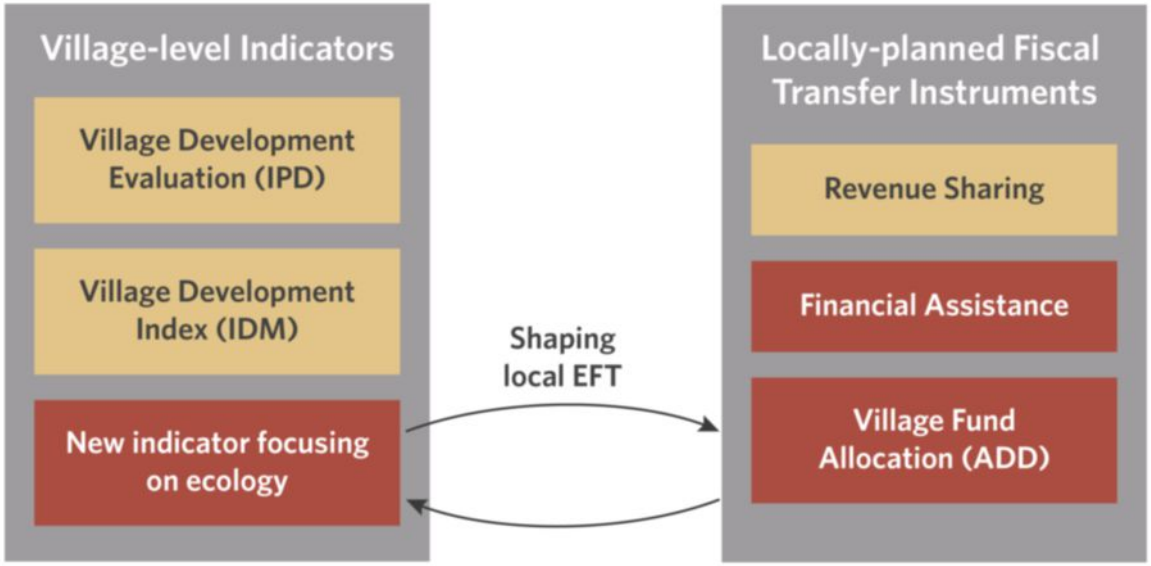
The survey showed that Sido Bangen village, located near the Sungai Lesan Conservation Forest, scored the highest under IDM+ while four villages located in Maratua district scored the least. Further research is required to investigate why these villages scored so low and if their geographical location near the ocean has a role to play.

No.	Village	District	Score	IDM+
1	Sido Bangen	Kelay	61	83.93
2	Sukan Tengah	Sambailung	59	80.36
3	Gurimbang	Sambailung	56	75
4	Tasuk	Gunung Tabur	54	71.43
5	Temnudan	Batu Putih	53	69.64
6	Labanan Makmur	Teluk Bayur	52	67.86
7	Biduk-Biduk	Biduk-Biduk	52	67.86
8	Bena Baru	Sambailung	51	66.07
9	Merabu	Kelay	49	62.50
10	Maluang	Gunung Tabur	46	57.14
11	Kasai	Palau Derawan	46	57.14
12	Teluk Semanting	Palau Derawan	45	55.36
95	Mapulu	Kelay	17	5.36
96	Biatan Bapinan	Biatan	17	5.36
97	Bohe silian	Maratua	15	1.79
98	Payung-payung	Maratua	15	1.79
99	Teluk Alulu	Maratua	15	1.79
100	Teluk harapan	MaratuaTabur	15	1.79

3.3 POLICY OPTIONS FOR BERAU TO FOLLOW THROUGH WITH IDM+

There are various fiscal instruments that Berau's government can use to incentivize village performance as measured by IDM+.

In the case of fiscal transfer from the regency to villages such as Berau, instruments such as village fund allocation *(Alokasi Dana Desa—ADD)* or the regency financial assistance (Bantuan Keuangan Kabupaten), or a mix of both can be used. The choice of which instrument can relate with the IDM+ indicator is contingent on Berau's fiscal capacity, political support, and development priorities.



3.3.1 POLICY OPTION 1: REFORMULATION OF VILLAGE FUND ALLOCATION (ADD)

The regency's ADD fiscal transfer to villages is normally calculated based on minimum ADD (ADD-M) + proportional ADD (ADD-P). ADD-M is contingent on the fixed cost of village-government administration such as the income of the village head and village o□cials, while ADD-P is contingent on four key factors i.e., village population, poverty rate, total area, and geographical terrain with their respective weightings.

The main issue with this option is the change in the formulation of the ADD distribution to each village. The rule of thumb is to share the regency's money proportionately with each village based on their need.

Apart from the need to cover the income of village o□cials using ADD, the regency government has full authority in determining the proportion of allocation and variable weighting, including the addition of new variables. This includes environmental performance variables. The proposed ADD reformulation is summarized in the following table:

Table 2. ADD Reformulation in Berau Regency

	Nation-wide Regencies (Government Regulation 43 Year 2014 as amended by Government Regulation 11 Year 2019)	Berau Regency
Existing formula as stipulated in the regulation	**ADD = ADD-M + ADD-P** ADD = the amount of ADD received by each village. ADD-M = Minimum ADD allocation (*ADD Merata)* or the sum of the regency's ADD divided by all villages in the regency. Each village will get the same amount of ADD. ADD-M must meet the minimum costs of village o□cials' salary; the bigger the allocation of ADD-M, the smaller the amount of ADD-P. ADD-P = Proportionate ADD allocation (*ADD Proporsional)*	**ADD = ADD-M (70%) + ADD-P (30%)** ADD is the amount of ADD received by each village. ADD-M = Minimum ADD allocation (*ADD Merata)* or the sum of the regency's ADD divided by all villages in the regency. Each village will get the same amount of ADD. ADD-P = Proportionate ADD allocation *(ADD Proporsional)* This percentage is defined by a regent regulation.
ADD reformulation to add the ecological dimension	**ADD = ADD-M + ADD-P + ADD-K** ADD-M = Basic allocation based on a village's fixed income and apparatus costs. ADD-P = Proportionate allocation based on normative variable ADD-K = Performance/incentive-based allocation (*Alokasi Kinerja/ Insentif)* based on the ecological performance indicator (IDM+ indicators) ADD-P and ADD-K = Calculated after the need for ADD-M is fulfilled ADD-P proportion is bigger than the ADD-K ADD-K proportion considers the number of villages with good performance and the expected level of competition. The greater the expected level of competition, the greater the budget that needs to be allocated.	The designated trial models for ADD reformulation in Berau Regency are as follows:[1] **Model 1** **ADD = ADD-M (70%) + ADD-P (25%) + ADD-K (5%); in which ADD-K is ecological performance** **Model 2** **ADD = ADD-M (50%) + ADD-P (40%) + ADD-K (10%); in which ADD-K is ecological performance** **Model 3** **ADD = ADD-M (60%) + ADD-P (30%) + ADD-K (10%); in which ADD-K is ecological performance**

1 The new Government Regulation 11 Year 2019 which stipulated that the use of ADD should be prioritized for village apparatus. This results in several regencies in Indonesia to have the proportion of ADD-M at the range of 80-85%; although it is not the case in Berau Regency until 2020 where it allocates ADD-M at the range of ~70%

ADD Case Study in Berau: ADD Reformulation Simulation using IDM+

In Berau, the term **ADD** *(Alokasi Dana Desa*—village fund allocation) is replaced by its equivalent, namely **ADK** (*Alokasi Dana Kampung*—village fund allocation).

The amount of regency to village transfer through ADK is annually renewed through the regent's regulation. Therefore, the ADK's transfer value in Berau through 2016-2020 is not stable. From IDR 160 billion in 2016, the value increased to IDR 225 billion in 2017. It then decreased to IDR 144 billion in 2018 and rose again to IDR 225 billion in 2019. It dropped to IDR 141 billion in 2020. With a total of 100 villages, the highest ADK was IDR 225 billion in 2017 and 2020, whereas the lowest ADK average occurred in 2020.

Despite the very high volatility in the amount of ADK received by villages, this illustrates that villages in Berau are used to these changes and are adapting to them. Although the amount fluctuates, the average ADK received by each village in Berau Regency (more than IDR 1 billion/village) is still relatively higher than the national average.

Berau's ADK is distributed to all villages with the formula ADK = ADK-M + ADK-P, where the minimal ADK (ADK-M) is divided evenly and the proportionate ADK (ADK-P) is divided based on 4 normative variables (population number, poverty rate, area, and geographic di□culties). The proportions of ADK-M and ADK-P have undergone several changes. For example in 2018, the proportion was 60:40 compared to 70:30 in 2019 and 2020. Likewise, the weight of the normative variable has changed from the composition of 50:10:20:10 in 2018 to 60:20:10:10 in 2019 and 2020. This suggests that changes in proportion and weight are not new to the villages in Berau.

Ideally, the ADK reformulation in Berau should refer to 3 considerations. These are the basic allocation for the needs of the village head and village apparatus, proportional allocation, and performance or incentive-based allocation. Therefore, we reformulated Berau ADK's formula to incorporate the ecological performance indicator as follows:

ADK = ADK-M + ADK-P + ADK-L

ADK-L (*ADK Lestari:* equivalent to performance on ecological governance) is calculated based on the village sustainability development index (IDM+)

The proposed simulation does not change the weight of the normative variables for ADK-M or ADK-P. Instead, it tries to change the proportion of its allocation structure by developing 3 proportional models. Furthermore, it is a zero-sum game in nature, and it is assumed that there is no additional budget for this policy. Therefore, each model will create fiscal-winning and fiscal-losing villages. It is assumed that the ADK allocation in Berau for 2021 is similar to the allocation in 2019, which amounts to a total of IDR 225 billion for 100 villages.

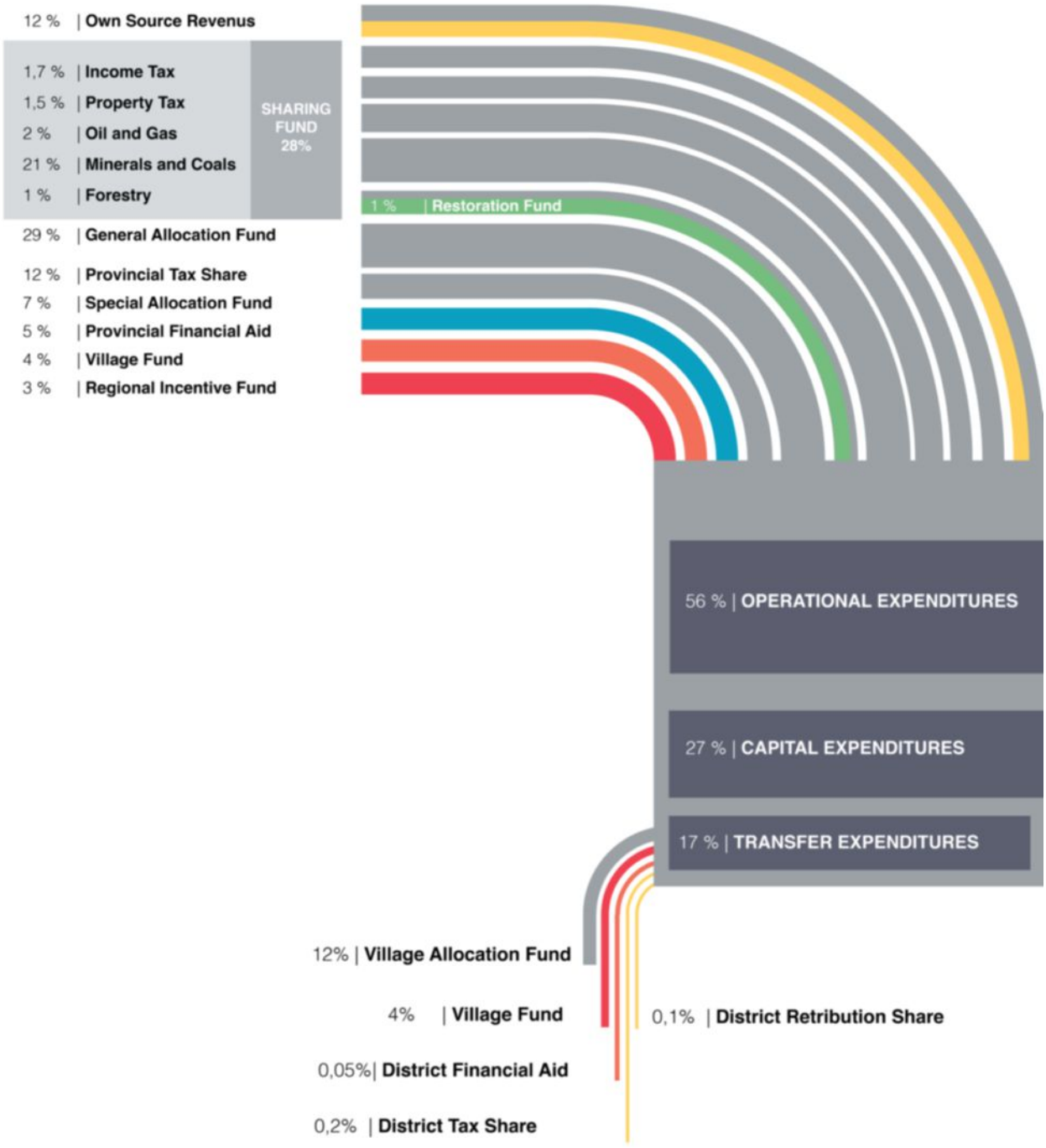
ADD-IDM+ Compared to ADD 2019	IDM+ Categories	Model 1 ADK M70+P25+L5			Model 2 ADK M50+P40+L10			Model 3 ADK M60-P30-L10		
		Number of Villages	% Increase (Decrease)	Incentive Average	Number of Villages	% Increase (Decrease)	Incentive Average	Number of Villages	% Increase (Decrease)	Incentive Average
Winning villages (higher ADD received than 2019)	Very High	0			0			0		
	High	1	12%	243,620,617	2	10% - 15%	288,968,760	2	4% - 18%	237,985,385
	Improving	7	1% - 9%	144,779,885	15	2% - 12%	157,114,036	10	3% - 13%	168,873,916
	Low	32	0.2% - 7%	82,048,086	31	0.4% - 4%	49,925,891	33	0.3% - 7%	68,499,631
	Very Low	23	0.01% - 3%	37,336,943	0			6	1%	16,126,141
	Total	**63**			**48**			**51**		
Losing villages (lower ADD received than 2019)	Very High	0			0			0		
	High	1	-4%		0			0		
	Improving	8	(3%) - (20%)		0			5	(1%) - (12%)	
	Low	16	(1%) - (9%)		17	(0.1%) - (2%)		15	(0.2%) - (6%)	
	Very Low	12	(0.1%) - (7%)		35	(2%) - (11%)		29	(0.2%) - (10%)	
	Total	**37**			**52**			**49**		

Our result shows that compared to 2019 baselines, it is difficult to analyze the convergence of incentive effects by merely changing the formula. While model 2 appears to be more practical in terms of average ADK incentive for fiscal-winning villages at reasonable rates, it also creates more fiscal-losing villages. The other two models (model 1 and 3) are not feasible as the models create disincentives for villages that demonstrate a high and improving status of ecological performance. The simulation also shows that the higher the proportion of ADK-M, the smaller the resulting incentive effects. It is necessary to reduce the proportion of ADK-M to produce a higher incentive effect capable of encouraging behavior change that supports sustainable development.

However, adding ecological indicators in the ADK allocation formula can still enable political support for village-level ecological governance. In the case of Berau, ADK reformulation to support ecological performance can be carried out based on the following recommendations:

1. Change the ADK formula to include a new element of ecological performance-based fiscal transfer, so that the formula becomes:
2. Change the proportion and distribution method of ADK-M by referring to the provisions of the latest government regulation
3. Reallocate the ADK-M proportion to increase the ADK-P and ADK-L, provided that the ADK-P is more than the proportion ADK-L.
4. Carry out several simulation models such as the examples in the table to find the right composition by considering the real adequacy of the basic allocation, the fairness of distribution between villages and the expected incentive effects.
5. Revise regency regulations regarding the allocation and distribution of ADK.

3.4.1 POLICY OPTION 2: SUSTAINABLE VILLAGE INCENTIVE FUND (IDM+ FUND) SCHEME



At the national level, the regional incentive fund *(Dana Insentif Daerah—DID) is given to local governments based on certain performance categories determined by the central government. Comparable to the DID model, the sustainable village incentive fund scheme is designed by the regency government as a fiscal incentive instrument based on IDM+ for certain villages that meet the criteria for a sustainable village.*

Berau case study: The survey highlights the top 12 villages with the strongest IDM+ score

In this scenario, the preliminary results from the IDM+ are used to underpin the allocation of the regency's incentives. Based on the IDM+, the top 12 villages are identified. These include two villages with high sustainability status and ten villages with improving sustainability status.

In this simulation, total fiscal incentive allocation is assumed at IDR 1.4 billion, which is equivalent to 1% of the Berau village fund allocation in 2020. The incentive is then divided proportionally based on the IDM+ scores of the villages. The higher the score of sustainable indexes (IDM+), the bigger the portion of fiscal incentives received.

No.	Village	District	Score	Indeks Desa Membangun Plus (IDM+)	Status	Proportion of Incentives	Rank	Fiscal Incentive (IDR)
1	Sido Bangen	Kelay	61	83.93	High	10.31%	1	14,53,28,947
2	Sukan Tengah	Sambailung	59	80.36	High	9.87%	2	13,91,44,737
3	Gurimbang	Sambailung	56	75	Improving	9.21%	3	12,98,68,421
4	Tasuk	Gunung Tabur	54	71.43	Improving	8.77%	4	12,36,84,211
5	Temnudan	Batu Putih	53	69.64	Improving	8.55%	5	12,05,92,105
6	Labanan Makmur	Teluk Bayur	52	67.86	Improving	8.33%	6	11,75,00,000
7	Biduk-Biduk	Biduk-Biduk	52	67.86	Improving	8.33%	6	11,75,00,000
8	Bena Baru	Sambailung	51	66.07	Improving	8.11%	7	11,44,07,895
9	Merabu	Kelay	49	62.50	Improving	7.68%	8	10,82,23,684
10	Maluang	Gunung Tabur	46	57.14	Improving	7.02%	9	9,89,47,368

This policy option will require a new regent regulation that manages the manual allocation of the incentives or financial assistance instruments based on the IDM+ index score.

3.5.1 POLICY OPTION 3: MIXED INCENTIVES AND ASSISTANCE SCHEME

Another possible option, specific to Berau, is the residual of Revenue Sharing Fund for Reforestation instrument (Dana Bagi Hasil Dana Reboisasi—DBH DR). Berau can levy from reforestation activities to fund the fiscal incentives for villages. To date, Berau has the highest untapped DBH DR fund in East Kalimantan, amounting to IDR 358 billion. Unless this fund is utilized immediately, Berau's fiscal revenue is at risk as the central government is obliged to reduce its budget due to ine□cient spending (PATTIRO, 2020).

Nationwide, if the regency government can mobilize other sources of funding outside the regency's budget, such as CSR funds, donor or non-profit grants, and philanthropic donations, the regency government can optimize this policy scenario. This combined policy brings together a fiscal incentive approach for well-performing sustainable villages with financial assistance for villages that perform poorly under ecological governance.

An evaluation of the level of village sustainability, as measured in the IDM+, o□ers information regarding those villages that deserve incentives as well as those that deserve assistance. This policy provides an opportunity for all villages to increase their sustainability status. Some of the policy mix options are listed in the following table:

Table 3. Mixed incentive and assistance scheme

Instruments mixed	Incentive instrument	Assistance instrument
• ADD • Regency financial assistance • Specific to Berau: Reforestation Fund (DBH DR)	• Reformulated ADD • Specific to Berau: Untapped DBH DR	Regency financial assistance
• ADD • Program funding such as CSR, grant, donor, NGO or philanthropy • Specific to Berau: Reforestation Fund (DBH DR)	• Reformulated ADD • Specific to Berau: Untapped DBH DR	Program funding such as CSR, grant, donor, NGO or philanthropy
• Sustainable village incentive fund (IDM+ Fund) • Program funding such as CSR, grant, donor, NGO or philanthropy • Specific to Berau: Reforestation Fund (DBH DR)	• Sustainable village incentive fund or IDM+ fund • Specific to Berau: IDM+ fund can be sourced from the untapped DBH DR	Program funding such as CSR, grant, donor, NGO or philanthropy

3.6.1 SELECTING THE MOST SUITABLE FISCAL INSTRUMENT

Each fiscal instrument described above has its own characteristics, advantages, and disadvantages as an instrument for ecological fiscal transfer. The choice of the right instrument is influenced by several supporting factors, including political and regulatory aspects, policy, and budget availability as well as technical feasibility.

The table below o□ers an illustration of the qualitative risk-opportunity analysis of three policy options that explain the risks and opportunities and what can be done to handle these risks (mitigation). Regency governments, not just Berau, can carry out a similar analysis based on data and the real conditions of the ongoing transfer policy, including the factors that influence the decision of the transfer policy to villages.

Table 4. Selecting the most suitable fiscal instrument for regency ecological fiscal transfer

Fiscal Instruments	Description	Risks	Opportunities	Mitigation
Village allocation fund (ADD/ADK)	This fiscal transfer instrument has been established and is mandatory. The size of transfer is determined at a minimum of 10% of the local balancing fund minus the specific allocation fund. There is a specific aspect where the local governments have the authority to reform or revise the formula.	By changing the ADD/ ADK formula, resistance is expected from villages that lose their ADD compared to the previous fiscal year.	Through reformulating ADD: It can be implemented without an additional budget. It is more sustainable as having ADD/ADK instrument is mandatory. It requires no additional regulation except for a simple regent-level revision to incorporate the ecological index into the ADD/ADK formula.	Apply 'on-top' policy by optimizing an incremental increase of ADD/ ADK allocation so that at the very least, the minimum ADD/ ADK received by each village is similar to the previous allocation.
Financial assistance (Bantuan Keuangan)	By regulation, local governments are allowed to develop new financial assistance schemes where required to address certain objectives and local governments need to be willing to do so.	This requires new budget allocation and stronger fiscal capacity. It is not mandatory and susceptible to being revoked. It requires new regulation (Peraturan Bupati for regencies and Peraturan Gubernur for provinces) to implement.	All villages have the opportunity to win. This may create competition between villages to improve ecological performance if it is designed properly. Rising demand from villages for this instrument	Optimize incremental increase of local revenues or reallocate budgets from idle or low prioritized spending. For instance, reassign budget cuts from travel or events canceled due to the Covid-19 pandemic.
Mixed instruments	While incentivizing the higher ecological performance villages, the regency government can also assist villages with lower performance by developing programs that address their specific ecological issues.	Mixed instruments require additional budget for developing programs in related sectoral o□ces Strong financial accountability standards are required to handle o□-government budget	All villages have the opportunity to increase their ecological performance. No new regulation is required.	Optimize the incremental increase of local revenues or reallocating budgets from idle or low priority spending. For instance, reassign budget cuts from travel or events canceled due to the Covid-19 pandemic.

FEASIBILITY OF ADD REFORMULATION AND SUSTAINABLE VILLAGE INCENTIVE FUND (IDM+ FUND)

Berau regency can determine which fiscal instrument is appropriate for di□erent regions within the regency based on the risks-opportunities analysis illustration above. For instance, if a regency has experienced a decline in financial capacity due to decreased regional income, such as the Covid-19 pandemic situation, then the choice of instrument will be prioritized on ADD reformulation. This can be implemented without an additional budget requirement. Even though there was a decline in financial capacity, regencies still made ADD transfers because

this instrument was mandatory. Regency governments only need to change the distribution formula to include performance indicators (ecological) into the ADD calculation formula. In terms of fiscal capacity, the ADD instrument is relatively more feasible than other instrument choices.

From the regulatory aspect, the sustainable village incentive fund (IDM+ fund) instrument requires additional regulations to be implemented, while ADD is only to revise the existing ADD regulations. Regencies can be informed that they already have a regent regulation on ADD, and therefore, they only need to revise the provisions regarding the ADD formula. Meanwhile, if the regency chooses the sustainable village incentive fund scheme through other financial assistance instruments, an additional regulation is needed as the legal basis for its implementation. Therefore, based on this aspect, the two instruments have relatively the same levels of feasibility.

Meanwhile, from the aspect of potential resistance from the village government, transfer policies that have an impact on increasing village income will be accepted by the village government. Conversely, if the policy choice causes a decrease in transfers to the village, that choice will receive a negative response. From this perspective, the IDM+ fund instrument has the potential to be more acceptable than the ADD reformulation because it will be perceived by the village as a new source of revenue. On the other hand, assuming there is no additional budget, ADD reformulation will create a phenomenon of fiscal winning-losing villages. This condition can be perceived by the village as a source of uncertainty and a threat to the source of village revenue, especially if it is not socialized clearly and transparently. The mitigation e□ort must implement an ADD on top transfer policy that ensures that the ADD received by the village is at least the same as the ADD received during the previous year. From this perspective, the two instruments have the same weakness, namely requiring additional budgets to mitigate the shortfall.

3.4 RECOMMENDED POLICY FOR BERAU: MIXED FISCAL INSTRUMENTS (POLICY OPTION 3) FOR OPTIMUM IMPLICATIONS

Based on the risk-opportunity analysis, the possibility of a mix of fiscal instruments with other schemes appears to be an optimal option. This option allows the regency to carry out an incentive approach as well as assistance or a□rmative actions to villages based on the results of evaluating the level of village sustainability. Villages with a good level of sustainability are appreciated with incentives while villages that are still weak or lacking the level of sustainability will receive assistance to increase their sustainability level.

This choice is in line with the principle of inclusive sustainable development. No one is left behind, because all villages have equitable opportunities and access to resources to improve their performance. Additionally, implementing public-private partnerships (PPP), requires leadership and cooperation between the government, the private sector, and other development partners.

This mix of instruments has weaknesses such as the possibility of a new budget requirement if the combination involves a new instrument of the sustainable village incentive fund (IDM+ fund). Another weakness is the need for coordination and synchronization of budget

policies and programs that involve many parties. These weaknesses can be mitigated by reallocating the budget or mobilizing sources of funding outside the provincial budget through cooperation with third parties from the private sector, donors or NGOs, philanthropic groups and other development partners. Thus, commitment and leadership from the regional head are the key success factors.

3.4.1 PLANS TO IMPLEMENT THE RECOMMENDED SOLUTION

To enable the Berau government to implement the IDM+ fiscal framework, they need to redesign their regulatory framework by issuing a Regent Regulation (Peraturan Bupati) to base the EFT mechanism. Policy option 3 is a mixed policy involving the current ADD or ADK and program assistance from relevant o□cials which are complementary. The proposed steps are:

1. Clear dissemination to inform policy makers that IDM+ is built based on the existing performance indicators and fiscal instruments, by including ecological emphasis on the performance indicators. No new regulation is required. All villages are likely to improve their ecological performance when possible. However, the regency's political support or regency regulation will be required to facilitate IDM+ into the ADD formula.
2. Encourage commitment from village heads during and after policy implementation as this policy requires leadership and cooperation between the government, the private sector, and other development partners.
3. Knowledge and capacity building from all relevant stakeholders on IDM+ and ecological fiscal transfer, including state and regional governments, funders and program assistance to enhance and develop, the knowledge, tools, equipment, and other resources needed for successful implementation and continuous improvement in village sustainability.

Once implemented effectively, ecological fiscal transfer using IDM+ has the potential to greening the sub-national budget structure. Considerable size of performance-based transfers will lead to positive behavioral change of the sub-national government to support environmental protection.

3.5 IMPLEMENTING IDM+ ON THE OTHER REGENCIES/ MUNICIPALITIES OR DIFFERENT GOVERNMENT LEVEL SUCH AS PROVINCES

IDM+ has the potential to bridge the gap in current ecological performance indicators by holistically and objectively measuring the environmental performance of each village while taking their geographical diversity into account. IDM+ acts as a reward system to leverage implementation of village-level SDG priorities, which connects fiscal transfer instruments to deliver incentives based on performance.

Given that IDM+ uses similar measurement techniques to existing instruments, replication to other regencies and municipalities can happen with minimal intervention. Simply echoing the implementation steps adopted by Berau's government should su□ce. These steps include: socializing with IDM+ mechanism, commitment and cooperation from village-to-region heads during implementation, and continuous capacity building to ensure equitable and sustainable development of villages.

At national level, the government would just tweak or add to the existing EFT mechanism, so it compliments IDM+. Indicators chosen in IDM+ are in sync with the central-local environmental development plan (e.g. Ministry of Home A□airs Regulation, Village Fund Spending Priorities, Regency Mid-term Development Plan), hence it synchronizes well with the national-local SDGs while highlighting the role of ecological-based fiscal transfers (EFT).

We recommend the following steps to the Central Government to help Berau's EFT implementation as well as all other interested regencies nationwide:

1. Continue to endorse the implementation of EFT across localities in Indonesia at the political and regulatory levels. Wide political support, particularly by the Ministry of Finance, is pivotal for local governments to tailor fiscal transfers underpinned by sustainability indicators.
2. Explore the possibility of incorporating IDM+ into IDM by the Ministry of Villages. This would help mainstream ecological performance evaluation down to the village-level across Indonesia.

4. ANALYSIS AND POLICY IMPLICATIONS

The case study for Berau opens up the possibility for further analysis and policy implications not only in the case of Berau itself, but also on a national scale.

This chapter attempts to further analyze the wider impact of this study and the follow-up actions that are necessary for growth.

4.1 INCORPORATING SUSTAINABILITY TO FISCAL FRAMEWORK WILL PLAY A STRATEGIC ROLE IN SUPPORTING VILLAGE-LEVEL SDG IMPLEMENTATION

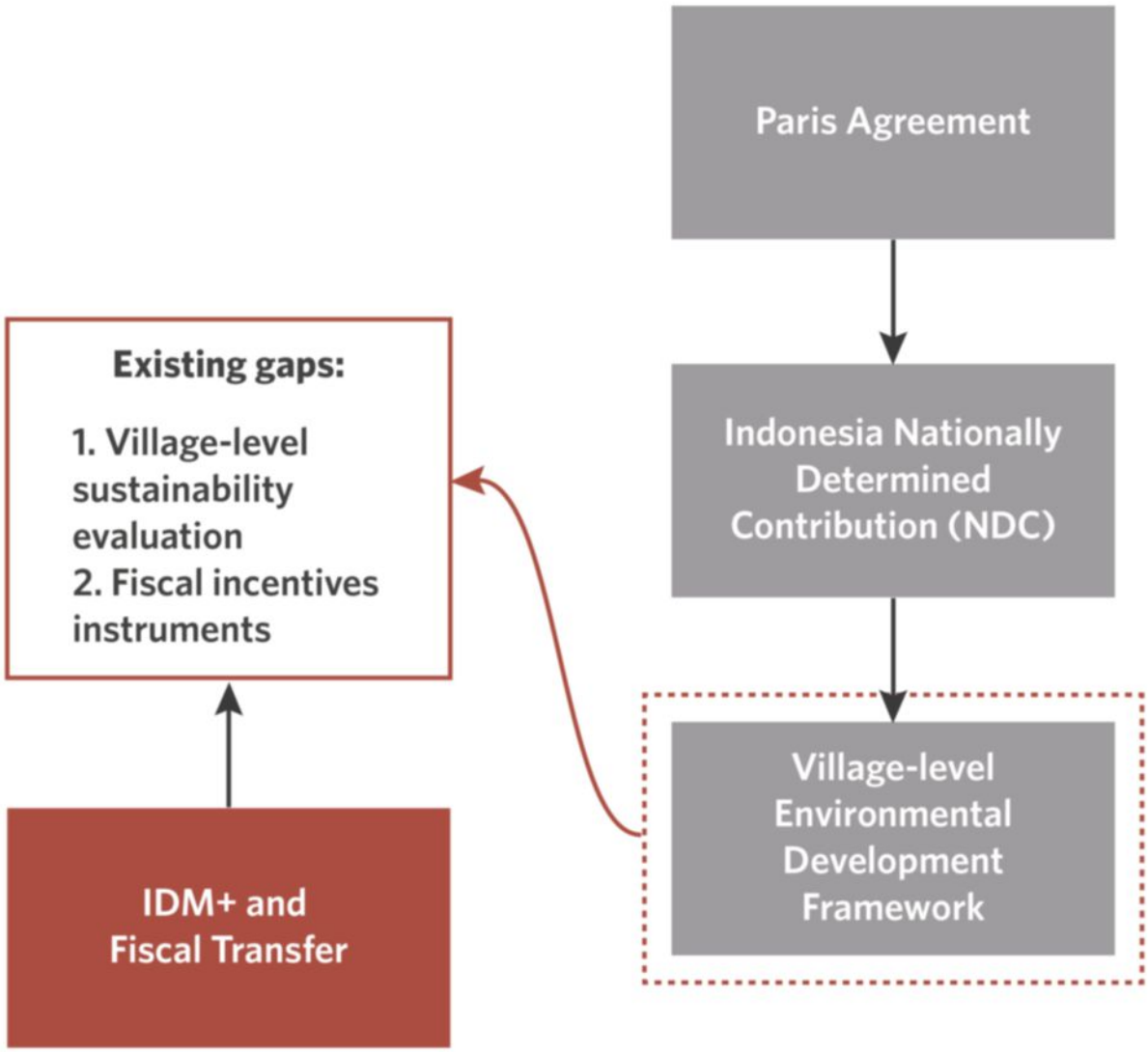
To provide a push for improvement, villages that are proven to have the highest environmental performance need to be rewarded by e□ective, transparent, and equitable Ecological Fiscal Transfer (EFT) mechanisms. Fiscal transfer instruments generally have an underlying purpose to provide regions with equitable opportunities, able to be distributed nationwide and account for di□erences in GDP, human development, poverty rate, and so forth. Only certain regions will be entitled to a special treatment due to unique circumstances (such as being categorized as a very underdeveloped region), through a□rmative action instruments. Therefore, an equitable fiscal transfer based on ecological indicators should be able to absorb di□erences in natural resources, topography, weather, condition of forests and agricultural activities. The objective is to distribute incentives equitably across all villages, nationwide. This approach is di□erent but complementary to other e□orts that may seek to create new a□rmative fiscal instruments tailored specifically for regions with significant forest cover, for example. In other words, the indicator must be flexible in both ways — it should be broad enough to be relevant for all villages, and it should also be flexible enough to be tailored by specific localities that wish to modify it according to their needs. It must also be feasible to implement, and able to tap into existing bureaucratic processes instead of reinventing the wheel.

Therefore, improving village-level implementation on SDG framework using the vehicle of fiscal reform requires:

- A mechanism capable of assessing the environmental performance of villages in tandem with existing indicators and evaluation methods. To date, the current village evaluation methods are based on IPD and IDM.
- A mechanism capable of rating and rewarding villages for good performance.

Meanwhile, in IDM+, fiscal incentives are given to villages that meet the criteria for sustainable villages as measured by curated ecological index. This index measures the

villages based on their sustainable land management, climate change mitigation, and adaptation activities.

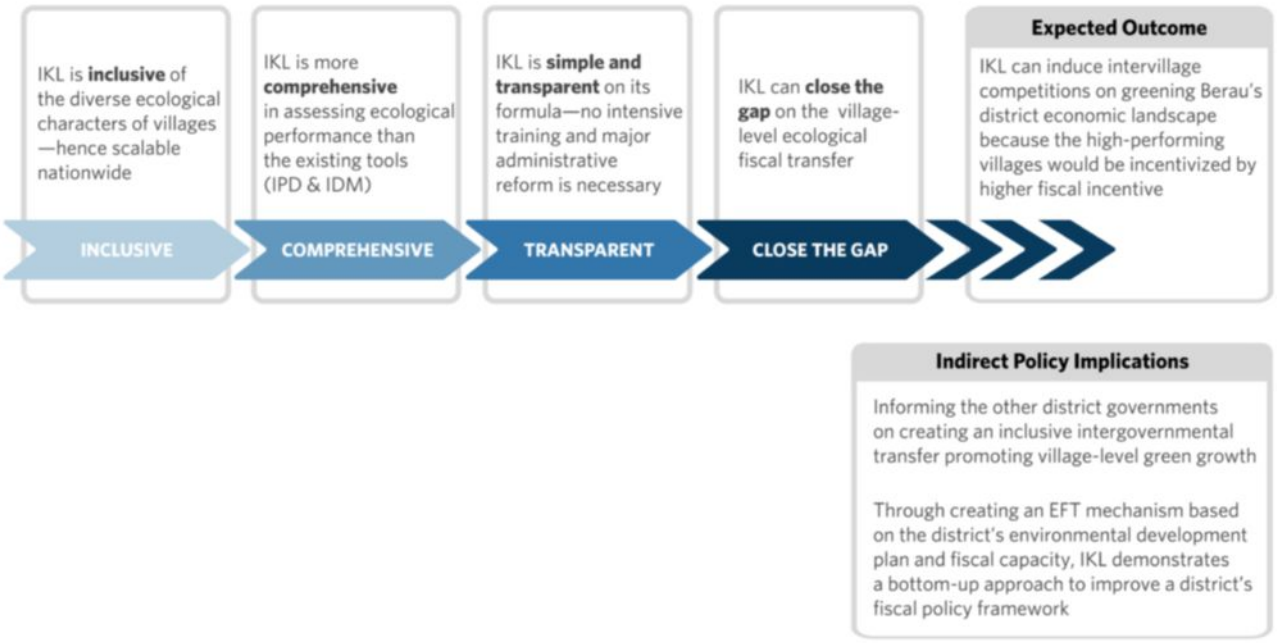


4.2 IDM+ MAY INVOKE CHANGES IN A REGENCY'S ECONOMIC LANDSCAPE AND INDIRECT POLICY IMPLICATIONS

Berau's IDM+ study has the potential to induce intervillage competition towards greening the regency's economic landscape because high-performing villages would be incentivized by higher fiscal allocation. This study can also emphasize methods to close the gap between the central government's SDG priorities with local government priorities.

Moreover, it can potentially a□ect further policy implications by informing other regency-level governments on methods to create an inclusive intergovernmental transfer that promotes village-level green growth.

This study also demonstrates how a bottom-up approach can produce evidence-based solutions to improve the existing fiscal policy framework by creating an incentive system based on the regency's desire and existing capacity.



4.3 FURTHER STUDY

Deeper study, however, is required to improve the design and the implementation of IDM+.

Areas for potential follow-up studies include:

1. A longitudinal study on the economic analysis assessing how IDM+ induces village-level green growth over time.
2. A study analyzing the economic returns on IDM+, and how villages can perform under ecological governance as ultimately measured by IDM+.
3. A study on gender-mainstreaming in the ecological fiscal transfer i.e. should gender balance program be regarded as one of the ecological indices?
4. Analyzing how IDM+ is relevant in the context of lower fiscal capacity i.e., due to several factors such as the COVID-19 pandemic or plunging natural resources revenue shares.

This is particularly relevant in the context of the ongoing public health crisis caused by COVID-19, which has a□ected many countries around the world, including Indonesia and the Berau Regency. The increasing needs for healthcare facilities and social assistance are imposing pressures on the fiscal capacities of governments around the world. The EFT is contingent on the availability of a fiscal budget that can be transferred. A fiscal reform attempt to incorporate ecological indicators is likely to be obstructed or delayed until the current public health crisis is appropriately addressed.

5. CONCLUSION

- To ensure that high-level SDG priorities can translate into policies at the smallest administration units such as village-level administration, Indonesia needs an indicator that is capable of evaluating village-level ecological performance. The indicator must be able to measure 'performance' objectively given the diversity of the on-the-ground context. In addition, a certain reward system needs to be in place as leverage to implement village-level SDG priorities. Fiscal transfer instruments are also necessary to deliver incentives to reward performance.
- Meanwhile, the existing evaluation methods and fiscal instruments are not adequate to account for – let alone reward – village actions to reach the SDG implementation targets in particular, or sustainable development in general.
- Evaluation methods need to be updated to reflect ecological factors to support SDGs, and these are applicable to all villages. To provide a push for improvement, villages that are proven to have the highest environmental performance then need to be rewarded by e□ective, transparent, and equitable EFT (Ecological Fiscal Transfer) mechanisms.
- EFT is an intergovernmental fiscal transfer that is based on ecological performance. Depending upon the financial instrument used for the transfer, it aims to induce the incentive e□ect in targeted jurisdictions. One of the expected e□ects is to have green growth on one hand, and fiscal e□ciency on the other.
- While many local governments are currently exploring EFT mechanisms, with the support of the central government, we found that fiscal reforms are often more successful at the local-level than at the central-level because of political performance and developmental priorities. Therefore, there is opportunity to enrich this discourse and fill-in the gaps in measuring ecological performance to deliver on the ground impact.
- IDM+ uses an existing index and adds 10 di□erent ecological indicators which is divided into two main categories; land-use and natural resource management, and climate actions. The index adds important ecological performance indicators but does not create a new index. It instead builds on existing instruments already used in villages, to avoid lengthy bureaucratic adaptations.
- The 10 IDM+ indicators are designed to be universally applicable across all villages, while also flexible to take on local characteristics. For example, some villages with specific goals might take on additional sub-indicators beyond the main 10 to showcase high performance.
- In the case of Berau, IDM+ measures 14 di□erent ecological indicators,—more comprehensive than the existing ecological evaluation. The higher number of indicators in IDM+ allows to account for Berau's geographical diversity —more than just forest cover. In Berau, the 14 environmental performance indicators are village spatial planning, each

indicator is scored based on 5 degrees Likert scale.

- There are several fiscal instruments that Berau's government can use to incentivize village performance as measured by the IDM+. In the case of regency-to-village fiscal transfer such as in Berau, the financial assistance (Bantuan Keuangan Kabupaten) and village fund allocation (Alokasi Dana Desa) instruments may be used for transfer. The choice of which instruments can be connected to the IDM+ indicator is contingent on Berau's fiscal capacity, political support, and developmental priorities.
- Based on our study, we recommend several key steps to the Berau Government:

1. Undertake clear and transparent dissemination before and during policy implementation and inform stakeholders that IDM+ is an enhanced mechanism that is built from existing performance indicators and its associated fiscal instruments.
2. Ensure that commitment and leadership from local village heads are in place as this policy involves multiple stakeholders with the principle of inclusive sustainable development, i.e., all villages have equitable opportunities and access to resources to improve their performance. This requires leadership and cooperation between the government, the private sector, and other development partners.
3. Knowledge and capacity building on IDM+ to enhance and develop the knowledge, tools, equipment, and other resources that are required to successfully implement it and continuously improve village sustainability.

- In the current context where the COVID-19 pandemic is a□ecting the fiscal capacity of many countries including subnational governments like Berau, EFT is contingent on the availability of a fiscal budget to be transferred. A fiscal reform attempt to incorporate ecological indicators is likely to be obstructed or delayed until the public health crisis is appropriately addressed.
- Berau's IDM+ study has the potential to induce intervillage competitions on greening Berau's economic landscape because high-performing villages would be incentivized by higher fiscal allocation. This study can also highlight methods to close the gap between the central government's SDG priorities and those of the local government. Moreover, it can potentially a□ect further policy implications by informing the other regency-level governments on methods to create an inclusive intergovernmental transfer that can promote village-level green growth. This study also demonstrates how a bottom-up approach, by creating an incentive system based on the regency's desire and existing capacity, can produce evidence-based solutions to improve the existing fiscal policy framework.

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