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Improving Land Productivity through Fiscal Policy: A Framework for Analysis

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Climate Policy Initiative is a team of analysts and advisors that works to improve the most important energy and land use policies around the world, with a particular focus on finance. An independent organization supported in part by a grant from the Open Society Foundations, CPI works in places that provide the most potential for policy impact including Brazil, China, Europe, India, Indonesia, and the United States.

Our work helps nations grow while addressing increasingly scarce resources and climate risk. This is a complex challenge in which policy plays a crucial role.

Executive Summary

## Improving Land Productivity through Fiscal Policy: A Framework for Analysis

Indonesia's government has ambitious dual revenue and emission reduction goals: its 2015 revenue targets are 21% higher than 2014 targets, and it aims to reduce emissions 29% by 2030. These dual goals make it a growing priority to find ways to encourage productive land use that can generate domestic revenue, while also curbing emissions and deforestation.

Our analysis indicates that Indonesia has opportunities to improve its fiscal policy frameworks to meet both goals simultaneously. Our review shows, for example, that while there is observable GDP growth in the land use sector, government revenue is not experiencing the same growth rates (Ministry of Finance 2013). And while the tax-to-GDP ratios of some land use sectors, such as oil and gas and mining, are moderately healthy, other sectors, such as agriculture, are under-performing at a tenth of Indonesia's average tax-to-GDP ratio (Prastowo 2013, Arnold 2012). At the same time, our analysis reveals that most revenue streams in Indonesia are based on production instead of land size. There is therefore no disincentive for producers using land unproductively, since levies will be the same whether production is done intensively or extensively.

This study points to promising opportunities to address these inefficiencies and adjust fiscal policy instruments to meet Indonesia's revenue and land

Figure 1 illustrates proportion of land-size based levies relative to production-based levies.
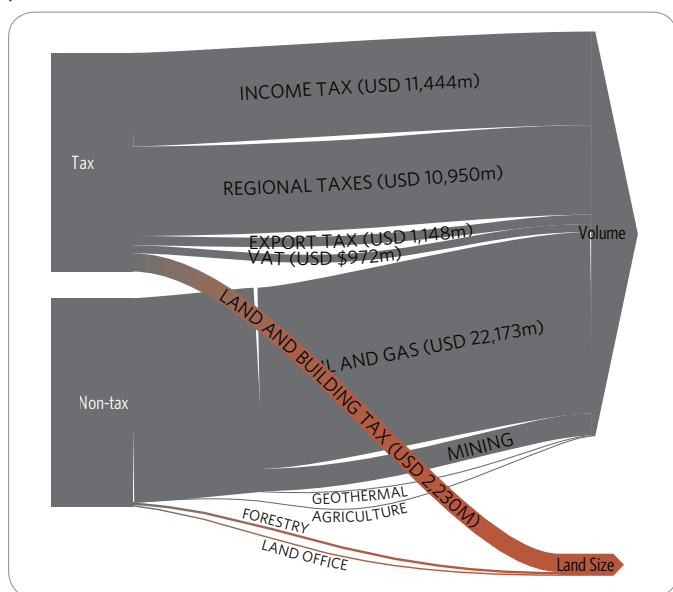
use goals. We find three specific areas of opportunity: 1) adjusting existing revenue collection instruments 2) increasing the transfer of revenues to local government and 3) earmarking more revenues to support reduced deforestation.

1. Adjusting revenue collection instruments

Taxes and other revenue collection instruments may be directly or indirectly incentivizing profitability through land expansion, making it difficult for the government to achieve dual economic and environmental goals. In total, USD 38.6 billion, or 93.5% of all land use revenue, comes from instruments based on profitability as opposed to land size (Figure 1) (Ministry of Finance 2014a). These instruments, namely VAT, income tax, export tax, as well as certain non-tax revenue instruments such as mining royalties, place a burden on production profit and do not provide incentives for better productivity per hectare. On the other hand, instruments that are calculated based on land area, and so provide penalties for land expansion, namely the Land & Building Tax, Forestry non-tax revenue, National Land Registry non-tax revenue, and Mining and Geothermal fixed fees, only contribute 6.5% of total revenue. While the optimal mix of production and land size revenue collection instruments needs further study, there is a general need to shift the balance so that more revenue collection comes from land area-based instruments.

The revenue collection instruments that show the greatest potential for adjustments to increase revenues and encourage efficient resource use are the Land and Building Tax, Export Tax of key agricultural commodities, Forestry Non-Tax Revenues, Agriculture Non-Tax Revenues, and Land Registry Non-Tax Revenues. These instruments each have either below target collection rates or collection that is small as a percentage to total revenue, indicating that there is room to increase revenues. In addition, the Land and Building Tax and Export Tax have potential for amendment through tariff rate adjustments without a need to amend the entire formula. Regional Taxes also show moderate potential for adjustment, especially since the water taxes embedded within these are relevant to land expansion.

2. Improving central government fiscal transfers to regional governments

Central to regional transfers, an important part of regional government revenues, are currently structured in a way that may indirectly incentivize land expansion, and therefore work against Indonesia's policy goals. A large percentage of central to regional transfers are from Land & Building Tax, Forestry Non-Tax, and Mining Non-Tax instruments – all of which are calculated based on land size. This means that regional governments gain revenue as they grant more land permits, a situation that may incentivize regional governments to grant more land permits, especially given they also collect licensing fees for these permits.

Of the four major transfer instruments, the Revenue-Sharing Instrument has most potential to be adjusted to better incentivize regional governments to increase land productivity and manage land use sustainably. The General Allocation Fund provides the largest share of revenue transfer to regions, but the way it is formulated may actually discourage regions from raising their own revenue, and is difficult to reform. However, since the GAF is currently the main transfer instrument for regional government's fiscal equalization, it may be used to channel lump-sum transfers to incentivize ecological performance (Mumbunan et.al. 2012). On the other hand, the Revenue Sharing mechanism, which accounts for an estimated USD 7 billion in transfers from land use revenues, may encourage land expansion, but has higher potential for reform. For example, the Revenue Sharing percentages could be amended to shift more transfers away from Land & Building Tax towards Income Tax instead, thus reducing incentives for land expansion.

3. Earmarking revenues to support sustainable land use

Earmarked revenue may provide a mechanism to develop the very sector from which the revenue comes from, however, the use of earmarks is currently very limited. Earmarking refers to a mechanism in which certain sources of revenue are allocated to a specific program instead of going through the parliamentary state budget allocation process. In Indonesia, funds could be earmarked towards activities that support sustainable land use, and could therefore increase government revenues while preventing land expansion. The most promising mechanisms to achieve this are Non-Tax Revenue Earmarking and the Adjustment Funds.

Non-Tax Revenue can be earmarked for use by the institution collecting it, and can therefore be an important tool for ministries to fund sustainable land use activities, such as replanting or cultivation of degraded land. Earmarked non-tax revenues are currently a very small portion of total revenues, but there is potential for adjustment and better utilization, with the first step being to better define the rules of use for this instrument.

The Adjustment Funds also show potential for further optimization. The Central Government is using Adjustment Funds more in recent years, with the Funds tripling from USD 1.9 billion in 2010 to USD 5.4 billion in 2011 alone. Although Adjustment Funds are not currently directed at sustainable land use, there is no fixed formula for their allocation. This means that they have potential for change and more flexible allocation according to an actual need, such as sustainable land use activities.

A word on methodology

We assess revenue instruments across four main categories:

• their potential to contribute to increased revenue collection;
• their potential to discourage land expansion;
• their feasibility for reform via regulatory amendment; and
• their feasibility for reform via shifts in allocation.

Through this exercise, we provide a framework for identifying the best opportunities for adjustment.

Recommendations for Follow-Up Studies

Our initial framework mapping analysis has highlighted the need for more in-depth analysis to identify optimal revenue system changes that could be implemented by the Government of Indonesia to support its revenue raising and climate objectives. We recommend follow-up studies that include:

1. A closer examination of the revenue-collecting instruments that show the most potential for adjustment to increase revenues and encourage efficient resource use (i.e. Regional Taxes, Land & Building Tax, Export Tax, Forestry Non-Tax Revenue, Agriculture Non-Tax Revenue, and Land Registry Non-Tax Revenue) to understand current impact of these instruments on behaviors and identify specific entry-points for improvement. We propose running a sensitivity analysis to test the impact of different formulas and tariff rates on government revenues and incentives for land expansion.

2. An analysis of revenue transfer mechanisms from central to regional governments to identify their specific impacts on land use behavior, decision making, and policy options at the central government level and regional government level.

3. A more in-depth study to explore the potential to use earmarking instruments to incentivize sustainable land use.

As a first step, CPI has prepared a companion case study (Falconer 2015), which looks in detail at the impact of existing national tax instruments on the palm oil industry. It finds that the Indonesian national tax system as it stands is not incentivizing sustainable land use in the palm oil industry. It highlights relatively low levels of tax collection from the industry as well as low levels of redistribution of revenues to local governments, and identifies several opportunities to modify the tax system in order to increase government revenues while incentivizing higher productivity and land use efficiency.

Matrix assessment of major land use industry revenue collection instruments and their potentials to be adjusted to increase revenues and encourage efficient resource use

CRITERIA

INSTRUMENT	POTENTIAL FOR OPTIMIZATION	POTENTIAL TO DISCOURAGE LAND EXPANSION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	LIKELIHOOD FOR IMPROVEMENT
TAX					
Income Tax	Medium	No	Low	Low	Low
Land & Building	Medium	Yes	Medium	Low	High
VAT	Medium	No	Low	Low	Low
Export Tax	High	No	Medium	Low	High
Regional Taxes	Low	Mostly no	Medium	Low	Medium
NON-TAX					
Forestry	High	Yes	Medium	Medium	High
Agriculture	Medium	No	Medium	Medium	High
Oil & Gas	Low	No	Medium	Medium	Medium
Mining	Low	Mostly no	Medium	Medium	Medium
Geothermal	Low	Mostly no	Medium	Medium	Medium
Land Registry	Low	Yes	Medium	Medium	High

Potentials associated with central-to-regional revenue transfers

CRITERIA

INSTRUMENT	POTENTIAL FOR OPTIMIZATION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	LIKELIHOOD FOR IMPROVEMENT
General Allocation Fund	Low	Low	Low	Low
Revenue Sharing	High	Low	Medium	High

Potentials associated with revenue earmarking

CRITERIA

INSTRUMENT	POTENTIAL FOR OPTIMIZATION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	LIKELIHOOD FOR IMPROVEMENT
Non-Tax Revenue	High	Medium	High	High
Special Allocation Fund	Low	Medium	Medium	Medium
Adjustment Funds	Low	Medium	High	High

Contents

1. Introduction

The natural resource development sectors, including forestry, oil and gas, mining, and agriculture, are some of Indonesia's leading drivers of deforestation and greenhouse gas emissions (PEACE 2007). Four million hectares of forest land was released for agriculture and crops between 2002 and 2010. Five and a half million hectares of pristine natural forest were deforested and turned into logging for pulp and paper concessions between 1995 and 2003, and four million hectares of forest loss between 1985 and 1997 was attributed to the expansion of small-scale agriculture (Indrarto et.al 2012). Combined, these areas represent a landmass equal to three-quarters the size of Java. These sectors also collectively contribute two-thirds of Indonesia's greenhouse gas emissions. However, they also account for a significant share of Indonesia's economy, contributing about one-third of national revenue and nearly half of Indonesia's GDP.

Indonesia therefore faces challenges reconciling ambitious plans to increase government revenue and maintain economic growth while at the same time reducing deforestation. The government's 2015 target revenue from taxes of IDR 1,294 trillion per annum, the highest revenue-growth goal in Indonesia's history, is 21% higher than 2014. [1] The government also has a target to reduce greenhouse gas emissions by 26% by 2020, primarily by curbing deforestation.

Achieving these dual targets will require a close examination of how public policy impacts the allocation, management and use of natural resources, and the opportunities to realign policies to support growth and increase government revenue without driving more land expansion.

The good news is that there is reason to believe opportunities exist in the sector to improve inefficiencies in the way revenue is collected and distributed. For example, data shows that while there is observable GDP growth in the mining, oil and gas, agriculture, and forestry sectors, government revenue from these sectors is not experiencing the same growth rates (Ministry of Finance 2013). And while the tax-to-GDP ratios of some sectors, such as oil and gas and mining, are moderately healthy, other sectors, such as agriculture, are under-performing. For example, the tax-to-GDP ratio of agriculture is estimated at 1.2% while for mining it is 6.3% (Prastowo 2013).[2] Both of these ratios

are well below Indonesia's average tax-to-GDP ratio of 12% (Arnold 2012).

This study aims to identify opportunities to adjust government collection and distribution instruments to increase efficiency in revenues without encouraging further land expansion.

Chapter 2 explains our methodology before describing and mapping all the relevant tax and levy collection instruments in Chapter 3. Chapter 4 explores in more detail the mechanisms that transfer state revenue from central to regional governments and may offer potential to meet Indonesia's land use and revenue goals. Chapter 5 considers how earmarking mechanisms may allocate revenue to sustainable land use activities and Chapter 6 draws final conclusions and outlines next steps.

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1   Tax revenue target in 2014 was IDR 1,072 trillion, however, realization was IDR 982 trillion.

2   The estimated tax-to-GDP ratio include personal and corporate income   tax, and value-added tax.

2. Methodology

This study provides a framework to assess opportunities to improve revenue collection and distribution instruments in the land use sector. Analysis is limited to land use tax and non-tax[3] laws and regulations pertaining to forestry, agriculture, oil and gas, mining, and geothermal energy.[4] The revenue figures are analyzed using the Central Government Financial Report and the Local Government Disbursement Report, both for 2013 and published by the Ministry of Finance.

We also analyze the opportunities to adjust central to regional revenue transfers to better meet Indonesia's goals. The central government shares two types of revenue with provincial and district-level regional governments, namely tax and natural resources non-tax revenue. Here, "natural resource non-tax revenue" refers to non-tax revenue from the forestry, mining, oil, gas, geothermal, and fisheries sectors. This paper addresses each of these natural resource sectors, with the exception of fisheries, which is not relevant to land use. In addition, we also consider non-tax revenue collected by the National Land Registry (Badan Pertanahan Nasional – BPN) which is directly relevant to land use.[5]

To assess the potential to reform or adjust revenue instruments, we propose a framework that categorizes potential across four factors, as illustrated in Table 1:

1. Potential for revenue **optimization**, indicated by the revenue-collection realization rate and its size relative to total revenue;

2. Potential to **discourage land expansion**, indicated by whether the instrument's calculation is based on

land size or production factors ; and

3. Whether it is relatively easy or difficult to **amend the regulation**; and

4. Whether it is relatively easy to adjust **how a revenue is allocated** and distributed.

Together, these criteria indicate the overall potential for each instrument to be modified and improved in a way that would help the government meet its goals to increase revenues without land expansion.

We collect data from publicly available sources such as the Central Government Financial Report 2013, which includes figures on collected tax and non-tax revenue, in addition to the revenue collection target. Finance Minister Regulations are used to obtain Revenue Sharing figures.

2.1 Methodology to determine potential for revenue optimization

To measure potential for revenue optimization, we asses each instrument's revenue-collection realization rate and compare it with its planned or target value as stipulated by the Government of Indonesia in its annual budget. The realization rate is the percentage of actual revenue collected value against the planned or targeted value. Low realization rates, for example, less than 70% of target revenues, may suggest problems in revenue collection. Realization rates substantially greater than 100% may suggest planned revenue targets are inadequate. Both cases indicate potential to optimize revenues through tailored adjustments. We also look at each instrument's proportionate contribution to total revenue to understand its relative importance.

Table 1. Matrix of four categories as indicated by the column marked "Criteria".

INSTRUMENT	CRITERIA				POTENTIAL FOR IMPROVEMENT
	1. POTENTIAL FOR OPTIMIZATION	2. POTENTIAL TO DISCOURAGE LAND EXPANSION	3. EASE OF AMENDMENT	4. FLEXIBILITY OF ALLOCATION	

3   "Non-tax State Revenue" or "Penerimaan Negara Bukan Pajak" or "PNBP" is a legal term to describe all revenues received by government that are not taxes as regulated in Law No. 20 of 1997, such as natural resource royalties, revenue from state asset management, grants, and charges and fees for government services.

4   Geothermal is now considered separate from the mining sector under Law No. 21 of 2014 on Geothermal.

5   According to Government Regulation No. 13/2010, non-tax revenue collected by the National Land Registry includes service fee for plot survey and mapping, land registration, land valuation, and certification.

2.2 Methodology to determine potential to discourage land expansion

Regulatory analysis is used to examine how revenue is calculated with respect to each instrument. Where land is a basis for revenue collection, we differentiate instruments that are based on land size, from those that are based on production. Instruments that are

based on land size have more potential to influence decisions related to land expansion. For example, some instruments, such as the Land and Building Tax, stipulate land size as a component. Other instruments, such as Income Tax, are calculated using net income, suggesting that the amount of tax collection will depend on the profitability of the individual or corporation.

2.3 Methodology to determine potential for regulatory amendment

To determine their potential for amendment, instruments are analyzed according to their legal basis following the hierarchy of law and regulations. Figure 1 shows regulation types by order of hierarchy. Each regulation must be an implementation of, or at least consistent with, a higher-ranked regulation.

The higher the hierarchy of the regulation, the harder it is to enact or make amendments. Laws are enacted with the joint approval of the President and the House of Representatives. Government Regulations and Presidential Regulations are enacted by the President, often with input from various ministries and institutions. Ministerial Regulations are enacted by a Minister. There is an absence of any clear hierarchy between a Regional Regulation, Ministerial Regulation, and Institutional Regulation, which often results in disharmony or overlap.

2.4 Methodology to determine flexibility of distribution and allocation

Allocation of revenues to sustainable revenue-generating activities can also help the government meet its dual goals. Flexibility of the instruments in terms of distribution and allocation is important as currently no specific instrument is dedicated to channel climate finance or incentivize sustainable land use (Ampri, I. et.al. 2014).

A regulatory analysis reveals how collected revenue is allocated and distributed. For example, part of the state budget is allocated to regional governments through the Revenue-Sharing regulation which specifies formulas and percentages to guide allocations. Other revenue distribution instruments such as the Adjustment Funds are not allocated according to a formula or percentage, making their allocations more flexible. Regulatory analysis identifies whether revenue distribution instruments allows for flexibility in determining how revenue is allocated to specific activities and distributed to regional governments.

Figure 1. Hierarchy of Regulations
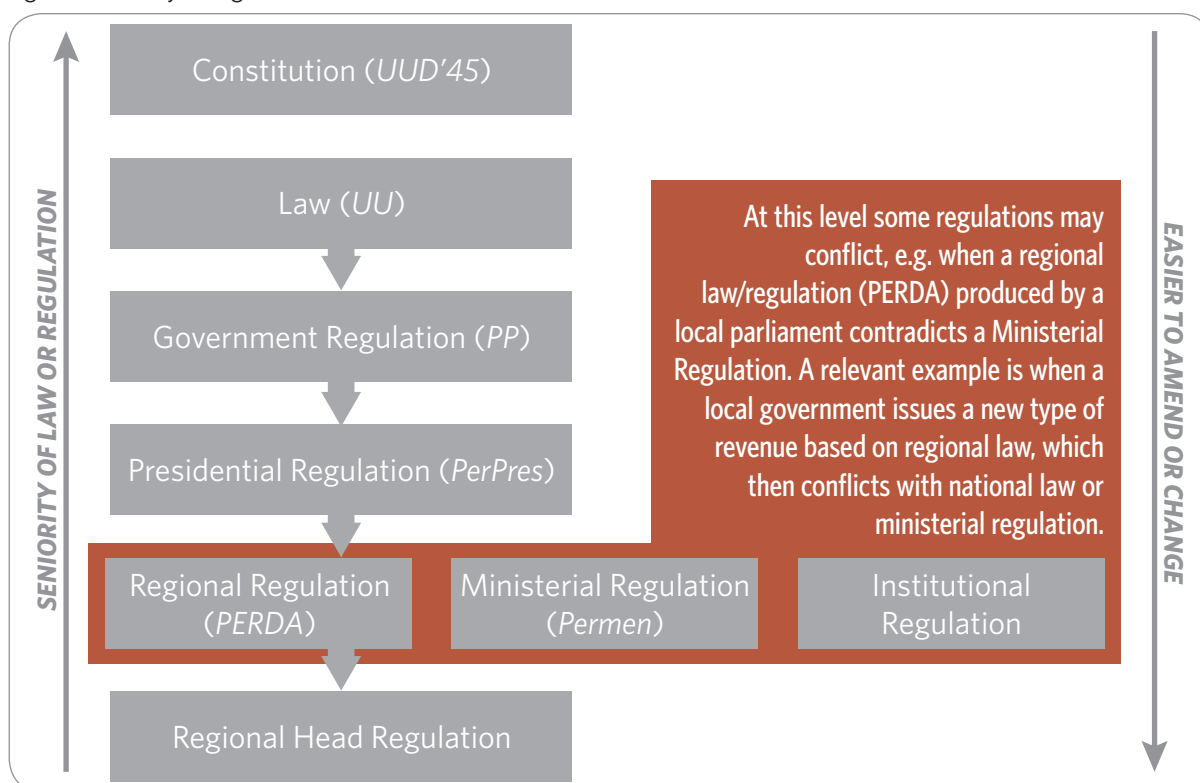
3. Taxation and Non-taxation Revenue Collection Instruments

Land and building tax, export tax, and forestry, agriculture, and land registry non-tax revenue instruments show the greatest potential for improvements that would help the government meet its revenue and land use goals.

Levies have the double function of being both revenue-raising instruments and tools to incentivize certain behaviors. From an incentive point of view, levies based on land size may encourage more conservative land use, while levies based on production might motivate lower productivity on greater acreage.

Our analysis reveals that eight out of eleven revenue streams in Indonesia derive from instruments calculated on the basis of production instead of land size. Very few instruments that put a levy on land size exist. Of the three instruments based on land size, two have fallen short of their targeted revenue collections. This indicates that there is potential to increase the use of land-size based fiscal instruments, and potential to improve collections where they are applied. We also find that there is an opportunity to improve fiscal instruments to encourage more productivity per hectare instead of land expansion, for example by amending Forest Resource Collection Fees so as to impose fees at market value.

In terms of whether policy changes are possible, we find that tax formulas are more difficult to amend than non-tax formulas. This is because all tax instruments are based on a law, and all non-tax collecting instruments are based on a government regulation. However, the tariff rates of some instruments can be adjusted relatively easily. As for how the instruments allocate state budget funds, we find that non-tax instruments have been earmarked and therefore show flexibility to be allocated towards land use activities, however tax instruments have not been earmarked (with the exception of a few regional taxes). This makes tax instruments less flexible in their allocation.

Table 1 lists all the collection instruments and our findings of their respective potentials to increase revenue, discourage land expansion, and ease of reform. In the following sections we discuss each of these instruments in more detail.[6]

Figure 2 illustrates the categories of tax and non-tax revenue instruments, which agency collects them, and their disbursement channels.

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6   Note that according to Finance-Home Affairs Joint Minister Regulation (No. 15/PMK.07/2014 and No.10/2014, Urban and Rural Land and Building Tax is transferred to local government and have become regional taxes.

Box 2: A word on Tax Revenue versus Non-Tax Revenue

Laws and Government Regulations determine the types of tax and non-tax revenue that can be collected, as well as its tax objects (what is taxed) and subjects (who is taxed), whereas specific formulas and rates for calculation of tax and non-tax revenues are typically regulated in Ministerial Regulations or Ministerial Decrees. This is relevant because the hierarchy of regulations affect the ease of change. For example it is easier to improve formulas, rates and calculations regulated by Ministerial Decree than to change types, subjects, and objects of taxes.

Tax revenue is enacted by law and consists of:

- Income Tax (individual and corporate)

- Value Added Tax

- Land & Building Tax

- Export Tax (also known as Customs Duty)

- Regional Taxes

Non-tax State Revenues (PNBP) are enacted by Government Regulations, and categorized according to the collecting institution. Four types are relevant to land use:

- Non-tax instruments set by the Ministry of Forestry

- Non-tax instruments set by the Ministry of Energy and Mineral Resources

- Non-tax instruments set by the National Land Registry (BPN)

- Non-tax instruments set by the Ministry of Agriculture

Table 1. Matrix assessment of major land use industry revenue collection instruments and their potentials to be adjusted to increase revenues and encourage efficient resource use

| INSTRUMENT | CRITERIA | | | | LIKELIHOOD FOR IMPROVEMENT |
	POTENTIAL FOR OPTIMIZATION	POTENTIAL TO DISCOURAGE LAND EXPANSION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	
TAX					
Income Tax	Medium	No	Low	Low	Low
Land & Building	Medium	Yes	Medium	Low	High
VAT	Medium	No	Low	Low	Low
Export Tax	High	No	Medium	Low	High
Regional Taxes	Low	Mostly no	Medium	Low	Medium
NON-TAX					
Forestry	High	Yes	Medium	Medium	High
Agriculture	Medium	No	Medium	Medium	High
Oil & Gas	Low	No	Medium	Medium	Medium
Mining	Low	Mostly no	Medium	Medium	Medium
Geothermal	Low	Mostly no	Medium	Medium	Medium
Land Registry	Low	Yes	Medium	Medium	High

Figure 2. Tax and Non-tax Revenue Flow
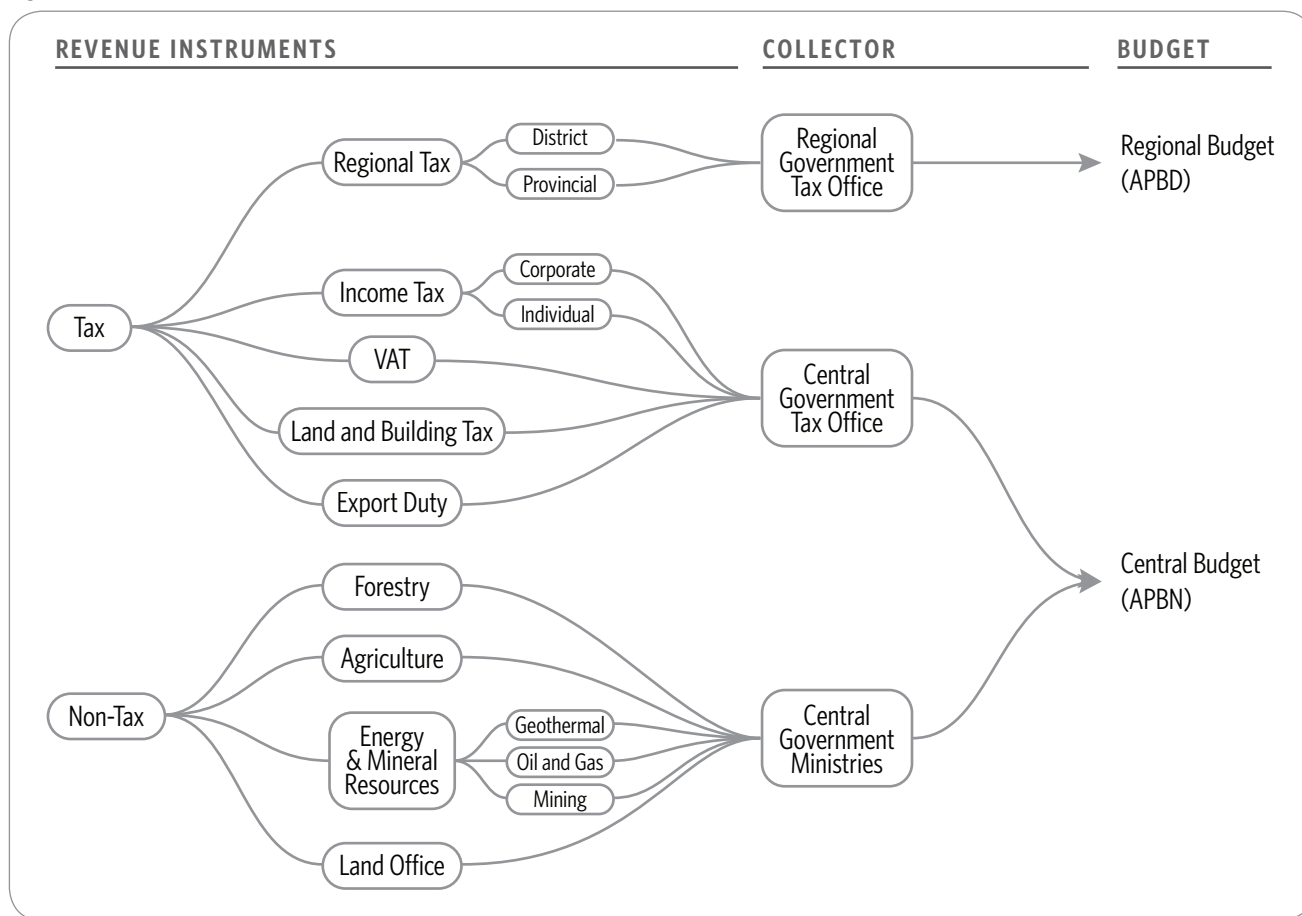
3.1 Tax Revenue Instruments

3.1.1 INCOME TAX

Income Tax, while contributing a relatively large share of revenue (39%), provides only medium potential for further optimization, and low potential for reform. Overall, we find opportunity to reform income tax to meet the government's growth and environmental goals without significant political changes is low.

Income tax applies at a flat rate to income earned by corporations or legal entities and is progressively applied to individuals, the latter normally being withheld and paid by the company.[7] Corporate tax calculations are based on the following formula:[8]

$$[\text{tax rate}] \ \times \ ([\begin{smallmatrix}\text{gross} \\ \text{revenue}\end{smallmatrix}] \ - \ [\begin{smallmatrix}\text{costs to obtain, claim,} \\ \text{and maintain revenue}\end{smallmatrix}])$$

The tax rate is fixed at 25% for corporations and 20% for public companies. The formula for calculation of Corporate Income Tax is based on net income. At this rate, income tax revenue from corporations is the

largest source of tax for Indonesia. In 2013 it contributed around USD 48 billion, which was 39% of the country's total tax revenue (MoF 2014a). Land use sectors – agriculture, mining, oil and gas – are estimated to have generated USD 11.4 billion or 24% of total income tax taxes. At 94%, the realization rate of Income Tax was also the highest among tax revenue mechanism, thus potential for further revenue optimization is medium. At the same time, there is no potential to discourage land optimization and tax reforms are difficult to accomplish. Overall, the potential to improve Income Tax to meet Indonesia's land use and revenue goals is low.

3.1.2 VALUE ADDED TAX (VAT)

VAT provides the second largest share of central government revenue, but has only medium potential for further optimization, and low potential for reform. We see a low opportunity for VAT to be adjusted to help achieve the government's revenue-growth or environmental goals.

VAT is calculated as 10% of sales price applicable to goods and services transacted at each point in the

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7 Law No. 7 of 1983 as last amended by Law No. 36 of 2008
8 Article 6, Law No. 7 of 1983

supply chain.[9] Exemptions from VAT are available for certain strategic commodities related mostly to food security. Exemptions apply only to horticulture (fruits and vegetables) and certain food crops (rice, corn, soy, meal, and sago). Although VAT rules have been amended several times in recent years, amendments have only been focused on VAT exemptions and are difficult to accomplish.[10]

The sale price component means that the VAT calculation is based on production factors, in that the more output from business activities, the more is generated for taxable sale. VAT thus provides no potential to discourage land expansion.

The VAT contributed USD 37 billion or equal to 36% of Indonesia's tax revenue in 2013 (MoF 2014a). From this amount, it is estimated that only USD 1 billion came from land use (agriculture and mining) sectors. The realization of VAT revenue against its target was relatively lower (91%) compared to other taxes' revenue observed here, for instance, Income Tax, thus the potential for further revenue optimization is medium. Overall, the potential to improve VAT to meet Indonesia's land use and revenue goals is low.

3.1.3   LAND & BUILDING TAX

The Land and Building Tax, which currently provides a very low share of revenue, has the largest potential of the tax instruments to discourage land expansion, and is relatively easy to reform. These factors suggest Land & Building Tax has high potential for improvement to support sustainable land use and realization of revenue collection goals.

The Land & Building Tax is an annual tax that must be paid by all land license holders based on the following

formula:[11]

$$0.5\% \quad x \quad 40\% \quad x \quad (\quad NJOP \quad - \quad NJOTKP \quad)$$

0.5%	40%	(NJOP	−	NJOTKP)
[tax rate]	[taxable portion of sales price]	[object sale value]		[non-taxable sale value]

In addition, a transfer tax of 5% *Nilai Jual Objek Pajak* (NJOP) is applied to any transfer of land and building and is payable by the seller. This tax is categorized as income tax from land sales.[12] A transfer duty of 5% NJOP is also payable by the buyer, but in this report, is categorized as Regional Tax.

Land size affects the object sale value NJOP. NJOP is not the actual sale price, but is determined by an Average Indicator Value for a certain Land Value Zone, and is normally set **lower** than the market price. The Ministry of Finance (Directorate-General of Taxation) determines the NJOP per square meter for each municipality, city, or tax office-administrative zone in Indonesia.[13] The NJOP also differs depending on where the land is located - in an urban/rural zone, plantation, forestry, or mining zone.

For plantations, NJOP is calculated by taking into account not only the land value, but also the plant investment value. The formula for Plantation NJOP is:

Plantation NJOP =

(Land size   x   Land NJOP*)   +   (Building size   x   Building NJOP)

*Land NJOP = Land Value + Standard Plant Investment

The use of a taxation formula that is based on land size has potential to discourage land expansion. In terms of potential for amendment, although the formula for Land & Building Tax is determined by a law, the NJOP's legal basis is a Ministerial Decree and the formula is reviewed every year. The government had plans earlier this year to scrap the NJOP and replace it with market value. If this change is implemented, tax collections would likely increase significantly, although further study is needed to make a robust estimate.

The potential for revenue optimization is moderate. The realization of Land and Building Tax was around 92%. However, the total generated – USD 2.4 billion - is relatively insignificant compared to other taxes. Total Land and Building Tax is low because the tax rate is low and the outdated NJOP does not reflect the actual

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9   Law No. 8 of 1983, as last amended by Law No. 42 of 2009.

10   Indonesia has a history of amending VAT regulations applicable to land use sectors. In the past, Government Regulation No. 12 of 2001 as amended by No. 31 of 2007 stipulated that various "strategic commodities" are exempted from VAT. The list of commodities have been revised four times but in general up until 2014, commodities from certain plantations (incl. palm oil, rubber, and coffee), horticulture, medicinal and decorative plants, food crops, forest and non-forest products (incl. wood, bamboo, and rattan), and fisheries were exempted from VAT. In 2014, after the regulation was brought to a Supreme Court material review by the Indonesian Chamber of Commerce (KADIN), the Supreme Court struck down parts of the regulation which exempted VAT from plantation produce, medicinal and decorative plants, food crops, and forest products.

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11   Law No. 12 of 1985 as last amended by Law No. 12 of 1994.

12   GR 48/1994, GR 27/1995, GR 79/1999, GR 71/2008.

13   DG Tax Regulation No. PER-60/PJ/2010 on Determination of NJOP as a basis for PBB Tax; Permenkeu No. 150/PMK.03/2010 on Classifications and Determination of NJOP as a Basis for PBB Tax; DG Tax Circular No. SE-140/PJ/2010 on Guidelines to implement DG Tax Reg PER-60/2010.

market value of the land.

Overall, Land and Building Tax has medium potential for revenue optimization but high potential to discourage land expansion. There is also a significant potential to reform the Land and Building Tax, particularly the NJOP component of the tax formula to reflect market value instead of the currently "false" lower value of land.

3.1.4   EXPORT TAX

The Export Tax provides the smallest source of tax revenue from land use sectors and has medium to low potential for reform. However, it is largely sourced from palm oil and mining exports and has high potential for further optimization. Overall, we see that Export Tax has high potential for improvement to support better land use.

The Export Tax is calculated based on the following formula:[14]

$$\left[\begin{array}{c}\text{Export}\\\text{Duty Tariff}\end{array}\right] \times \left[\begin{array}{c}\text{Object}\\\text{Unit}\end{array}\right] \times \left[\begin{array}{c}\text{Export Price}\\\text{per Unit}\end{array}\right] \times \left[\begin{array}{c}\text{Currency}\\\text{Exchange}\end{array}\right]$$

Since it is calculated against Price Per Unit, the Export Tax is a production-based tax, and is designed to incentivize the production of more processed goods. Palm oil products offer a good example of this differentiation as the tariff differs between upstream and value-added or more processed products. Table 2 shows the Export Duty Tariff differences between upstream and midstream products.[15] Export Tax's focus on production means that it has low potential to discourage land use.

The Export Duty Tariff is determined through a Minister of Finance Decree, thus the tariff is relatively easy to amend. Export Tax realization rates are among the lowest for tax revenues at around 90%, generating USD 1.5 billion – the smallest source of tax revenues discussed in this study.[16] However, the majority (USD 1.1 billion) came from land use such as agriculture – especially palm oil, 30-44% of total tax revenues (Falconer et.al 2015) – and mining. It could be an important instrument to meet land use goals if revenue from this tax is allocated to sustainable land use

Table 2. Export Tariff and Export Price of products

UPSTREAM		VALUE-ADDED UPSTREAM	
PRODUCT	TARIFF	PRODUCT	TARIFF
Palm Oil Fruit Brunches, Seedlings, Kernels	40%	Crude Palm Oil (CPI) and derivatives	0-22.5%
Raw mineral ore	Banned from export[a]	Mineral metals concentrate	20-60%
Wood veneer	15%	Processed wood	5-10%

a   Mineral ores used to be exported at a Duty Tariff of 20%. However, since Law No. 4 of 2009 on Mining came into effect in 2014, raw mineral exports were ultimately phased out whilst mining companies are obliged to build domestic smelters. The mineral concentrate duty tariffs were then introduced only recently in 2014.

activities. Currently, the Palm Oil Fund currently being applied (see Box 3), it is another levy collected based on export value. This levy illustrates how export-based revenue can be spent specifically to improve land use, for example through a replanting program.

Overall, despite the Export Tax having a low potential to discourage land expansion, there is a relatively higher potential to amend the tariff, and a high potential for revenue optimization.

3.1.5   REGIONAL TAXES

Regional Taxes are own-source revenues (OSR) for regions and have low potential for further optimization.[17] While some regional tax instruments have the potential to discourage land expansion, the majority do not, and there is only medium potential for reform. Overall we see medium potential for improvement of the Regional Tax to both discourage land expansion and support sustainable land use.

Regional governments are allowed to collect regional taxes[18] within their area of jurisdiction, but the types of taxes are limited by central government.[19] Five types of provincial taxes may be collected and there are up to

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14   Law No. 10 of 1995 on Customs.

15   PermenKeu 75/PMK.011/2012 as amended by 153/PMK.011/2014; KepmenKeu 142/KM.4/2014.

16   This is also the case when it is compared with Import Tax or Duty, which was twice as large and had realization rate of 103%. Together, they are grouped into International Trade Tax.

17   Own-Source Revenue (OSR) is revenue collected by local government including local tax, local levy, profit from local government owned enterprise, and others as stipulated in Law No. 33/2004 on Regional Balancing Fund and Law No. 28/2009 on Regional Tax and Levy.

18   Regional Taxes are regulated under Law No. 28 of 2009 on Regional Tax and Levy

19   Before the 2009 Law on Regional Tax and Retribution was enacted, regional taxation was not limited to an exhaustive list. Other regional taxes not listed were allowed as long as it fulfilled a certain criteria set out by a predecessor Law on regional taxes. However, these requirements were often violated by regional governments in an attempt to gain more own source revenue. Throughout 2004-2009, the central government has revoked 1691 Regional Regulations on retribution and tax (Solikhin et. al. 2011).

Box 3. "The Palm Oil Fund"

In May 2015 the Government of Indonesia announced the enactment of a new export charge for Crude Palm Oil (CPO). Under the Presidential Regulation No. 61/2015 on the Palm Oil Fund, producers and exporters of CPO and its derivatives are required to pay a levy and transfer it into a special fund to subsidize biodiesel and fund palm oil research and development among other things. The tariff varies from $10 to $50 per ton depending on the product.

The Ministry of Finance has established a special public services agency (Badan Layanan Umum or "BLU") to manage the funds outside of the state budget (APBN) system. The Fund aims to collect USD 750 million revenue annually, and has planned to allocate the fund to develop oil palm plantation as well as to cover subsidy for biodiesel. Due to as many as six ministries involved in the Fund, governance arrangements are yet to be decided.

eleven types of municipality taxes:[20]

- Provincial Level: Motor Vehicle Tax (PKB), Vehicle Transfer Duty (BBNKB), Vehicle Fuel Tax (PBBKB), **Surface Water Tax (PAP)**, Cigarette Tax.

- Municipality / District Level Taxes: Hotel Tax, Restaurant Tax, Entertainment Tax, Road Lighting Tax, Non-Metal Minerals and Rocks Tax, Parking Tax, Birds nest Tax, **5% Land and Building Transfer Duty (payable by the buyer)**.

- Optional Municipality/ District Level Taxes (only if Decreed by the Mayor/ Regent): Advertisement Tax, **Groundwater Tax**, and 0.3% Urban and Rural Land and Building Tax.

Those which are most relevant to land use are Surface Water and Groundwater taxes, both of which aim to constrain the heavy use of water in plantations, as well as Land and Building Transfer Duty, which applies to all land transfers including for land conversion.[21] The Land and Building Transfer Duty is calculated based on land size (see the previous section). Groundwater and Surface Water taxes are based on Obtained Water Value (*Nilai Perolehan Air* – "NPA"). NPA is determined by a City Regulation and is reviewed periodically to assess the water source, location, utilization purpose, obtained volume, quality, and environmental conditions. Since the payable tax is dependent on the volume

obtained, this is a production-based tax. However, this means that ultimately only three out of eleven Regional Taxes offer potential to discourage land expansion.

Although the exhaustive list of Regional Tax types are determined by a law, the tax rates are determined by either ministerial regulation or regional government regulation. Therefore the rates are relatively easier to amend, offering medium potential for reform.

Regional Taxes are the largest source (73%) of OSR. Nationally, in 2013 realization of OSR was estimated to be at 112.5% or around USD 15 billion (MoF 2014b).[22] This realization rate, however, is derived from an aggregated number of provinces and districts, where districts (107.3%) on average have higher realization rate than provinces (104%). However, the OSR is a larger proportion of provinces' total revenue (49%) than of districts' total revenue (11%), reflecting districts' dependency on central government transfers. This implies that provinces have better discretion in utilizing their own fiscal instruments to improve revenue, and that there is low potential for optimization of revenue.

Overall, very few of the Regional Tax types offer potential to discourage land expansion, and there is low potential for its collection to be optimized. However, there is medium potential to amend the Regional Tax rates.

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20   Article 2(3) Law No. 28/2009 on Regional Tax and Retribution.

21   Before the enactment of the 2009 Law on Regional Tax, Land and Building Transfer Duty and Urban and Rural Land and Building Tax were part of Central Government taxes. This is an example of how government policy has effectively shifted what was once a central tax to regional tax. This shift encouraged better management, such as improving database and land appraisal, and ultimately, more land transactions (Ananda et.al 2012).

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22   This estimation also includes Jakarta Province, which would be omitted in more specific land use discussion.

3.2 Non-tax Revenue Instruments

Non-tax revenue comprises state revenues other than taxes and grants. It includes revenue from natural resource extraction, return to equity from state-owned companies, revenue from public service agencies, and revenue from services provided by the ministries. Non-tax revenue contributes around 25%, or USD 34 billion, to total revenue. The majority of it, USD 25.5 billion — USD 22 billion alone was generated from oil and gas — comes from natural resource extraction (MoF 2014a). This particular non-tax revenue is important to local governments since certain percentages are distributed back to their jurisdictions.

3.2.1   FORESTRY NON-TAX REVENUE

Forestry Non-tax Revenue has high potential for further revenue optimization and is relatively easy to reform. Most importantly, it has potential to discourage land expansion. Overall, Forestry Non-Tax Revenue has high potential for improvement to support sustainable land use.

Forestry Non-Tax revenue instruments are regulated under Government Regulation No. 12 of 2014, which lists 30 different types of Non-tax State Revenue (PNBP) from forestry activities, including those listed in Table 3.

As Table 3 shows, three out of seven of the Forestry PNBP calculations are based on land size, thus has high potential to discourage unsustainable land use.[23] Forestry Non-tax Revenue sources have the lowest realization rate (72%) among all revenue instruments considered in this study, and therefore has high potential to be optimized. This is especially evident in the case of the Forest Resource Collection Fee where the disparity between the market price of logs and Ministry of Forestry's Reference Price is a key driver of the low realization rate (Mumbunan and Wahyudi 2013; Prastowo 2013).[24]

Overall, Forestry Non Tax Revenue has high potential to be optimized and to discourage land expansion. As it is set by government regulations, it also has a medium potential to be amended.

3.2.2   ENERGY & MINERAL RESOURCES NON-TAX REVENUE

Energy and Mineral Resources Non-tax Revenue provides low opportunity for further optimization as collection has consistently exceeded targets. It is moderately easy

23   The formula and price components are all determined in an attachment to the Government Regulation No. 12/2014.

24   Mumbunan and Wahyudi (2013), mentioned that realization rate for Forest Resource Collection Fee was 51% in 2011. Our updated figure in 2013 even shows a lower rate of 37%.

Table 3. Forestry Non-tax State Revenue Items

PNBP TYPE	DESCRIPTION	FORMULA
License Fees	Applicable to forest utilization licenses	A fixed price per permit/hectare/year
Forest Resource Collection Fees (Provisi Sumber Daya Hutan)	One-off collection fees collected to compensate for the intrinsic value collected from a state forest or converted forest	6%-10% of a predetermined reference price per cubic meters (m^3)
Reforestation Fund (Dana Reboisasi)	Funds for reforestation and rehabilitation of forests are collected from the holders of permits for utilization of logs from natural forests	A dollar amount per m^3, per log, per ton, or per staple meter amount, depending on the type of wood
Stumpage Fees (Penggantian Nilai Tegakan)	An obligation to be paid to the central government for issuing a log utilization permit, borrow-to-use permit, and from forests converted and issued with a cultivation license that still has trees on it	100% of a predetermined reference Price per m^3
Service Fees	Fees collected for water utilization in conservation forests	A fixed price per water utilization license at the water source, and an additional fixed price per hectare of the utilization area. The price varies depending on the scale of utilization
	Transactions related to carbon collection/absorption in forested areas	10% of carbon sale price per ton
	Utilization of environmental services for natural tourism	A fixed price per hectare for forest eco-parks, a fixed price per license applicable to providers of the tourism services, as well as a monthly fee payment that must be paid by providers of tourism services

to reform but offers little potential to discourage land expansion. Overall non-tax revenues from the Oil & Gas, Mining, and Geothermal sectors have medium potential to be improved to support better land use policy.

Energy & Mineral Resources Non-Tax Revenue covers mining, oil and gas, and geothermal activities.[25] Unlike other non-tax revenue types, energy and mineral resources contain production royalties and production-based revenue items, including as described in the following Table 4.

While five of the revenue items related to Royalties and Production Sharing across each of the three sectors are calculated based on production, two items applicable to Mining and Geothermal sectors are calculated based on land size. This means that a majority of Oil & Gas revenues have no potential to discourage land expansion.[26]

Fixed fees and royalty percentages are defined in the Government Regulation. For Oil & Gas Production Sharing, the Government Regulation provides a range of share percentages; the final is ultimately determined by contract negotiation. This setting provides a medium potential for regulatory amendment.

Energy and Mineral Resource non-tax revenues have far exceeded their realization rate targets. For example,

geothermal non-tax revenues reached a realization of 168%, bringing in USD 80 million, while the largest source of non-tax revenue, oil, had a 105% realization rate and generated USD 22 billion. Therefore, potential for optimization is low.

3.2.3 NATIONAL LAND REGISTRY NON-TAX REVENUE

National Land Registry Non-tax Revenue offers potential to discourage land expansion and medium potential for reform. Overall we see a high potential for National Land Registry revenue instruments to be improved to support sustainable land use.

National Land Registry Non-Tax Revenues cover several revenue items including surveys, measures, mapping, land checks, information services, and technical consideration documents, all of which may or may not be applicable to a potential land concession holder depending on whether the land already has adequate and undisputed information or mapping in place.[27]

Most importantly, the BPN offers technical considerations necessary for local regents to issue a Location Permit. BPN also issues Land Utilization Permits (HGB), Land Cultivation Permits (HGU), and Utilization Rights (HP). HGU and HGB are most commonly used as a concession for developing a plantation or processing plant. These are calculated based on the following formula:

(0.2% x land market value) + IDR 100.000

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25   Regulated under Government Regulation No. 9 of 2012

26   Also important to note that oil and gas is not the main driver of deforestation. As of 2014, total concessions area inside forest permitted by the Ministry of Environment and Forestry was 922,708 Ha (SKK Migas 2015). As comparison, coal concession area as of 2010 was 4 million Ha, while oil palm was 12 million Ha (Abood et.al 2015).

27   Regulated under GR No. 13 of 2010.

Table 4. Energy and Mineral Resources Non-tax Revenue items

PNBP TYPE	DESCRIPTION	FORMULA
Mining	Exploitation royalties	A certain percentage of sales price per ton based on type of mineral. For coal, percentages also vary based on coal caloric count
	Fixed fees (land rent)	A fixed dollar amount per hectare per year
	Contract based revenue percentage[a]	A certain percentage of sales price per ton
Oil & Gas	Production sharing	Depending on the contract, will typically require a government equity share of production after tax ranging from 60%-85%
	Bonus and early termination compensation	Depends on contract
Geothermal	Production royalties	A percentage of sales price per kilowatt hour
	Fixed fees	Geothermal exploration: US$2/ha/year Geothermal operational production: US$4/ha/year

a   Since 2009 there are no more contract-based mining concessions. However, contracts existing prior to 2009 were grandfathered. PKP2B or "Contract of Work" was the primary form of mining concession available to foreign investors in the past before 2009. Royalty rates were determined in the contract (between the government and the concession holder) and the rate stipulated in the contract prevails over regulations. The rate usually stipulated in PKP2B is 13.5%.

The 0.2% rate is determined by Government Regulation and the market value component is affected by land size. Therefore it offers a high potential to discourage land expansion.

However, potential for optimization remains low as the revenue from technical services provided by BPN has exceeded targets at 108%, generating USD 176 million.[28]

3.2.4   AGRICULTURE NON-TAX REVENUE

Agriculture Non-tax Revenue has medium potential for reform and has significant potential for further optimization as it currently contributes a minor share of total revenue. Overall we see high potential for agriculture non-tax revenue to be improved to support the government's revenue and land use goals.

Agriculture Non-Tax Revenue comprises two primary types of revenue items: (1) seed sales revenue, and (2) services.[29] Services encompass a wide range of activities including data provision, licensing, testing and analysis of agricultural developments, quarantines, research and development, and use of facilities. Compared to non-tax revenue from forestry, land registry, and energy & mineral resources, agriculture non-tax revenue is only a minor source of collected revenue.

No specific land size or production-based revenue collection instruments apply to outputs from the agriculture sector. However, the sale of agricultural inputs such as seeds and seedlings by the Ministry of Agriculture is more relevant to production than it is to land size. Therefore there is a low potential to discourage land expansion.
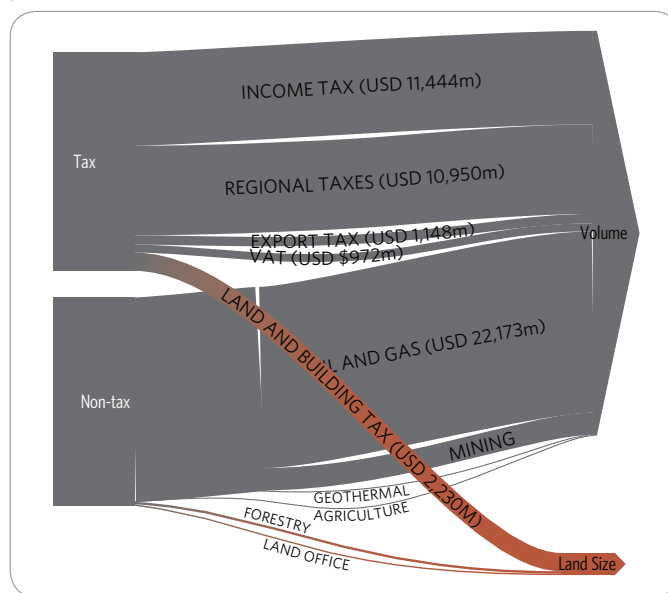
Non-tax instruments such as the palm oil levy for the Palm Oil Fund explained in Box 3 are linked to the export tax, and are therefore based on production as well. Although the Palm Oil Fund is not managed by the Ministry of Agriculture, it is worth mentioning here as palm oil contributes the plantation sector's largest proportion of GDP.

Agriculture non-tax revenue realization rates have always tripled or quadrupled targets, which have remained low regardless of previous years' actual collection. However agriculture non-tax revenues have contributed only minor amounts to state revenues, totaling USD 4.5 million in 2013. Based on these factors

Figure 3 illustrates proportion of land-size based levies relative to production-based levies.
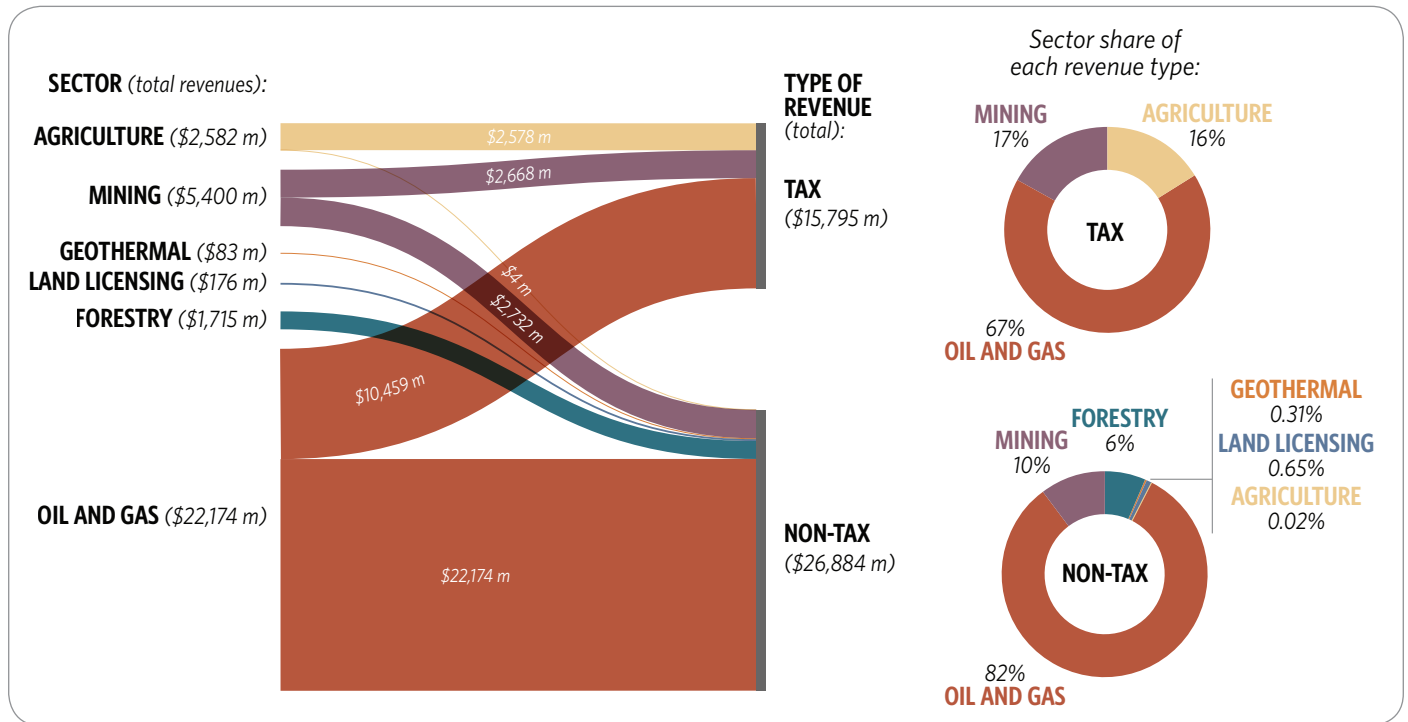

this study finds that there is actually a high potential to optimize non-tax revenue collection from agriculture.

Overall, we find that revenue from land use mostly comes from production-based instruments, particularly income tax and VAT, while the amount of land used is a relatively minor consideration (Figure 3). In total USD 38.6 billion of the total USD 41.3 billion in revenue collected derives from instruments that are based on production, or 93.5% of all land use revenue. Levies based on land size, on the other hand, make up only 6.5% of total revenue. These include Land & Building taxes, non-tax collections by the Ministry of Forestry and Land Registry Office, as well as minor fixed fees from mining and geothermal. Sector-wise, the largest revenue comes from Oil and Gas (Figure 4).

This means producers have no incentive to increase productivity on existing land, and are not significantly burdened when choosing to use more land. They would be indifferent to the choice between expansion or intensifying yield because the land size levies are so small. Overall, there are opportunities to shift this ratio so that incentives are more aligned with the government's goal to decrease land expansion while increasing productivity and downstream production. Based on our analysis, the Land and Building Tax, and Forestry, Agriculture, and Land Registry Non-tax instruments show particular promise for improvements along these lines.

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28   Unfortunately, publicly available data cannot show how much revenue is collected from land licensing fees. Ministry of Finance's Financial Report pools various licensing fees revenue under one aggregated account, totaling USD 1.2 billion in 2013, in which land licensing fees are included.

29   Regulated under GR No. 48 of 2012.

Figure 4. Estimated revenue from land use sectors

Source: CPI calculation based on Central Government Financial Report, Ministry of Finance (2014)

4.　How Revenues are Distributed from Central to Local Government

Revenue sharing instruments have the potential to incentivize regional governments to increase land productivity and optimize land management.

While the central government collected USD 138 billion in revenue in 2013, central-to-regional government transfers totaled around USD 49 billion (2013). Improved revenue distribution systems could open more opportunities to optimize collected revenues and incentivize local governments to improve land management and administration. This study considers the four instruments that govern central to regional revenue distribution: the General Allocation Fund, Revenue Sharing, the Special Allocation Fund, and the Adjustment Funds. In this chapter we will discuss the General Allocation Fund and Revenue Sharing (see Table 4 for a summary of potential opportunities to reform). In the next chapter we will discuss earmarking potentials associated with the Special Allocation Fund and Adjustment Funds.

Indonesia enacted a package of state finance regulations and regional autonomy regulations between 2003 and 2005 as part of major public finance reforms. These include the State Finance Law, State Budgeting Law, the Regional Government Law,[30] the Central-Regional Fund Balance Law,[31] and the Government Regulation on Balancing Funds.[32] These regulations set out, among other things, the mechanism for central government transfers of revenue to regional governments.

Central government transfers of revenue are made via two major channels, i.e. Balancing Funds and Special Autonomy/Adjustment Funds.

Balancing Funds and Special Autonomy/Adjustment Funds are used to fund Regional Government programs instead of Central Government programs, which is why these funds are categorized as "decentralization
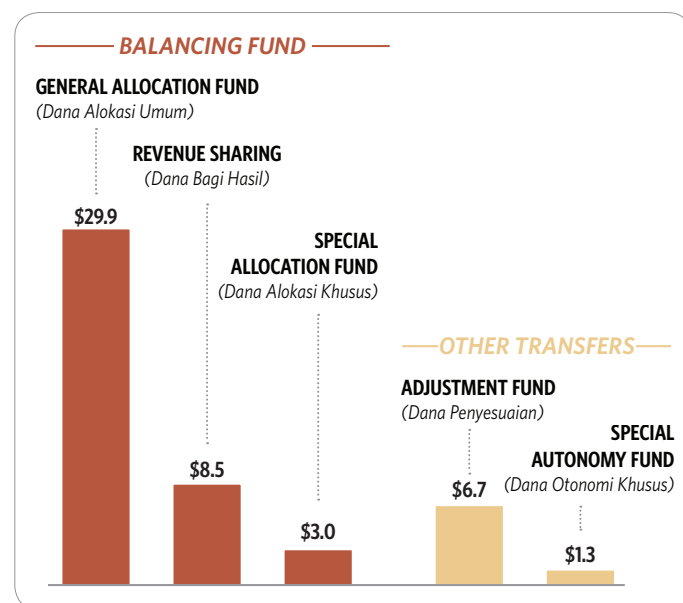
Table 4. Potential opportunities associated with revenue distribution

INSTRUMENT	CRITERIA			LIKELIHOOD FOR IMPROVEMENT
	POTENTIAL FOR OPTIMIZATION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	
General Allocation Fund	Low	Low	Low	Low
Revenue Sharing	High	Low	Medium	High

funds."[33] Figure 5 shows the different categories of transfers of revenue or the so-called decentralization funds, reflecting the value allocated in the 2013 budget.

33　Special Autonomy Funds only apply to the regions of Aceh and Papua, the details of which are regulated in their respective Laws (Law No. 21 of 2001 on Special Autonomy for Aceh, and Law No. 35 of 2008 on Special Autonomy for Papua). The scope of this study does not cover Special Autonomy Funds in detail.

Figure 5. Central Government Revenue Transfers to Regional Governments in 2013

BALANCING FUND

GENERAL ALLOCATION FUND
(Dana Alokasi Umum)

REVENUE SHARING
(Dana Bagi Hasil)

$29.9

SPECIAL ALLOCATION FUND
(Dana Alokasi Khusus)

OTHER TRANSFERS

ADJUSTMENT FUND
(Dana Penyesuaian)

SPECIAL AUTONOMY FUND
(Dana Otonomi Khusus)

$8.5　$3.0　$6.7　$1.3

Source: Laporan Keuangan Pemerintah Pusat 2013, Ministry of Finance, 2014

30　Respectively Law No. 17 of 2003 on State Finance, Law No. 1 of 2004 on State Budget, and Law No. 32 of 2004 on Regional Government. For more information on these laws see The Landscape of Public Climate Finance in Indonesia (Falconer et.al 2014).

31　Law No. 33 of 2004

32　Government Regulation No. 55 of 2005

Balancing Funds consist of three items: a General Allocation Fund, Special Allocation Fund, and Revenue Sharing. Each year the Balancing Fund items are allocated in legislative action through the Annual State Budget. In this Chapter we will discuss the General Allocation Fund and Revenue Sharing.

The majority of finance that flows through Revenue Sharing derives from the land use sector. We estimate that out of the USD 9 billion of Revenue Sharing in 2013, USD 7 billion came from land use. There may be opportunities to improve Revenue Sharing to incentivize local officials to support improved productivity and more sustainable land management. On the other hand the General Allocation Fund accounts for the highest proportion of distributed revenue but there is little opportunity to allocate funds for land use-specific purposes.
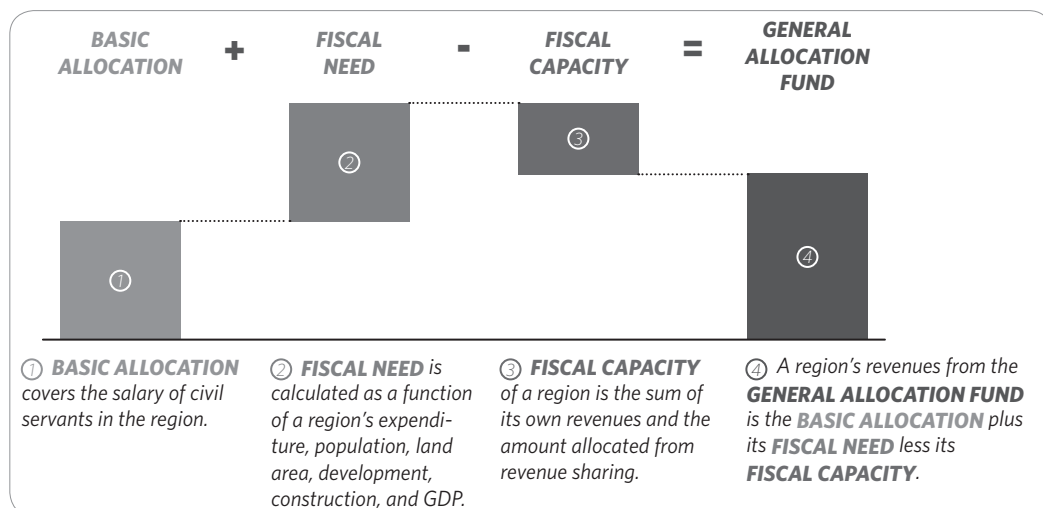
4.1 General Allocation Fund

The General Allocation Fund provides the largest share of revenue transfer to regions, but might actually discourage regions from raising their own revenue (Bappenas 2008; see Box 4). There is low potential to reform or improve the GAF mechanism.

At least 26% of the state's net revenue must be allocated to the General Allocation Fund (GAF). The formula for calculation of GAF is as follows:[34]

The basic allocation to each region is calculated to cover the salary of civil servants in the region. Fiscal need is determined by considering the specific needs of that region by assessing total expenditure, population index, area size index, human development index, construction index, and regional GDP. Fiscal capacity is determined based on the region's own source revenue and the amount allocated from revenue sharing. The formula for GAF and its 26% allocation in the annual state budget is regulated by law and is thus inflexible.

Overall, the GAF has low potential in three relevant categories, it is has almost no room for optimization

Figure 6. General Allocation Fund

BASIC ALLOCATION	+	FISCAL NEED	-	FISCAL CAPACITY	=	GENERAL ALLOCATION FUND

① **BASIC ALLOCATION** covers the salary of civil servants in the region.

② **FISCAL NEED** is calculated as a function of a region's expenditure, population, land area, development, construction, and GDP.

③ **FISCAL CAPACITY** of a region is the sum of its own revenues and the amount allocated from revenue sharing.

④ A region's revenues from the **GENERAL ALLOCATION FUND** is the **BASIC ALLOCATION** plus its **FISCAL NEED** less its **FISCAL CAPACITY**.

Source: CPI illustration based on Government Regulation No. 55/2005

and practically no flexibility due to its pre-determined allocation by the law. This means that there is low potential for improvement in GAF to support better land use management and revenue at local level.

4.2 Revenue Sharing

The Revenue Sharing mechanism may provide a promising path through which to meet the government's objective of decreasing GHG emissions from land use and decreasing land expansion. There is evidence that Revenue Sharing mechanisms may incentivize land expansion. We see high potential to improve the Revenue Sharing mechanism to support sustainable land use.

The Revenue Sharing mechanism transfers state revenue from certain types of tax and natural resource (non-tax) instruments to regions according to a predefined percentage enacted in a law. A large share of these revenues goes back to the region from which the revenue was sourced. Table 5 compares Revenue Sharing allocations between Central and Regional Governments,[35] in 2013.[36]

In terms of the percentages themselves, the following applies:

- revenue-sharing percentages differ depending on the type of instrument and are not necessarily distributed back to the district from which revenues originated;

- VAT and export taxes, as well as agriculture non-tax revenue, is spent entirely by the central government;

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34   Article 40, GR No. 55/2005

35   Chapter II, GR No. 55/2005
36   Law No. 15 of 2013 on APBN-P 2013.

Box 4: Does the General Allocation Fund discourage regions from raising their own revenue?

The GAF formula interestingly shows that the more the fiscal capacity of a local government, the less GAF it will receive. This means that there is an inverse relationship between the local government's own-source revenue from its natural resources, and the local government's revenue from central government transfers. If increasing local revenue would reduce GAF, then there may be an incentive for local governments to keep their local revenues modest (DSF World Bank 2010). Over-reliance to the GAF might hinder local government's effort in optimizing revenue, such as from land, as well as in managing the land use sustainably. This is an issue that merits further analysis in a follow-up study on how this might affect regional land use policies. However, some have argued that GAF in fact can be used to channel lump-sum grant for ecological fiscal transfer, for instance to regions that are able to maintain its protected area (Mumbunan et al. 2012).

- land and building taxes, and non-tax collections from certain sectors, e.g. forestry and and mining, are in large part redistributed to regions;

- despite receiving only a minority percentage, oil and gas revenues remain one of the largest sources of regional revenue; and

- there is no direct revenue-sharing from the plantation sector.

The revenues that are largely distributed back to the relevant regional governments— that is, from land and building taxes, forestry non-tax revenues, and mining non-tax revenues—are mostly calculated based on land size (including mining fixed fees).[37] While more analysis is required, it is possible that these taxes may encourage regional governments to grant more land permits to increase revenues, thus encouraging land expansion.

Oil and gas non-tax revenues collected centrally are an important source of revenue for oil and gas producing regional governments. Although the proportions of these that are redistributed to regional governments are small, their nominal value is comparatively large.

When considering incentives to use land efficiently, it is important to note that revenue derived from agricultural production is collected by the central government and not subject to revenue sharing. Similarly, revenue from the registration of BPN-issued land concessions relevant to plantations

(HGU and HGB) also flow to the central government.

In conclusion, there is evidence that regions have very little to gain from discouraging land expansion and do not share in the benefits of agricultural production. Because revenues from oil and gas non-tax instruments mostly flow back to the regions from which they originated, provinces such as Central Kalimantan which have no oil or natural gas reserve and depend on mining or forestry to access Resource Revenue Sharing, tend to miss out, possibly limiting their buy-in to improve land productivity and optimize revenue. However detailed simulations are required to understand the full impacts of changes in revenue sharing mechanisms.

With regard to its potential for improvement, Revenue Sharing has high potential. This comes from its high potential for optimization, since its realization rate was only 75%. Moreover, Revenue Sharing had medium potential for amendment, since it is regulated under Government Regulation.

Table 5. Revenue Sharing Allocations

INSTRUMENT		CENTRAL %	REGIONAL %	REGIONAL USD MILLION IN 2013
TAX	Land & Building Tax	10%	90%	2,382
	Income Tax (onshore individual)	80%	20%	1,836
	Tobacco Excise	98%	2%	207
FORESTRY NON-TAX	Forest License Fees	20%	80%	53
	Forest Resources Collection Fees	20%	80%	54
	Reforestation Fund	60%	40%	64
ENERGY & MINERAL RESOURCES NON-TAX	Mining landrent fixed fees	20%	80%	46
	Mining royalties	20%	80%	1,387
	Oil	84.5%	15.5%	1,493
	Gas	69.5%	30.5%	1,325
	Geothermal	20%	80%	43
	TOTAL			8,890

Source: CPI calculation based on Central Government Financial Report, Ministry of Finance (2014)

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37   The tax and non-tax instruments that are land use related and not listed in Table 2, such as Export Tax and Non-Tax applicable to the Land Registry Office, remain within the Central Government and are not allocated out as Revenue Sharing at all.

5. Earmarking Central Transfers to Optimize Land Use

Indonesia's Adjustment Funds show the most potential for further revenue optimization and offer flexible allocation options that could be tailored to incentivize more sustainable land use.

The central government has access to three mechanisms through which it may earmark the way funds are used. Non-tax revenues can be earmarked to pay for central government programs, while Special Allocation Funds and Adjustment Funds can be earmarked to pay for specific regional programs.[38]

Adjustment Funds reached USD 6.7 million in 2013, representing the second largest budget transfer, but they offer low potential for revenue optimization. The Special Allocation Fund provides lower revenues than Adjustment Funds, at USD 3 million. As non-tax revenues hold the greatest value of the three at USD 8.5 million, they offer the highest potential for revenue optimization. However, the following sections will show how ultimately Adjustment Funds offer the best potential for adjustment.

Table 6. Potential to adjust revenue earmarking mechanisms

INSTRUMENT	CRITERIA			LIKELIHOOD FOR IMPROVEMENT
	POTENTIAL FOR OPTIMIZATION	EASE OF AMENDMENT	FLEXIBILITY OF ALLOCATION	
Non-Tax Revenue	High	Medium	High	High
Special Allocation Fund	Low	Medium	Medium	Medium
Adjustment Funds	Low	Medium	High	High

5.1 Earmarking to support central government programs

Line ministries can earmark non-tax revenue to fund sustainable land use activities. This process is under-utilized, but there is high potential to improve the way non-tax revenues are earmarked.

An important difference between tax and non-tax revenues is how they are collected and managed. While taxes are collected and managed by the MoF (through various tax and customs offices), non-tax revenue is collected by the relevant ministry and jointly managed. Non-tax revenue enters the APBN (state budget) but can be earmarked by the collecting ministry, or may even be managed entirely outside the APBN.[39]

The greatest limitation is that despite collecting the revenues in question, the sector ministries' ability to access funds is not guaranteed and flexibility must be approved by the Ministry of Finance. The basis for approval is not clearly defined and there is no data on the rate of approvals or rejection by the MoF.

Laws can explicitly earmark taxes, though few examples exist in practice. To date, only certain regional taxes are earmarked. These include the Cigarette Tax (50% of which is earmarked to fund public health services), the Road Lighting Tax (which is partially allocated to fund road lighting), and the Vehicle Tax (at least 10% of which is allocated to fund road construction or maintenance and public transportation facilities).

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38   There is also the argument that the problem is not to generate earmarked revenue, but to channel it. This is the case of the Reforestation Fund which has accumulated nearly USD 2.2 billion, as of 2009 but failed to disburse the USD 500 million budgeted for forest development during 2008 and 2009. Similarly, regional governments who have accumulated USD 500 million since 2001 are still facing technical capacity in disbursing it effectively (Barr et.al. 2010).

39   In order for the collecting ministry to set aside part of the PNBP they collected for their own use, the ministry must submit a proposal to the Ministry of Finance along with a description of the planned use of the funds. The fund could also go into a Public Service Unit (Badan Layanan Umum), in which case it is collected, managed, and disbursed outside the APBN (off-budget). See Article 8 of Law No. 20/1997 on Non Tax State Revenue and Government Regulation No. 73/1999 on Guidelines for Use of Non Tax State Revenue from Certain Activities.

5.2 Earmarking to Support Regional Government Programs

Aligning the value of earmarked transfers with the value of contributions originally received from regional governments could encourage better land management.

5.2.1 SPECIAL ALLOCATION FUND (SAF)

The value of the Special Allocation Fund is determined and allocated annually to fund activities in specific regions that are deemed a national priority. Unlike the General Allocation Fund, the Special Allocation Fund is earmarked to various sectors that the central government decides need development.[40] However, the Special Allocation Fund cannot be used to fund administrative tasks, preparation activities, research, training, or business travel.[41] Its purpose is to fund the implementation of certain targeted development programs.

Regions receiving the Special Allocation Fund must contribute their own funds to the value of 10% of Special Allocation Fund received. There is no fixed formula for determining the regions to which the Special Allocation Fund will be allocated, though they must fulfill certain general, specific, and technical criteria. The value of the Special Allocation Fund allocations depend on the region's fiscal index, the region's characteristics or special autonomy if any, and technical criteria related to the implementation of national priority programs formulated by relevant ministries.[42]

The Special Allocation Fund's formula's main benefit is its flexibility relative to the General Allocation Fund. Its formula is regulated in a government regulation, but it is less defined compared to the General Allocation Fund. It also has more flexibility in that it does not have any fixed minimum percentage for allocation in the annual budget.

Despite this flexibility, the Special Allocation Fund also has some limitations. The main issue is that the size of the Special Allocation Fund constitutes the smallest portion of central to regional fund transfers. In 2013 the Special Allocation Fund was USD 3 billion or only 6% of total central transfers, which was further allocated to about thirteen different sectors. Given its medium flexibility in regulation and allocation, the SAF as an earmarked instrument has medium potential to be improved to achieve better land use management especially at local level.

There are also problems getting the Special Allocation Fund to achieve its purpose. Research points to a limited regional capacity to absorb the Special Allocation Fund, which is not always targeted to the right activities and cannot be used to fund capacity building (World Bank 2010). Moreover, regional governments have little room to manoeuver the use of funds in accordance with their local knowledge of the region, because specific disbursement items are dictated by the central government (Bappenas 2010). Finally, while the Special Allocation Fund has more flexibility than the General Allocation Fund, the Adjustment Funds have even more flexibility, as discussed in the next section.

5.2.2 ADJUSTMENT FUNDS

Adjustment Funds are loosely defined as a collection of annual fund transfers that were created ad hoc to pursue specific government priorities like education, or infrastructure development. Some of these funds were created through regulation; for example the School Operational Assistance Fund (Bantuan Operasional Sekolah) and Teachers Profession Benefit Fund (Dana Tunjangan Profesi Guru) were both created through Government Regulation No. 48 of 2008 on Education Funding. Others, such as the Regional Infrastructure Adjustment Funds (Dana Penyesuaian Infrastruktur Daerah) and the Regional Infrastructure Acceleration Fund (Dana Percepatan Pembangunan Infrastruktur Daerah), were created through the state budget planning and discussion process, and later cemented in the relevant annual law on APBN.[43]

Despite not being part of the official transfer mechanisms regulated in Law No. 33/2004 on Central-Regional Fund Balance, Adjustment Funds constitute a large portion of decentralization funds.

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40   In the 2013 State Budget the SAF was allocated to 19 sectors, i.e. education, health, road infrastructure, irrigation infrastructure, drinking water infrastructure, sanitation infrastructure, regional government facilities, marine and fisheries, farming, environment, birth control, forestry, trade facilities, disadvantaged region facilities, village energy, housing, road transportation safety, village transportation, and border area facilities. This has come a long way from when the SAF first started to be implemented in 2003, when it was only allocated to 5 sectors (education, health, roads, irrigation, and government facilities).

41   Article 60(3) of GR No. 55 of 2005

42   Chapter IV, GR No. 55/2005

43   These infrastructure funds were once challenged to the Constitutional Court on the grounds that they had no legal basis under Law No. 33/2004 on Central-Regional Fund Balance. However the Constitutional Court rejected this challenge because it was deemed "a law implementation issue" instead of unconstitutional. See Constitutional Court Decision No. 60/PUU-IX/2011.

Adjustment Funds are also relatively flexible. They are not regulated in Law No. 33 of 2004, making them easier to change than the Special Allocation Fund or General Allocation Fund. In addition, there is no formula for their allocation, which means that allocations could be determined quite flexibly according to actual needs. Due to these two factors, the Adjustment Fund has high potential to be improved to support better land use management.

Perhaps because of these factors, the Central Government has shown interest in utilizing earmarked transfer instrument such as the Adjustment Funds in recent years. Since 2010 there has been a marked increase in the amount allocated to the Adjustment Funds and General Allocation Fund.[44] The Adjustment Funds saw a nearly three-fold increase from USD 1.9

billion in 2010 to USD 5.4 billion in 2011, which came from additional national government ad hoc programs.[45] On the other hand, the amount allocated to the Revenue Sharing (tax and non-tax) to regional governments has stagnated over the last four years (Figure 7).

Overall, while the Special Allocation Fund and Adjustment Funds share a similar purpose to fund specific priority programs, the Adjustment Funds are dictated by less regulation and have more flexibility in allocation. This may explain why the value of Adjustment Funds is higher than that of the Special Allocation Fund. We recommend follow-up work on whether there is further room to improve the Special Allocation Fund or to utilize the Adjustment Funds to fund effective sustainable land use activities.

Figure 7. Central Government Transfers 2006-2013
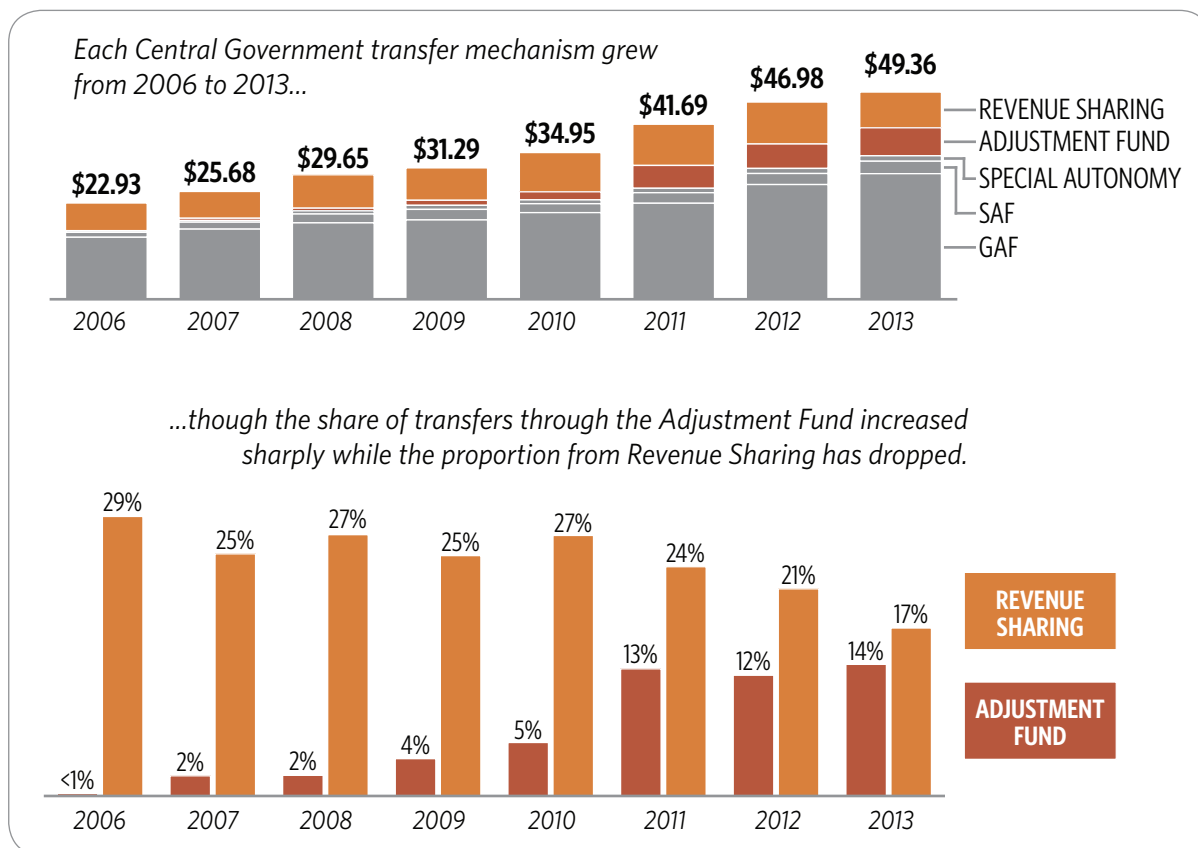
Source: Central Government Financial Report, Ministry of Finance (2014)

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44   The increase of GAF is mainly caused by continuous local government proliferation which automatically receive GAF in their second year of establishment. In the first ten years of decentralization, number of local government had increased by 64% compared to pre-decentralization, or 205 new autonomous governments. GAF in 2002 was allocated at IDR 1.3 trillion and in 2010 had gone up to IDR 48 trillion (Harmantyo 2011).

45   Year 2011 saw an increasing allocation of Adjustment Funds, either in the form of addition on existing programs or new programs. The number rose from nearly USD 2 billion in 2010 to USD 5.4 billion. Adjustment Funds are allocated mostly to support education such as School Operational Assistance and Teacher Professional Allowance, regional infrastructure such as Regional Infrastructure Development and Infrastructure Acceleration Funds, and as incentive for good public financial management such as Regional Incentive Fund.

6. Conclusions and Next Steps

This paper has reviewed all the tax and non-tax revenue-collection instruments in Indonesia, and has identified those that affect, or may affect, land use.

Specifically, we have assessed each instrument against various factors including (1) potential to discourage land expansion, (2) its potential for revenue optimization based on size and realization of targets, (3) its potential for reform, and (4) its potential to work within the existing policy framework to shift revenue allocations towards sustainable land use initiatives. Within this framework, we have looked at the lifecycle of each revenue instrument - from the way revenues are collected, transferred from central to regional governments, and, when applicable, how they can be earmarked to specific land use activities.

Our findings form a general picture of which instruments hold promise for reform to meet the government's goals to increase revenue while safeguarding against more land expansion. The instruments that show promise are indicated throughout sections 3-5. Overall, while the legal basis defining types of revenue-collecting instruments cannot be easily changed, specific rates and tariffs are easier to adjust.

Several over-arching conclusions also emerge from this work.

1. Most revenue-collecting instruments are based on production rather than land size. While the optimal mix of production and land use revenue collection instruments needs to be modeled in detail, the current, large weight toward production-based revenue collection may be undermining the government's goals. Instruments that are calculated based on land area size and could discourage land expansion, namely the Land & Building Tax, Forestry non-tax revenue, National Land Registry non-tax revenue, and Mining and Geothermal fixed fees (such as land rent), only contribute 2.6% of total revenue. Instruments that are calculated based on the production of land, namely VAT, income tax, export tax, as well as certain items in the non-tax revenue category such as mining royalties, place a burden on revenue are indifferent when it comes to levels of productivity per hectare.

2. Many major revenue items from regional activities do not get distributed back to the region where they were sourced. The revenue that does get distributed back is mostly through transfers that are calculated based on land size, which may in fact incentivize regional governments to grant more land permits, again possibly undermining the government's goals. Non-tax revenue from the agriculture sector is low compared to revenues from the mining, oil & gas, and forestry sector, and the little collected does not get distributed back to regions. Land and building taxes, oil and gas, and forestry revenues, provides large amounts of distribution to regions. VAT, corporate, and export taxes are spent entirely by central government.

In addition, regional governments' biggest source of revenue is from the General Allocation Fund (GAF) instead of from revenue-sharing mechanisms, and the GAF formula may actually perversely incentivize regional governments to keep their production-based natural resource revenues low in order to gain more fund allocation from central government. This dampens revenue optimization, and may even create a disincentive for local governments to optimize their revenue through better governance, which does not provide an encouraging environment for better land use management.

3. Earmarked revenue may provide a mechanism for funds to be used to develop the sustainable land use sector. However, currently, this option is very limited. Tax revenue is not earmarked, and although non-tax revenue can be earmarked, there is no guaranteed access to the funds nor much flexibility on what it can be used for. Earmarked Central-to-Regional revenue transfer instruments may provide an option to develop incentives for regional governments to develop sustainable land use policies, however this option is also currently limited. The Special Allocation Fund represents a minimal source of revenue compared to other fund transfers, and Adjustment Funds currently do not include any sustainability-related activities. However, because Adjustment Funds have no fixed formula for allocation, it is easier to change and shows high potential for fund allocation towards sustainable land use.

Next Steps: Further Studies

1. Revenue-collecting instruments that show the most potential, including Regional Taxes, Land & Building Tax, Export Tax, Forestry Non-Tax Revenue, Agriculture Non-Tax Revenue, and Land Registry Non-Tax Revenue, need to be examined more closely to identify specific entry-points for improvement. Recommendations for amending each instrument need to be developed by conducting a sensitivity analysis to test how different formulas or tariff rates might work.

2. Revenue transfers from central to regional governments need to be further analyzed for their specific impacts on land use behavior. Further studies could look at the magnitude of funds being disbursed back to regional governments, compare them to regional government own-source revenue, and analyze whether these conditions impact land use policies both at the central government level and regional government level.

3. Revenue earmarking options need to be further scrutinized to identify recommendations to ease the earmarking of revenue to fund sustainable land use initiatives. Follow-up studies can look into the share of specific budgets earmarked for land use relevant sectors and ways to utilize earmarking instruments to incentivize sustainable land use.

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Appendix A. Methodology to Determine Potential for Improvement to Optimize Revenue and Land Use Management.

This paper selects a number of revenue instruments – tax and non-tax, and revenue sharing instruments – central government transfer to region. We determine their potential to be improved to support Indonesia's goals in optimizing revenue as well as better land use management. To determine the potential of each instrument, we use four criteria and applied score to determine the category – low, medium, high – of the potential.

Potential for Revenue Optimization

Potential for revenue Optimization is indicated by revenue-collection realization rate (in percent) and its relative size to total revenue. Instruments which have high realization rate are more difficult to optimize, and several of them have collection rate far beyond their targets. However, over-target revenue does not mean they contribute significantly to total revenue. Hence we also consider how important the instruments are, in terms of size, relatively to total revenue or revenue sharing.

Table A.1. Categorization for Potential for Revenue Optimization

ASSESSMENT FACTOR	CONDITION	CATEGORIZATION
Realization Rate	> 95%	High
	90% - 95%	Medium
	< 90%	Low
Proportion to Total Revenue/Revenue Sharing	> 30%	High
	10% - 30%	Medium
	< 10%	Low

Potential to Discourage Land Expansion

Potential to discourage land expansion is indicated by whether the formula used to estimate the size of an instrument is based on land size or not. Instruments which formulas are based on land size are indicated as 'high' and those with formulas based on size of production are indicated as 'low'. However there are sectors or instruments that include both land size and production in their formulas such as in mining and geothermal sectors, as well as a variety of regional taxes. For these items we did thorough research in regulations in the sectors, and concluded that most regulations governing revenue in these sectors are mostly not based on land size. Hence we apply 'medium' category to them.

Table A.2. Categorization for Potential to Discourage Land Expansion

ASSESSMENT FACTOR	CONDITION	CATEGORIZATION
Revenue formula is based on land size	Yes	High
	Mostly No	Medium
	No	Low

Ease of Amendment

For an instrument to be considered potential, its relative easiness to be amended can be crucial. This criteria also represents political factor behind the revenue and revenue sharing instruments that must be taken into consideration. A revenue which is governed by a ministerial decree is more likely to be amended or improved than one which is based on a law, which will require lengthy political process in the parliament.

Table A.3. Ease of Amendment

ASSESSMENT FACTOR	CONDITION	CATEGORIZATION
Type of regulation governing the instruments	Ministerial Decree	High
	Government Regulation	Medium
	National Law	Low

Flexibility of Allocation

Flexibility of allocation is an elaboration of our regulatory analysis. In each regulation governing specific instruments we see, whether there is an exact formula to calculate the size and how flexible the calculation formula is, for instance changing the tariff's rate. Due to several factors included in assessing the category, the categorization itself would consider several conditions as presented in Table A.4.

Table A.4. Flexibility of Allocation

ASSESSMENT FACTOR	CONDITION	CATEGORIZATION	EXAMPLE
The availability of formula for the instruments, regulations governing the tariff or rate, whether it can be allocated to other uses.	No rate or specific formulas. If any, it is regulated by Government Regulation (GR) or Ministerial Decree (MD), can be allocated to other uses	High	Adjustment Fund
	Formula and rate exist, but governed by GR or MD, cannot be allocated to other uses	Medium	Natural Resource Non-tax Revenues
	Formula and rate exist, governed by national law, no possibility to be allocated to other uses	Low	Tax Revenues and General Allocation Fund

Determine the Overall Potential

To determine the overall potential into 'high, medium, low' category, we apply scores to each of the instruments against the assessment factors. There are total 17 instruments which are scored against 6 instruments. Using the mean and standard deviation from the scores, we are able to divide into 3 categories:

Table A.5. Total Score and Category

TOTAL SCORE	CATEGORIZATION
> 70	High
48 < Score < 70	Medium
< 48	Low