



ARTICLE 33 INDONESIA WORKING PAPER

Understanding Aspects of Economic Rent of Timber Forest Resources Extraction in Indonesia

Riko Wahyudi



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List of Abbreviations

AMDAL : Analisis Mengenai Dampak Lingkungan (Indonesian Environmental

Impact Assessment System)

BUMN : Badan Usaha Milik Negara (State Owned Enterprise)

DBH : Dana Bagi Hasil (Revenue Sharing Fund)

DAS : Daerah Aliran Sungai (Watershed)

DR : Dana Reboisasi (Reforestation Fund)

GAPKI : Gabungan Pengusaha Kelapa Sawit Indonesia (Indonesian Palm Oil

Association)

HPH : Hak Pengusahaan Hutan (Forest Concession Right)

HP : Hutan Produksi (Permanent Production Forest)

HPK : Hutan Produksi yang Dapat Dikonversi (Conversion Forest)

HPT : Hutan Produksi Terbatas (Limited Production Forest)

HGU : Hak Guna Usaha (Land Use Permit)

HHK : Hasil Hutan Kayu (Timber Forest Products)

HHNK : Hasil Hutan Non-Kayu (Non-Timber Forest Products)
HTI : Hutan Tanaman Industri (Industrial Plantation Forest)

HTR : Hutan Tanaman Rakyat (Community Plantation Forest)

IHPH : luran Hak Pengusahaan Hutan (Forest Concession Royalty)

IPK : Izin Pemanfaatan Kayu (Timber Clearance Permit)

IIUPH : luran Izin Usaha Pemanfaatan Hutan (Forest Utilization Business

Permit Fee)

ITTO : The International Tropical Timber Organization

IUPHHK-HA : Izin Usaha Pemanfaatan Hasil Hutan Kayu- Hutan Alam (Business

Permit to Utilize Timber Forest Product - Natural Forests)

IUPHHK-HT : Izin Usaha Pemanfaatan Hasil Hutan Kayu- Hutan Tanaman (Business

Permit to Utilize Timber Forest Products - Timber Estate)

LHC : Laporan Hasil Cruising (Cruising Report)

LHP : Laporan Hasil Produksi (Production Report)

PBB : Pajak Bumi dan Bangunan (Land and Building Tax)

PDB : Produk Domestik Bruto (Gross Domestic Product)

PMK : Peraturan Menteri Keuangan (Regulation of Minister of Finance)

PNBP : Penerimaan Negara Bukan Pajak (Non-Tax State Revenue)

PPKH : Pinjam Pakai Kawasan Hutan (The Rent-and-Use of Forest Area)

PSDH : Provisi Sumber Daya Hutan (Forest Resource Rent Provision)

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RHL : Rehabilitasi Hutan dan Lahan (Land and Forest Rehabilitation)

RKU : Rencana Kerja Umum (General Work Plan)

RKT : Rencana Kerja Tahunan (Annual Work Plan)

SDA : Sumber Daya Alam (Natural Resources)

TPTI : Tebang Pilih Tanam Indonesia (Indonesian System of Selective Cutting

and Planting)

TPTJ : Tebang Pilih Tanam Jalur (System of Selective Cutting and Line

Planting)

THPB : Tebang Habis Permudaan Buatan (Clear Cutting with Artificial

Regeneration)

Understanding Aspects of Economic Rent of Timber Forest Resources Extraction in Indonesia

Background

Extraction of timber forest resources had been started intensively in 1970 with the issuance of Government Regulation (PP) No. 21 of 1970 on Forest Concession and Government Regulation (PP) No. 23 of 1970 on Forest Planning. At that time, 45 units of forest concession in the form of Forest Concession Rights (HPH) had begun to operate. Since then, every HPH had also subjected extraction rent charges (*pungutan rente*) of timber forest resources, such as Forest Royalty Concession (HPH) and Forest Products Royalty (IHH)¹.

Over the course of HPH in Indonesia, economic rent of extraction of timber forest resources has become a classic issue or debate. The debate arised from people's various perspectives. Academics viewed that extraction rent of timber forest resources has not calculated social and ecological values affected by forest concession. Based on one calculation, the charged rent is only 15% of conversion return (CR) of the log sale (Handhadari, 2012). The value of extraction rent is more determined through collusion between government and company. Public shares similar perspectives where they tend to assume that *firstly*, Forest Concession Right (HPH) earns heavily

See Government Regulation Number 22 of 1967 on Forest Concession Royalty and Forest Products Royalty.

in the timber concession and *secondly* that the government charged too little economic rent on forest products. This applies mainly to charges -in the form of Reforestation Funds (DR) and Forest Resource Rent Provision (PSDH)- which currently in force².

Interestingly, entrepreneurs holding HPH hold different perspective and calculation. They consider that part of timber production cost flows in the form of invisible costs. Some parts of these invisible costs went to the pockets of government officials due to social disruption and falling prices of timber. In result, HPH profit shrunk, much smaller than government levies/charges or big profit gained.

How much should economic rent of timber extraction be? It is not easy to gain explanation on the inaccuracy rate of economic rent just by using simple formula. The difficulty is either because the system is unsuitable with the concession climate in Indonesia, or the bias of calculation component numbers that are too high between HPHs, due to the lack of similar pattern and standard in the management and financing of forest concession (Handadhari, 2012). While according to some views, it is the lack of transparency in the financing of forest concession which explains why nobody is able to accurately calculate the economic rent of HPH, not even the HPH holders.

On the other hand, we know that deforestation continues to occur at a rate of 1.08 million ha per year (Ministry of Forestry, 2010). Communities around the forest remain poor and disasters constantly occured. All these aspects were disregarded in determining or collecting, allocating and distributing the use of economic rent of extraction of timber forest resources in Indonesia. Not to mention the expansion of mining and oil that has penetrated into the forest. Mining and oil companies operate within the forest area with rent that does not consider the ecology aspect. Moreover, the economic rent is not used for the reforestation.

Driven to understand the problems abovementioned, this paper attempts to explain various rent charges/levies of timber forest extraction along with its allocation and distribution, in simple manner. This paper gathers papers on economic rent of timber extraction from various literatures in order to draw a line on the problem and to offer a solution.

This paper begins with presentation of various forest concession activities in the forestry sector, which whill then focused on the concession of of timber forest products. Description of timber forest products will begin with extraction chain of timber forest resources and then focused on the determination and collection of economic rent of timber extraction and their impact on forest conservation and state revenues. Later it will explore a bit of improvement in the collection of rent of timber forest products in Indonesia. This descriptive paper is expected to give a simple initial insight to understand the economic rent of extraction of timber forest resources in Indonesia which then would initiate discussion that leads to improvement in the forestry sector in Indonesia.

² See Decree of Minister of Forestry Number 124/KPTS-II/2003 on Forest Resource Rent Provision and Decree of Minister of Forestry Number 128/KPTS-II/2003 on Reforestation Fund

Sources of economic rent in forestry sector

Forest concession activities are mainly divided into activities of forest utilization and forest area use³. Forest utilization activities are activities directly related with forestry sectors conducted within the forest area; for example, utilization of timber and non-timber forest products; such as rattan, latex, honey, etc.

While, forest area use activities are non-forestry activities conducted within the forest area by rent-and-use manner or exchanging manner (Rahajaan, 2002). Rent -and-use means utilization of forest area without changing status, function and allocation of the forest area. Upon completion of the rent -and-use permit, the permit is required to conduct reclamation and rehabilitation in order to restore the forest to the original condition; although in reality that would be impossible.

Exchanging of forest area means utilization of forest area by changing status, function and designation of the forest area. The area which previously declared as forest area is converted into non-forest area for other use with the assurance of preparing land compensation in lieu of area of forest used. Permit holder of conversion forest obtained Land Use Permit (HGU) and ownership of land. Some people often referred exchanging of forest area as release or conversion of forest area; for example, conversion of forest to palm oil plantation activities.

What is the relation between forest concession and economic rent? Basically all activities abovementioned are subjected to economic rent in the form of Non-Tax State Revenue (PNBP) in forestry sector, which will be described as follow.

2.1. Forest utilization activities

Forest utilization is form of activities; directly related with forestry sector, conducted within the forest area. The activities comprise of area utilization, environmental services utilization, utilization of timber and non-timber forest products, and extraction/collection of timber and non-timber forest products, which shall be intended to obtain optimum benefit for welfare of all by maintaining preservation thereof ⁴. Forest area utilization can be made to all forest areas (conservation forest, protection forest and permanent production forest), except natural conservation forest as well as core zone and forest zone in national park. Allow me to explain each one in more detail.

2.1.1. Utilization of forest area

Utilization of forest area means using forest areas including conservation forest, protected forest and production forest, without converting function and status of the forest⁵.

³ See Law Number 41 of 1999 on Forestry

⁴ Sea Regulation of Minister of Forestry No.12/Menhut-II/2010 on Procedures of Imposition, Collection and Payment of Forest Utilization Business Permit Fee in Production Forest, article 1

⁵ See Government Regulation No. 34/2002 on Forestry Systems and the Planning of the Management and Use of Forested Areas, Article 15-18.

Forest area utilization activities can be in forms of cultivation of medicinal plants, cultivation of ornamental plants, the cultivation of food crops below the stands (specifically for HP), mushroom cultivation, bee farming, farming or animal breeding, or the cultivation of wallet bird nests. Economic rent charged on each business or operation permit issuance for the utilization of forest area may be in the form of Forest Utilization Business Permit Fee (IIUPH) or Forest Resource Rent Provision (PSDH). Charging of IIUPH is based on forest area given in the permit, while charging of PSDH is calculated based on amount, volume, or weight of type (of commodities) used in forest areas.

2.1.2. Utilization of environmental services

Utilization of environmental services is every form of business utilizing the potential of the environmental services of protected and production forests -without damaging landscape and environment within and around the forest area.⁶ Forms of utilization of environmental services in the forest area include nature tourism business, extreme sports business, water utilization business, carbon trading, or forest and environmental rescue effort. Economic rents charged for every environmental services utilization permit holder include IIUPH and PSDH.

2.1.3. Utilization of timber and non-timber forest products within Permanent Production Forest

Utilization of timber forest products and non-timber forest products within permanent production forest is utilizing Timber Forest Products/Non-Timber Forest Products (HHK/HHNK) found within permanent production forest⁷. The utilization activities are distinguished into activities in natural forest and activities in timber estate within the production forest area. Business utilizing HHK/HHNK in natural forest is called of natural forest utilization business, while business utilizing HHK/HHNK in timber estate is called timber estate utilization business. HHNK that can be made into business include rattan, sago palm, bamboo, resin, bark, leaves, fruits or seeds.

Every holder of permit for utilization of Timber Forest Products in the timber estate is only subjected to IIUPH and PSDH charges, while utilization of Timber Forest Products in natural forest is subjected with IIUPH, PSDH, and Reforestation Funds (DR) charges. Utilization of non-timber forest products, both in timber estate and natural forest is only subjected with IIUPH and PSDH charges.

Following part will specifically explain business permit for utilizing timber and non-timber forest products in permanent production forest which bringing the most income in the forestry sector (Nurrochmat, 2010).

2.1.4. Extraction/Collection of Timber and Non-Timber Forest Products in Permanent Production Forest

Extraction/collection of Timber (HHK) and Non-Timber (HHNK) Forest Products in permanent production forest is extracting HHK and HHNK in permanent production forest,

⁶ Ibid, article 20 and 27.

⁷ Ibid, article 28.

by State Owned Enterprise (BUMN), private sector, or individuals⁸. HHNK which can be subjected with charges in this area of forest include rattan; honey; latex; fruit and other forest products, or hunting resort of unprotected wild animals. Every permit holder of extraction of HHK in the timber estate is subjected to IIUPH and PSDH charges, while extraction of HHK in natural forest is subjected with IIUPH, PSDH, and DR charges. Extraction of HHNK, both in timber estate and natural forest is only subjected with IIUPH and PSDH charges.

2.2. Forest Area Use

In accordance to Article 38 of Law No 41 of 1999 on Forestry, the use of forest area use in the interest of development beyond forestry activities can only be made in production forest area and protected forest area. Therefore, it is clear that the function of forest area may be changed or converted if it is utilized for strategic/public interests beyond forestry sector. Strategic interests include religious activities, defense, mining, power plant development and installation of renewable energy technology, and the development of telecommunication network or construction of water networks. As for the public interest, the activities included construction of public road and or railway, or canals for clean water and/or waste water, irrigation, water tanks, public facilities, telecommunications repiter and radio stations or television relay station.

As abovementioned, forest area use for non-forestry activities may be conducted in two manners; firstly, in rent -and-use manner and secondy, in fixed manner or conversion. These two will be explained as follow:

2.2.1.Rent-and-Use of Forest Area

Temporary Rent-and-Use of Forest Area (PPKH) is partial use of forest area to other parties for the interest of development beyond forestry activities without changing status, designation and function of the area. However, it should be noted that some requirement apply. Total area allowed for non-forestry activities in forest areas shall only be 10% (ten percent) of the total forest area.

Most controversial issues arise from rent-and-use of forest area for mining purposes. In the field, clashes/conflicts often arised between mining and forestry sector. We should be thankful on the large amount of mineral stored in our land, Indonesia. However, the minerals are often stored/ located in the forest area, including protected forest. Therefore efforts should be made to draw a line and solution for economic interests in forestry and mining sectors; not only focusing on one sector and shutting down other sectors.

Meanwhile, the utilization of forest area activities which are permitted without compensation, such as land compensation, PNBP, and reclamation shall apply on the following activities; firstly, national defense activities, safety facilities for sea or air traffic,

⁸ See Regulation of Minister of Forestry No. 46/Menhut-II/2009 on Procedure for Grant of Permit for Collection of Timber Forest Product or Non-Timber Forest Product in Production Forest, article 1 and 2

⁹ See Regulation of Minister of Forestry no. 14/Menhut-II/2006 on Guidinline of Rent-and-Use of Forest aream article 1

¹⁰ Ibid, article 7

checks on dams, ponds, sabo (sand/volcanic material dam), and facilities on meteorology, climatology and geophysics and secondly, survey and exploration activities¹¹.

The issuance of Government Regulation Number 24 of 2010 on the use of Forest Area has complemented Government Regulation Number 2 of 2008 concerning Types and Tariffs of Non-Tax Revenue on the Use of Forest Area. Presence of these two regulations shall be a general guide for all regulations pertaining to the use of forest area. Summarizing these two regulations, following description will present obligations of IPPKH Permit Holder. For the government, these obligations shall work as guidelines to resolve conflicts between mining and forestry sectors.

1) Obligations of Rent-and-Use (IPPKH) Permit Holder

There are obligations in the form of rent collection or compensation which should be paid by IPPKH Permit Holder in provincial area. For IPPKH Permit Holder in forest area where the target forest area is situated comprised less than 30% (thirty percent) of the total Provincial land area including islands and rivers, following obligations apply¹²:

- Provide compensation land 1 x Forest Area (KH) used + Affected Area L3 and reforestation (for non-forestry and non-commercial activities);
- Provide compensation land 2 x Forest Area (KH) used + Affected Area L3 and reforestation (for non-forestry and commercial activities);
- Pay non-tax State Revenues (PNPB) (calculated based on baseline area or affected area L1, L2, and L3);
- Pay PSDH and DR;
- Pay Forest Utilization Business Permit Fee (IIUPH) to Title Holder, if the forest area used is within area of Business Permit to Utilize Timber Forest Product (IUPHHK) concession.

While for IPPKH Permit Holder in forest area where the target forest area is situated comprised more than 30% (thirty percent) of the total rivers, islands, and/or provincial land area, following rent collection or compensation apply¹³:

- Carry out reforestation activities for the purpose of rehabilitating watershed with ratio of 1:1 because compensation land is very difficult to find (for non-commercial activities);
- Carry out reforestation activities for the purpose of rehabilitating watershed with ratio
 of 1:1 and total of affected area L3 because compensation land is very difficult to find
 (for commercial activities);
- Pay compensation on land compensation in the form of PNBP, which is 1% (one per cent) of price per unit of production of the total production for commercial activities, such as mining;
- · Pay non-tax State Revenues (L1, L2, dan L3);
- · Pay PSDH and DR;
- Pay IIUPH to Title Holder, if the forest area used is within area of Business Permit to Utilize Timber Forest Product (IUPHHK) concession.

¹¹ Ibid, article 1 and 2

¹² See Regulation of Minister of Forestry Number 18 of 2011 on Guidelines on the Rent-and-Use of Forest Area, article 7.

¹³ Ibid

2) Procedures for calculating PNBP of Rent-and Use of Forest Area (PPKH)

Rent-and Use of Forest Area Permit (IPPKH) Holder is subjected to PNBP. The basis of calculation is area baseline or forest area used and margin of forest area used in each category of L1, L2, dan L3¹⁴. Ministry of Forestry is using following formula.

PNBP IPPKH: = (L1 x tariff) + (L2 x 4 x tariff) + (L3 x 2 x tariff) IDR/year Where,

- L1 is the area affected by forest area used for permanent infrastructure. L1 includes factory, tailings pond, employee housing, roads, warehouses, offices, workshops, stock pile, harbor, washing plan, mine openings and other objects of rent-and use forest area(ha).
- L2 area affected by forest area used in temporary manner and which technically can be reclaimed. L2 includes topsoil stockpiles, overburden piles, minerals piles and sediment pond (ha).
- L3 is the area affected by forest area used for permanent infrastructure which technically cannot be reclaimed. L3 include vertical mine openings, former mining pit (ha).

Following Table 1 is listing PNBP type and tariff for Forest Area Use or Rent-and-Use Foresr Area atau Pinjam Pakai Kawasan Hutan (PPHK) applicable in the Ministry of Forestry.

Table 1
PNBP type and tariff for Forest Area Use or PPKH

Type of PNBP	Unit	Tariff
1. Forest area used for horizontal mine opening		
a. protected forest *	Ha /year	Rp3,000,000.00
b. production forest	Ha /year	Rp2,400,000.00
2. Forest area used for vertical mine opening		
a. protected forest *	Ha /year	Rp2,250,000.00
b.production forest	Ha /year	Rp1,800,000.00
3. Forest area used for underground mine		
a. protected forest	Ha /year	Rp2,250,000.00
b. production forest	Ha /year	Rp1,800,000.00
4. Forest area used for oil and gas, geothermal, telecommunications network, telecommunication repiter, radio stations, television relay station, electrification, installation of renewable energy technologies, installation of water, and highway		
a. protected forest	Ha /year	Rp1,500,000.00
b. production forest	Ha /year	Rp1,200,000.00

Source: Government Rgulation Number 2 of 2008.

Note: * Only applicable to mining company in accordance to Presidential Decree 41/2004

¹⁴ See Government Regulation Number 2 of 2008 on Types and Tariff on Types of PNBP Derived from the Use of Forest Area, Article 1.

2.2.2. Release or conversion of forest area permit

Release (conversion) of forest area permit may only be issued on Convertible Production Forest (HPK)¹⁵. However in practice conversion often occurred on Permanent Production Forest (HP) and Limited Production Forest (HPT). Conversion on Convertible Production Forest cannot be processed on provinces with forest area less than 30% (thirty percent) of total area of watershed, islands and/or province. That means compensation land is provided to compensate forest area released/converted into non-forest area.

Forest conversion which often draws public attention is for palm oil plantation. Investor's lack of understanding on forestry regulation creating a big problem. This occurs when plantation is located outside Convertible Production Forest (HPK) or within provinces with forest area less than 30% (thirty percent); therefore land compensation through exchange or conversion process should be provided.

According to the Secretary General of Indonesian Palm Oil Association (GAPKI) Joko Supriyono in *Tropis* Magazine (2010), plantation investors who already have invested in troubled areas felt confined and asked opportunities to continue their business. Some felt that they are victims of the retroactive policies. They had obtained conversion permit prior to the enactment of Law Number 41 of 2009 on Forestry. Problems got more complicated with the issuance of Government Regulation Number 10 of 2004 on on Procedures for Forest Area Use and Function Change that require business entities which have obtained conversion permit prior to the enactment of Law Number 41 of 2009 on Forestry, to deliver/provide compensation land with 1:1 ratio. The Government Regulation also requires the land to the following criteria: located within the same watershed, on other watershed areas within the same province, or other province in the same island.

To maintain investment climate, government should be able to sort and choose resolution on conversion forest cases. If faulty is not on the investor side, the government is obliged to protect the rights of plantation investor. However, if the case is caused deliberately by investor on the economic motives; by discounting procedures for maximizing profit, the government must act decisively to enforce the applicable regulations (Nurrochmat *et.al*, 2010).

HPK area to be converted for the development beyond forestry (read: plantation), is set with following composition: 80% (eighty percent) for the plantation companies and 20% (twenty percent) for local community of the total area of conversion forest. Forest areas are eligible to be released/ converted into plantation/farm if the forest areas are unable to deliver significant benefits in forestry sector; for example, less productive land and dominated by tall grass or shrubs/not trees. While forest areas that are not eligible to be released/ converted into plantation/farm include national park, nature reserve areas, tourism forest, protected forest and limited production forest. Once one forest area is released/ converted, permit holder will acquire Land Use Permit (HGU) and the ownership title of the former forest area¹⁶.

¹⁵ See Minister of Forestry Regulation No. P.33/MENHUT-II/2010 on Procedures for the Release of Forest Areas that are Eligible for Conversion, article 1.

¹⁶ See Regulation of Minister of Forestry No. 50/Menhut-II/2009 on Affirmation of Status and Function of Forest

Releasing forest area for plantation activities commonly referred as granting of Land Use Permit (HGU), adhered with several obligation including charges. Firstly, title holder shall provide compensation land to compensate forest area converted into non-forest area. Secondly, to pay PNBP of Conversion Forest set by decision of the Minister of Forestry. Thirdly, to pay PSDH and DR. Fourthly, to pay IIUPH to Title Holder, if the forest area used is within the area of IUPHHK concession.

Based on above description, we can get an outline of various forest concession activities which generate state revenue in the forestry sector. Following table will facilitate us in understanding forest concession activities and the economic rent charges.

Table 2
Forest Concession Activities and Types of Economic Rent Charges

No	Forest Concession Activities	Types of Economic Rent Charges				
		IIUPH	PSDH	DR	Others	
1	Forest Concession:					
	Utilization of Area	V	V	-	-	
	Utilization of Environmental					
	Services	V	V	-	-	
	Utilization of Timber Forest					
	Products:					
	Natural Forest	V	V	V	-	
	Timber Estate	V	V	-	-	
	Utilization of Non-Timber					
	Forest Products	V	V	-	-	
	Collection of Timber Forest					
	Products:					
	Natural Forest	V	V	V	-	
	Timber Estate	V	V	-	-	
	Collection of Non-Timber					
	Forest Products	V	V	-	-	
2	The Use of Forest Area:					
	Rent-and-Use Forest Area	V*	V	V	PNBP on The Use of Forest	
					Area (<i>Baseline</i> L1, L2, dan	
					L3)	
					Compensation Land	
					Watershed Reclamation	
	Release of Forest Area	V*	V	V	PNBP on the Release of	
	(Conversion)				Forest Area (Conversion)	
					Compensation Land	

Source: Data Processed (2012)

Note: * Subjected to charges if forest area used located in concession area

Utilization of Timber Forest Products in production forest

Following description of forest concession activities in general, both forest utilization and the use of forest area, this part will discuss utilization of timber forest products in more detail. It should be highlighted that up until today extraction of forest resources is conducted intensively in Indonesia and utilization of timber forest products is still the major source of income in forestry sector (Nurrochmat *et.al*, 2010). Unlike utilization of timber forest products, utilization of non-timber forest products and environmental services have not been used optimally.

There are two types of permits granted for utilization of timber forest; firstly, permits granted for utilization of timber forest products in natural forest within production forest area namely Business Permit to Utilize Timber Forest Product - Natural Forests (IUPHHK-HA) and secondly, permits granted for utilization of timber forest products in timber estate within production forest area namely Business Permit to Utilize Timber Forest Product – Timber Estate (IUPHHK-HT).

Forest concession activities in timber estate are usually referred as Industrial Timber Plantation (HTI) or Community Plantation Forest (HTR). HTR is forest area reserved by the Ministry of Forestry to be managed by individual or cooperative in order to improve the potential and quality of production forest¹⁷. HTI is developed within less productive production forest such as grassland area, scrub and or logged-over areas. On that basis, the HTI activities are different compare to production activities in primary natural forest. HTI activities include land clearing, seedling preparation, planting, stands maintenance, and harvesting. HTI is expected to improve land productivity and environment function¹⁸.

3.1. Chain of extraction of timber forest resources

Prior to assessment on economic rent of extraction of timber forest resources, it is necessary to understand the chain of extraction of timber forest resources. Basically, chain of extraction of timber forest resources consists of 3 (three) main chains; licensing chain, revenue chain, and timber distribution chain. Interestingly, based on Transparency International report (2010), all activities within the chain of extraction of timber forest resources are closely related to revenue or financial transaction (Figure 1).

Following are some descriptions on each main chain and its relation with each other.

¹⁷ See Regulation of Minister of Forestry Number 55 of 2011 on Application Procedures of Business Permit for Utilization of Timber Forest Product in Community Plantation Forest in Timber Estate, Article 1.

¹⁸ See Regulation of Minister of Forestry Number P.19/Menhut-II/2007 Procedures for Issuing Work Permits and Expanding the Area of Utilization of Forest Products Wood in Forest Plantation in Plantation in Production Forest

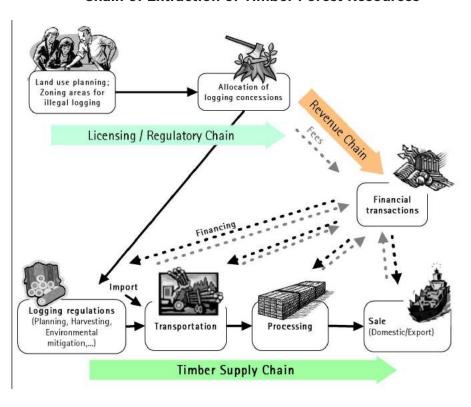


Figure 1
Chain of Extraction of Timber Forest Resources

Source: Forest Governance Integrity Programme" Tansparency International (2010)

3.1.1. Licensing chain

Licensing chain describes various activities in order to obtain the Business Permit to Utilize Timber Forest Product - (IUPHHK), both in natural forest and timber estate within production forests. The chain begin with determination of area/land, the making of Feasibility Study and Indonesian Environmental System Impact Assessment (AMDAL), until submission of permit application to the Regent, Governor and Minister of Forestry which culminated with issuance of Decree of Minister of Forestry on IUPHHK. Upon issuance IUPHHK permit holders are required to compile General Work Plan (RKU) and Annual Work Plan (RKT). The RKU and RKT shall contain planting plan and allowable felling of timber.

3.1.2. Revenue chain

Revenue chain describes various fees, both tax and non-tax, paid by IUPHHK holder to the government. In the context of extraction of timber forest resources, income that is categorized as revenue in the forestry sector is non-tax revenue, or commonly referred as Non-Tax State Revenue (PNBP). PNBP of extraction of timber forest resources consists of Forest Utilization Business Permit Fee (IIUPH) and Forest Resource Rent Provision (PSDH) for IUPHHK-HT (Timber Estate) and IIUPH, PSDH, and Reforestation Funds (DR) for IUPHHK-HA (Natural Forest).

Ideally *PNBP* on timber is used for 3 (three) purposes: 1) to provide compensation for the loss of biodiversity, 2) to pay the cost of forest management, and 3) any type of PNBP charged or collected should provide incentives for activities related to the public interest (Transparency International, 2010). However, it is different in practice. According to some views, economic rent formula of timber extraction does not compensate the loss of biodiversity or ecological system changes due to timber extraction, it does not even consider ecological aspects. Instead reclaiming the forest, obligation on reclaiming logged-over land resulting from Forest Concession Rights (HPH) is still charged back to investor, while inverstor has already paid for Reforestation Funds (DR).

3.1.3. Timber distribution chain

Timber distribution chain is related with policies and rules which are applied in the operation of timber concession up to the sale of timber. How area of IUPHHK is managed? In forest concession in Indonesia, there are at least 3 (three) types of silviculture system popular among foresters, they are:

- 1. Indonesian System of Selective Cutting and Planting (TPTI) is generally applied on IUPHHK-HA¹⁹. According to TPTI, logged trees are limited to a certain diameter nd only around five to eight trees per hectare (Suparna, 2012). That way is obliged to leave the the core tree and trees with diameter below the limit of cutting. On that basis, through the mechanism of nature and supported by several specific silvicultural measures and treatments, logged-over area is predicted to recover. However, lack of control and systems against TPTI implementation is causing the system to be mocked by many with a term like "System of Selective Cutting and Planting Insha Allah (if God willing)".
- 2. System of Selective Cutting and Line Planting (TPTJ); legal basis of TPTJ is Decree of Minister of Forestry Number 625 of 1998 on System of Selective Cutting and Line Planting. Basic consideration for the implementation of TPTJ system is to improve order and facilitate monitoring on the implementation of forest regeneration obligation by IUPHHK permit holder (Soekotjo, 2009).
- 3. Clear Cutting with Artificial Regeneration (THPB), THPB is generally applied on IUPHHK-HT. THPB is more emphasizing on regeneration of timber estate which is required to do by IUPHHK-HT permit holder (Soekotjo, 2009). This is due to the assumption that timber estate is stand on the same age as the simplest form of stand; therefore THPB system is easy to implement, where in practice it can be very complicated to be applied.

Having established silvicultural systems, the next stage in the chain of timber distribution is timber logging, timber transportation or distribution, timber processing (downstream), and timber sale. In relation to timber sale, recent policy in forestry sector has banned export or sale of logs out of the country.²⁰ This is done in good faith to meet timber demands in domestic timber industries.

¹⁹ See Decree of Minister of Forestry Number 485 of 1989 on Indonesian System of Selective Cutting and Planting.

²⁰ Joint Decision of Minister of Forestry No. 1132/Kpts-II/2001 and Minister of Trade and Industry No. 292/MPP/ Kep/10/2001, and Government Regulation No. 34 Tahun 2002 on Forest Management and Forest Management Planning, Forest Utilization and Use of Forest Area, Article 76.

In reality, many times, interaction between the three chains cannot run in line. Weak enforcement of regulations in one aspect will give a profound impact on other aspects, not to mention the high transaction costs on the three chains due to involvement of many actors on one side and interests of some officials on the other side. Investors often consider "informal" transaction costs as common, as long as the process runs smoothly. The discrepancy between policies and regulations and dynamics in the field has created an environment or condition that prevents Sustainable Forest Management (SFM), including maximising revenue in forestry sector (Transparency International, 2010).

3.2. Development of IUPHHK in Indonesia

Throughout three decades of the New Order government era and 10 (ten) years of the reform era, forestry development still rely on the increased production of Timber Forest Products as an effort to collect revenue. Based on Ministry of Forestry data (2010), production forest as forest area with principal function of producing forest products is covered in area of 82.4 million ha. The width is almost equivalent to 60% of the total forest area in Indonesia. Based on the development of data up to June 2010, from that total width of production forest, about 35 million hectares have been utilized in the form of Business Permit to Utilize Timber Forest Product (IUPHHK). This means there are approximately 35 million ha or 43% of the production forest area that has been utilized.

Table 3
Spread of IUPPHK width

No	IUPHHK	Width (Ha)	Total Unit	Note
1	Natural Forest	25,041,992	304 unit	Spread in 21 Provinces outside Java island
2	Industrial Timber Plantation	9,356,532.36	236 unit	Definitive Decree and Interim Decree
3	Non-Timber	21,620	1 unit	in Riau Province
4	Community Plantation Forest	555,657.73		Spread in 23 provinces

Source: Directorate General of Forestry Production Development (2010).

According to Table 3, the widest spread of IUPHHK in production forest is on Business Permit to Utilize Timber Forest Product - Natural Forests (IUPHHK-HA) at 25 juta Ha with 304 unit of Forest Concession Right (HPH). This shows that utilization of Timber Forest Products from natural forest still becomes the main source of revenue from forestry sector The high number of IUPHHK-HA supposedly improve PNBP in the forms of Reforestation Funds (DR) and Forest Resource Rent Provision (PSDH), and not shutting the concession of IUPHHK-HA permit holder.

3.2.1. Progress trend of IUPHHK-HA and IUPHHK-HT developments

During 2000-2009, progress of amount and area of IUPHHK-HA (HPH), IUPHHK-HT (HTI and HTR) is presented in Table 4.

Table 4
Progress of HPH/IUPHHK-HA development in the last 10 years

No	Year	Amount/Unit	Area (Million Ha)
1	2000	362	39.16
2	2001	351	36.42
3	2002	270	28.08
4	2003	267	27.80
5	2004	287	27.82
6	2005	285	27.72
7	2006	322	28.78
8	2007	324	28.27
9	2008	308	26.16
10	2009	306	25.64

Source: Directorate General of Forestry Production Development (2010), unpublished.

Progress trend of IUPHHK-Natural Forest in the last 10 years has experienced fluctuation, both in amount and area, as presented in Table 4. This is caused by some numbers of permits being revoked and canceled or during certain year there were also permits being renewed with changing on area and there were also new permits being issued. Meanwhile, progress trend of IUPHHK-Timber Estate has experienced the same fluctuation. Progress trend of IUPHHK-Timber Estate can be seen in following Table 5.

Tabel 5
Progress of IUPHHK-Timber Estate development in the last 10 years

No	Year	Amount/Unit	Area (Million Ha)
1	2000	98	4.44
2	2001	100	4.52
3	2002	103	4.55
4	2003	105	4.63
5	2004	114	5.80
6	2005	113	5.73
7	2006	130	6.19
8	2007	247	9.88
9	2008	227	10.03
10	2009	230	9.21

Source: Directorate General of Forestry Production Development (2010)

Observing the trend of IUPHHK-HA and IUPHHK-HT developments above, utilization of Timber Forest Products in the natural forest is still the priority sector for HPH concessionaires. Utilization of timber in the natural forest is allowing HPH concessionaires to cut logs directly and use or sell them without the need to plant prior to cutting/logging. In contrast, utilization of timber in timber estate requires HPH concessionaires to plant and perform various silvicultural measures prior to harvesting or logging.

4

Economic rent of extraction of timber forest resources

According to the Forestry Statistics (2004), total state revenue from various forestry fees/ charges in the period of 1993-2003 has reached U.S. \$ 4.606 million, while log production has reached 203 million m3. Meanwhile, the average economic rents successfully logs collected by the government is \$ 23.9/m3. The government also obtained additional funding from the Land and Building Tax (PBB), value added tax and income tax from forest utilization which amount has reached an average of U.S. \$ 0.36/m3; although imposition of Land and Building Tax (PBB) is still debatable until now. HPH concessionaires argue that they have no right on the land (forest are), unlike Land Use Permit (HGU) holders who have rights on land. Thus, HPH concessionaires should not be subjected to Land and Building Tax (PBB).

Moreover, HPH concessionaires are also subjected to various retributions by local government. These practices of retribution by local government have been prohibited²¹. but still very much applies in practice due to collusion between local government and companies.

The amount of charges has reached U.S. \$ 1.07/m3 in 2004. The amount of retribution charged by local government on log production varies between Rp 1,000/m3 (PT Musi Hutan Persada in South Sumatra) to an average of Rp 5,520/m3 (PT Tanjung Redeb Hutani in East Kalimantan), as stated by Handadhari et.al. (2010). Therefore, in 2004 the total rent of Timber Forest Products which may be collected by the government is expected to reach U.S. \$ 25.3/m3. Based on above description, in addition to PNBP, forestry investors are also subjected to various charges, either in the form of taxes, fees, and other charges in quite large amount. These types of charges are presented as follows:

Table 6
Types of Charges for Business Actors in Forestry Sector

No	Types of charges	Central	Local	Community
1	Taxes			
	Land and Building Tax	X	Χ	
	Value Added Tax	X		
	Income Tax	X		
	Motor Vehicle Tax		X	
	Transfer of Motor Vehicle Title		X	
	Fee		X	
	Tax for utilizing surface water		X	
	Advertisement Tax		X	
	Street Lighting Tax			

²¹ See Circular Letter of Minister of Interior Number 188 of 2010 on Structuring Regional Regulations on Regional Tax and Retribution.

2	Non-Tax State Revenue			
_	IIUPH	X		
	PSDH	X		
	DR	X		
	Substitution of Stands Value			
	Substitution of Stands value	X		
3	Retributions			
	Distribution of Forest Products		X	
	Timber Administration Services		X	
	Timber Hoarding Zone		X	
	Ownership Permit of Forestry			
	Equipment and Machinery		X	
	Chainsaw Ownership and Utilization			
	Permit		×	
4	Others			
	Compulsory contribution of Regional			
	Development		X	
	Third Party's contribution		X	
	Compensation for Indigenous People			
	within and around the Forest			X
	Portal Opening, Fee for causing dust			
	on the road, etc.			X

Source: Faculty of Forestry of IPB (2003) in Nurrochmat et.al. (2012)

Note: The total of forestry charges accounts for about 34.5% of the total costs and tends to increase from year to year with an average increase rate of 44% per year.

To create conducive climate for investment in the forestry sector, there are at least two important things that can be taken. Firstly, provision of fiscal incentives by reducing types of charges in force. Secondly, provision of business certainty; considering many issues of investment occurred in the forestry sector, particularly on land rights and spatial issues.

4.1.PNBP derived from IUPHHK-HA and IUPHHK-HT

Collection of economic rent in the form of PNBP for holders of Business Permit to Utilize Timber Forest Product – Timber Estate (IUPHHK-HT) includes IIUPH and PSDH. Collection of IIUPH is only charged once at the time permit is made or renewed. Collection of PSDH is charged according to Forest Production Report (LHP) made yearly by the company. Furthermore, for natural forest, collection of economic rent on concession of IUPHHK-HA is charged with IIUPH, PSDH, and Reforestation Funds (DR). Reforestation Funds (DR) are charged according to Forest Production Report (LHP) on the utilization of timber in natural forest or clearing of natural forest for IUPHHK activities. Tariffs of IIUPH, PSDH and DR are set according to the applicable rules and regulations. More information about the tariffs will be discussed in the next section of this paper.

Visually, trend of revenue from PSDH and DR of IUPHHK is in accordance to the trend of log production in the past two decades which presented in Figure 2.

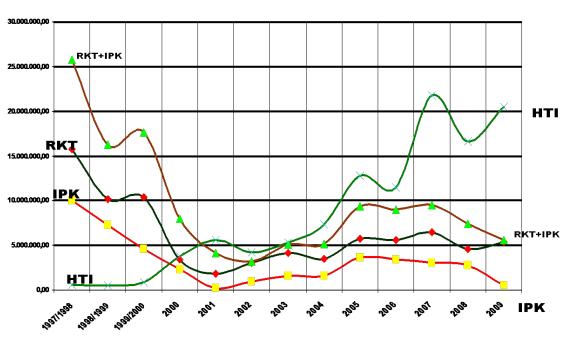


Figure 2
Trend of Log Production during 1997-2009

Source: Financial Bureau of Ministry of Forestry (2010)

Based on the figure, timber production from timber estate increased while timber production from natural forest decreased. In result collection of economic rent from PSDH tends to increase while collection of economic rent from DR tends to decrease. According to Financial Bureau of of Ministry of Forestry (2010), this happens because timber production trend is changing from natural forest logging (subjected to DR and PSDH) to timber estate (subjected to PSDH, but not DR). Effects of forestry policy are another explanation. Following-up Letter of Understanding between the Government of Indonesia and the Government of Norway, as part of cooperation to reduce carbon emissions from deforestation and forest degradation, started from 2011, the Indonesian government carried moratorium on granting concessions for natural forests and peatland (Murdiyarso *et. al*, 2011). The moratorium contributed to the decrease of Timber Utilization Permit (IPK) by 35 thousand hectares in Riau, West Kalimantan, Central Kalimantan and Papua Province. Observing from this condition, it looks like that the future of Indonesian forests is in timber estate.

According to the calculation of Financial Bureau of of Ministry of Forestry (2012), post-moratorium PSDH has down from 1.123 trillion to 0.966 trillion. There is a difference of 0.157 trillion. Meanwhile, DR also down from 1.631 trillion to 1.315 trillion, so there is a difference of 0.316 trillion. Surprisingly, this decrease occurred even though domestic timber supply and deforestation continues to increase. This kind of background and trend underlie some views which consider that future state revenue in forestry sector will be derived from timber estate.

Collection and determination of economic rent of extraction of timber forest resources

All forest utilization activities are subjected to collection of economic rent in the form of Non-Tax State Revenue (PNBP). This section only focuses on collection of economic rent for the utilization of Timber Forest Products in production forest in the form of PNBP. Descriptions on the determination of economic rent of timber forest products are based on various literatures and regulation on collection of economic rent applicable in the forestry sector. Description will be begun from flow of imposition and payment of economic rent (IIUPH, PSDH and DR), then formula to determine economic rent and distribution, as well as arisen problems.

5.1. Flow of imposition and payment of economic rent of IUPHHK

Submission of application on Business Permit to Utilize Timber Forest Products in natural forest and timber estate within production forest area is based on Regulation of Minister of Forestry No. 24/Menhut-II/2005 on Completion Procedures on Business Permit to Utilize Timber Forest Product. In this regulation, requirements to apply for IUPHHK are as follows: (1) preparing a feasibility study, (2) preparing AMDAL, and (3) submitting approval of local official. The processes are as follow: after the applicant received an approval from local official, the local official will then filed it to the Ministry of Forestry through the Directorate General of Forestry Production Development, Directorate General of Forestry, the AMDAL will be corrected by Local Bapedal. Once the AMDAL is approved, the Directorate General of Forestry Production Development will then filed a draft of Ministerial Decree through the Secretariat General. From Secretariat General it will then reach Ministry of Forestry to be signed.

After a Decree from Ministry of Forestry is issued, te applicant is obliged to pay some fees/charges (IIUPH, PSDH, and DR) as economic rent charges on forest utilization. Flow of imposition and payment of IIUPH, PSDH, and DR on forest utilization is presented in Figure 3.

Figure 3 Flow of Imposition and Payment of IIUPH, PSDH, and DR Proof of Deposit ULHP of State LHP approved MoFor Paying **Next Period** Official Treasury by LHP App-Treasurer Party (SPP IIUPH, roval Officer PSDH.DR) District/City UPT of Dir Provincial Office Gen of BPK Office Minister of Sec Gen of Forestry MoFor Dir.Gen of BUK Source: Finance Bureau of MoFor (2010)

To understand the flow abovementioned, more technical descriptions on the imposition and payment of IIUPH, PSDH, and DR are as follow.

- Paying Party shall submit Proposal on Forest Production Report (ULHP) to LHP Approval Officer, and within 6 working days. Then LHP Approval Officer (P2LHP) will approve the ULHP.
- Paying Party shall submit copy of Forest Production Report (LHP) within 5 (five) working days since approval to Collecting Official to be issued with Order Letter for the Payment (SPP)-PSDH/ DR and IIUPH.
- Within 2 (two) working days, PSDH/DR and IIUPH Collecting Official will issue SPP for PSDH/DR and IIUPH. These letters will then carbon copied to:
 - a. Copy number one for the Permit Holder as Paying Party
 - b. Copy number two for Head of District/City Forestry Office
 - c. Copy number three for Head of Provincial Forestry Office
 - d. Copy number four for Head of UPT of Directorate General of BPK
 - e. Copy number five for Collecting Official's archives
- Payment on Order Letter for the Payment (SPP) of indebted PSDH/DR and IIUPH shall be conducted within 6 working days since the issuance of SPP. Payment of PSDH/DR and IIUPH shall be addressed to the account of Treasurer of Forestry Ministry (requires to use 15 digits of deposit reference)which then paid to the State Treasury.
- Within the following 5 (five) months Paying Party shall submit Forest Dues Payment Report (LPIK)
 to the Head of District/City Forestry Office, and carbon copied to Head of Provincial Forestry
 Office and the Head of Technical Unit (UPT) of Directorate General of BPK.
- Head of District/City Forestry Office submits Forest Dues Payment Realization Report (LRPIK)
 every month to Head of Provincial Forestry Office and carbon copied to Secretary General
 of Ministry of Forestry, Directorate General of BPK and Head of Technical Unit of Directorate
 General of BPK before date 10 of the next month.
- Head of Provincial Forestry Office submits Combined Report of Forest Dues Payment Realization (LGRPIK) every month to Directorate General of BPK and carbon copied to Secretary General of Ministry of Forestry before date 10 of the next month. LGRPIK then shall be reported to Minister of Forestry.

5.2 Formula to determine economic rent of IUPHHK

As explained above, collection of economic rent for utilization business of Timber Forest Products in the form of PNBP includes Forest Utilization Business Permit Fee (IIUPH), Forest Resource Rent Provision (PSDH), and Reforestation Funds (DR). Business Permit to Utilize Timber Forest Product - Natural Forests (IUPHHK-HA) is subjected to IIUPH, PSDH, and DR charges while Business Permit to Utilize Timber Forest Product – Timber Forest (IUPHHK-HT) only subjected to IIUPH and PSDH. This section also touched on collection of economic rent for utilization business of Non-Timber Forest Products (IUPHHBK) for Natural Forest and Timber Estate which only subjected to IIUPH and PSDH. Although non-timber forest products are not covered in depth in this paper, at least we get some idea of economic rent for utilization business of non-Timber Forest Products. After all, non-timber forest products will be potential source of revenue in the forestry sector in the future. As follow, a simple formula to calculate economic rent of forest utilization which consists of IIUPH, PSDH, and DR applicable in the forestry sector, is presented.

5.2.1. Forest Utilization Business Permit Fee

The amount of IIUPH imposition is regulated in Forestry Minister Regulation Number P.12/Menhut-II/2010 on Procedures for the Imposing, Dunning and Payment of Contribution of Production Forest Utilization Business Permit Fee/Concession Rights on Industrial Timber Plantation. In short, the amount of IIUPH imposition is calculated as follow:

- IIUPH on Industrial Timber Plantation and Community Plantation Forest IIUPH = Area of Permit x IIUPH Tariff
- IIUPH on Natural Forest
 IIUPH = Area of Permit x IIUPH Tariff x Duration of Utilization

According to Forestry and Estate Minister Decision Number 700/Kpts-II/99 on Restipulation of Amount of Contribution of Forest Utilization Right all over Indonesia, IIUPH tariff is determined based on permit area or location. Details of tariffs are as follow:

- new HPH and additional area(extension)
 - 1) for Sumatera and Sulawesi region is Rp. 37,500 (Thirty Seven Thousand and Five Hundred Rupiah);
 - 2) for Kalimantan and Maluku region is Rp. 50,000 (Fifty Thousand Rupiah);
 - 3) for Irian Jaya, NTB and NTT region is Rp. 20,000 (Twenty Thousand Rupiah).
- renewed HPH and ex HPH area that has been exploited before
 - 1) for Sumatera and Sulawesi region is Rp. 22,500 (Twenty Two Thousand and Five Hundred Rupiah);
 - 2) for Kalimantan and Maluku region is Rp. 30,000 (Thirty Thousand Rupiah);
 - 3) for Irian Jaya, NTB and NTT region is Rp. 15,000 (Fifty Thousand Rupiah).

Meanwhile, IIUPH tariff especially for utilization of bamboo and rattan for period of utilization is Rp. 2,600 (Two Thousand and Six Hundred Rupiah). This tariff applies for all locations.

5.2.2. Forest Resource Rent Provision (PSDH)

In accordance to Decree of Ministry of Forestry Number 124/Kpts-II/2003 on Technical Guidance for Imposition, Collecting, payment, remittances for PSDH; PSDH is charges imposed to substitute value of resource collected from the state forest. Formula for the imposition of PSDH for utilization of timber and non-timber forest products is as follow:

a. PSDH on timber forest products:

Volume of Timber Forest Products on Forest Production Report (LHP) x PSDH tariff

b. PSDH on non-timber forest products:

Volume of Non-Timber Forest Products on Forest Production Report proposal x PSDH tariff

According to Government Regulation Number 59 of 1998 on Tariff on Non-Tax State Revenue applicable in Department of Forestry and Estate, PSDH Tariff is determined as follow:

- PSDH Tariff for Timber = 10% of timber standard price (by volume)
- PSDH Tariff for Non-Timber = 6% of non-timber standard price (by volume, stem, ton, kg, etc.)

Timber standard price as the basis of PSDH tariff refers to Regulation of Trade Minister Number 22/M-DAG/PER/4/2012. Table 7 lists timber standard price according to the regulation:

Table 7
Determination of Standard Price for Calculation of PSDH for Timber and Non-Timber Forest Products

Standard			
Description of Goods	Standard Price	Unit	
Description of doods	(Rp)	Onit	
WOOD	(ICP)		
ROUND WOOD			
Meranti Wood and Mixed Forest			
Wood originating from Area I (Sumatera, Kalimantan, Sulawesi,			
and Maluku)			
Meranti Group	600,000	M^3	
Mixed Forest Group	360,000	M^3	
Wood originating from Area II (Irian Jaya, Nusa Tenggara, dan			
Bali)			
Meranti Group	504,000	M^3	
Mixed Forest Group	270,000	M^3	
Merbau	1,500,000	M^3	
Other than Maranti and Miyed Earest Crause			
Other than Meranti and Mixed Forest Groups Indah wood without diameter limitation (including Sonokeling,	1,086,000	M^3	
Ramin, and Ulin)	1,000,000	1*1-	
Torem wood (Area I)	432,000	M^3	
Torem wood (Area II)	318,000	M ³	
Totelli wood (Aled II)	310,000	1.1	
Other Group:			
Wood originating from Area I (Mentoas Wood, Kisereh,	600,000	M^3	
Perupuk, Giam, Belangeran, and Kulim)		_	
Wood originating from Area II (Mentoas Wood, Kisereh,	497,000	M^3	
Perupuk, Giam, Belangeran, and Kulim)			
SMALL ROUND WOOD			
Not applicable for Type I.b and I.c Diameter < 30 cm	245,000	M^3	
Pile	12,000	Stem	
Thermal pole	38,000	Stem	
Rail Dock	152,000	M ³	
Charcoal:	102,000		
Mangrove + Meranti	384,000	Ton	
Mixed Forest	181,000	Ton	
Firewood	18,000	SM	
Jati Pole	335,000	Ton	
OTHER SORTED WOOD	•		
Yellow Wood	593,000	Ton	
Ebony Wood	7,200,000	Ton	
Jati Wood			
Diameter 30 cm up	2,500,000	M^3	
Diameter 20-29 cm	1,500,000	M^3	
Diameter < 19 cm	1,000,000	M^3	
Mangrove Wood	180,000	Ton	
Pine Wood	150,000	Ton	
Cendana Wood			
Terrace part of cendana wood in all forms	8,400,000	Ton	
Cambium part of cendana wood in all forms	840,000	Ton	

Description of Goods	Standard Price (Rp)	Unit
WOOD ORIGINATING FROM PLANTS IN STATE FOREST AREA		
Pine	60,000	Ton
Acacia	40,000	Ton
Balsa	30,000	Ton
Eucalyptus	40,000	Ton
Gmelina	40,000	Ton
Rubber	60,000	Ton
Sengon	30,000	Ton
WOOD OF PERUM PERHUTANI & YOGYAKARTA SPECIAL AREA Jati (Teak) Round Wood		
Diameter 30 cm up	2,500,000	M ³
Diameter 20-29 cm	1,500,000	M ³
Diameter < 19 cm	1,000,000	M ³
Sonokeling Round Wood	1,000,000	I¥I.
Diameter 30 cm up	900,000	M^3
Diameter 20-29 cm	600,000	M ³
Diameter < 19 cm	300,000	M ³
Rimba Indah Round Wood (Sonobrit, Mahoni)	300,000	111
Diameter 30 cm up	460,000	M^3
Diameter 20-29 cm	160,000	M ³
Diameter < 19 cm	100,000	M ³
Other Round Wood (Pine, Dammar, Sengon, Balsa, Eucalyptus, Jabon, <i>Acacia mangium</i> , Rubber, and <i>Gmelina arborea</i>)	100,000	
Diameter 30 cm up	160,000	M^3
Diameter 20-29 cm	140,000	M^3
Diameter < 19 cm	100,000	M^3
Mixed Forest Round Wood	•	
Diameter 30 cm up	140,000	M^3
Diameter 20-29 cm	100,000	M^3
Diameter < 19 cm	70,000	M^3
Rasamala	160,000	M^3

Description of Goods	Standard Price (Rp)	Unit
NON-WOOD		
RATTAN Rattan Shrub Group Red Rattan Shrub White Rattan Shrub Rattan Candle Rattan Lacak Rattan Datuk	1,400,000 1,400,000 1,400,000 1,400,000 1,400,000	Ton Ton Ton Ton Ton
Rattan Sega Group Rattan Sega (Taman) Rattan Water Sega (Ronti) Rattan Sega Badak Rattan Irit/Jahab	500,000 500,000 500,000 500,000	Ton Ton Ton Ton
Rattan Lambang Group Rattan Lambang Rattan Anduru Rattan Lita Rattan Sabutan Rattan Ampar Tikar Rattan Jermasin	715,000 715,000 715,000 715,000 715.000 715,000	Ton Ton Ton Ton Ton Ton
Rattan Tohiti Group (Tohiti and Telangi) length max 4 m Diameter up to 4 mm Diameter 25 mm up to 30 mm	900,000 1,150,000	Ton Ton
Kelompok Rattan Manau - Length Max 4 m Rattan Manau Rattan Manau Tikus Rattan Riang Rattan Manau Padi	2,350 2,350 2,350 2,350	Stem Stem Stem Stem
Rattan Semambu Group - Length max 4 m Rattan Semambu Rattan Tabu-tabu Rattan Wilatung Rattan Nawi Rattan Dahan	700 1,700 2,350 2,350 2,350	Stem Stem Stem Stem Stem
Other Rattan Types Groups (not mentioned above) SAP IN FOREST AREA Jelutung Sap Forest Rubber Sap HTI Rubber Sap Jernang Sap Pine Sap	500,000 935,000 430,000 325,000 230,000 238,000	Ton Ton Ton Ton Ton Ton Ton

Description of Goods	Standard Price (Rp)	Unit
DAMMAR AND OTHER EXTRACTIVES		_
Mata Kucing Dammar	504,200	Ton
Kopal Dammar	384,200	Ton
Pilau Dammar	256,700	Ton
Lac Seed	1,070,000	Ton
Incense	150,000	Ton
WOOD SKIN		
Acacia	174,200	Ton
Lawang Wood	36,700	Ton
Masoi	568,300	Ton
Soga	12,000	Ton
Medang Keladi	12,000	Ton
FOREST BAMBOO		
Apus Bamboo	1,000	Stem
Petung Bamboo	1,850	Stem
Milah Bamboo	1,000	Stem
OTHERS		
Round Nibung	3,700	Stem
Gubal Gaharu	333,300	Kg
Kemendangan	25,000	Kg
Kayu Putih Leaf	55,000	Ton
Oil Palm Trunk	55,000	Ton
BAMBOO PRODUCED BY PERUM PERHUTANI & YOGYAKARTA SPECIAL AREA		
Petung/Apus/Milah Bamboo (Conversion 1 SMB = 360 trunks	5,500	SMB

Source: Regulation of Trade Minister Number 22/M-DAG/PER/4/2012

5.2.3. Reforestation Funds (DR)

According to Decree of Minister of Forestry Number 128/Kpts-II/2003 on Technical Guidance Imposition, Collecting, Payment, Remittances for Reforestation Funds, Reforestation Funds is the funding used for reforestation, forest rehabilitation and its supporting activities collected from holders of forest concession rights who have permits to utilize timber forest products in natural forests (within Production Forest). Therefore by definition, Reforestation Funds (DR) is only imposed on:

- 1. Holders of forest concession rights who have permits to utilize natural forest
- 2. Holders of land clearing permits in natural forest, and
- 3. Holders of other authorized permits in natural forest

How much is DR? Imposition of DR is regulated in Decree of Minister of Forestry Number 128/Kpts-II/2003 on Technical Guidance Imposition, Collecting, Payment, Remittances for Reforestation Funds, which calculated based on:

- a) Volume of logged trees according to annual Cruising Report (LHC) x DR tariff (for permit holder with Indonesian System of Selective Cutting and Planting/TPTI).
- b) Volume of Timber Forest Products according to Production Report (LHP) x DR tariff (for permit holder with non-TPTI system)

How about DR Tariff? Referring to Government Regulaion Number 92 of 1999 on Tariff of Type of Non-tax State Revenues Applicable for the Ministry of Forestry and Estate, DR tariffs are shown on the following Table 8.

Table 8
Reforestation Funds Tariff

	Type of non-Tax Revenue	Unit	Tariff
Rev	enue derived from Reforestation Fund		
A.	For Kalimantan and Maluku area		
	1. Meranti Group	m^3	US \$ 1
	2. Mixed Forest Group	m ³	US \$ 1
В.	For Sumatera and Sulawesi Area		
	1. Meranti Group	m³	US \$ 1
	2. Mixed Forest Group	m³	US \$
C.	For Irian Jaya and Nusa Tenggara area		
	1. Meranti Group	m³	US \$
	2. Mixed Forest Group	m³	US \$ 10.50
D.	All Indonesian regions		
	1. Ebony Group	Ton	US \$ 2
	2. Natural Jati Group	m³	US \$
	3. Indah Wood Group	m³	US \$
	4. Cendana Wood Group	Ton	US \$
	5. Flake/particle raw material	Ton	US \$
	6. Logging waste	m³	US \$
	and other special sorted		
E.	Flake/particle raw material utilized	m³	US\$
	in provinces that not yet have pulp		
	and wood fiber mills		
F.	Flake/particle raw material for	m³	US \$
	research carried by PT. INHUTANI		
	I, II, III, IV and V in cooperation with		
	medium enterprise producing flake/		
	particle wood by using portable machine.		
G.	Round wood designated for victims	m³	US \$
	of natural disaster and other social		
	assistances.		

Source: Government Regulation No. 92 of 1999

5.3. Allocation of IUPHHK economic rent

Collection of economic rent from forest utilization, especially on timber forest products, in the form of Non-Tax State Revenue (PNBP), consists of IIUPH, PSDH, and DR which then will be distributed or allocated to the producing areas. This allocation scheme takes form in Revenue Sharing Fund (DBH) or in full 'Revenue Sharing Fund of Forest Resources with local government'²². There are 3 (three) principles applicable to DBH in Indonesia (Mumbunan, 2012); they are:

- 1. derivation principle, means DBH is distributed to producing areas
- 2. realization principle, means DBH distributed to local government is based on realization of PNBP
- 3. equal share principle, means DBH is also distributed to non-producing areas in equal proportion

Revenue Sharing scheme through DBH of Forest Resource for every PNBP shared is presented in following Table 9:

Table 9
Balance of Revenue Sharing Fund with Local Government

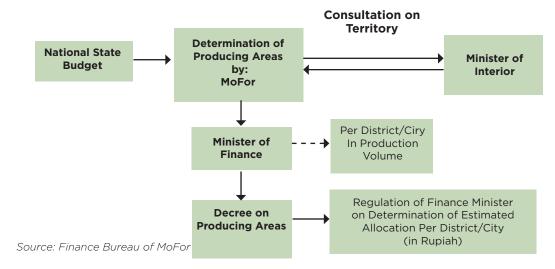
No	Sources	Allocation of DBH			
	ofRevenue Sharing Fund	Central (%)	Province (%)	Producing District/City (%)	Other District/ City within the related Province (%)
1	Dana Forest Utilization Business Permit Fee (IIUPH)	20	16	64	-
2	Dana Forest Resource Rent Provision (PSDH)	20	16	32	32
3	Reforestation Funds (DR)	60	-	40	-

Source: Government Regulation No. 55 of 2005

Balancing, determination and distribution of DBH allocation on Forest Resource has

its own mechanism. Visually, based on Government Regulation Number 55 of 2005, this mechanism is presented in Figure 4 below.

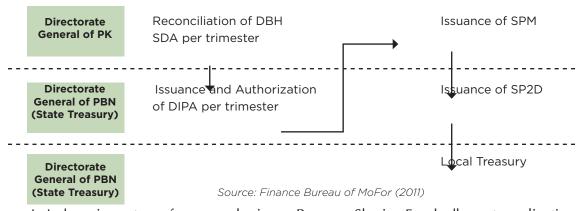
Figure 4
Mechanism to determine DBH allocation of Forest Resources



In the early stage of determining DBH allocation on Forest Resources, Decrees of Forestry Ministry and Interior Ministry on determination of producing areas become the basis for determining DBH allocation on Forest Resources. After this stage, the Ministry of Finance as the technical ministry in charge of distributing DBH allocation on Forest Resources to Local Government will calculate the amount DBH allocation on Forest Resources that should be received by the local government. The calculation is based on the percentage defined earlier. Result of calculation will be set as Refulation of Finance Minister.

At later stage, the Directorate General of Fiscal Balance of Ministry of Finance as the technical ministry in charge in implementing the reconciliation of DBH on Forest Resources between central agencies and producing areas and transferring DBH allocation on Forest Resources to the local treasury account. Mechanism applied at this stage can be seen from a figure below.

Figure 5
Mechanism of Distributing DBH allocation on Forest Resources



In Indonesia, system of revenue sharing or Revenue Sharing Fund adheres to realization

principle, as described previously. Manifestation of realization principle is distribution based on realization of revenue in a certain time period (ex post) combined with the estimated revenue value (ex ante). DBH allocation on Forest Resources conducted on quarterly basis. General setting for every trimester is as follow: (a) Trimester I and II is distributed with 20% of Regulation of Finance Minister (PMK) on Estimated Allocation; (b) Trimester III and IV is distributed based on actual Forest Resources revenues in the current budget year by calculating distribution on the first and second trimesters. DBH allocation on Forest Resources is conducted by transfers from State Treasury to Local Treasury.

5.4. Distribution of IUPHHK economic rent

What is next after funding has reached local government; to where it will be distributed? Will there be any fund allocated for reforestation and conservation? These kinds of questions will arised from various groups, especially the public. This section will describe the use or distribution of economic rent of extraction of forest resources in Indonesia.

The use of DBH allocation on Forest Resources by local government is based on the nature of transfer fund itself; either for general use (block grant) or special use (specific grant). Below are some explanations on the transfer fund (Ministry of Finance, 2012):

- 1) General transfer fund (block grant) is a transfer of fund used in order to fund implementation of government affairs under the authority of provincial and district/city; consisting of obligatory and optional affairs based on legislation. Distribution of DBH allocation on Forest Resources that are general in nature (block grant) is carried out through the state treasury to the local treasury. DBH allocation on Forest Resources will be entered to the total revenues of Regional State Budget (APBD) which derived from the balance fund. DBH allocation on Forest Resources in general nature (block grant) includes PSDH and IIUPH.
- 2) Specific transfer fund that are specific in nature (specific grant) is transfer of fund used for predetermined specific purposed. DBH allocation on Forest Resources that is specific in nature (specific grants) includes: Reforestation Fund. DBH allocation on Reforestation Resources originally referred as the Specific Purpose Grant for Reforestation Fund (DAK DR), then in 2006 with a changing of mechanism DAK DR is referred as DBH SDA DR Based on above description, only DR that is definitely going back to the foresr for rehabilitation and conservation. While the use of IIUPH and PSDH is up to the local governments how they would accommodate it. Oddly, local governments are 'in fear' in accommodating DR. They dodged that responsibility on rehabilitation, as it is far too difficult. Meanwhile they consider that DR is part of DBH, not DAK. Here below are some comparisons of DR as DAK (in the old mechanism) and DR as DBH (in the new mechanism).

Table 10
Implementation of DAK DR and DBH SDA DR in Land Forest Rehabilitation

No	Old Mechanism	New Mechanism/Refinement Result
1	DAK DR is directly transferred to the province	DBH SDA DR is directly transferred to producing district/city.
2	To use DAK DR 40 %, Based on definitive plan.	Based on RTT/technical plan compliled T-1.
3	Annual budget system	Implemented with multi-years system
4	The proportion on the use of fund inside and outside forest area is not regulated.	The proportion on the use of fund is 60% in forest area and 40% outside forest area.
5	Not allowed in areas encumbered with rights/HPH.	Possible in areas encumbered with rights /HPH.
6	Availibility of Co-Funding, but not all local goverments allocating it.	Co-Funding derived from Regional State Funding is still required; only need affirmation from Minister of Forestry in the form of instruction/circular letter
7	There is activities of tree planting along left-right sides of the road	activities of tree planting along left- right sides of the road is omitted
8	Reforestation is implemented in self- managed manner	Reforestation is implemented by third parties
9	Standard price is equal to National Movement of Forest and Land Rehabilitation (Gerhan/GN- RHL)	Standard price is based on estimation that is suitable with condition of each local area.

Source: Ministry of Forestry (2007)

In the use of DBH SDA on DR, local governments have restrictions in accordance with applicable regulations; that DBH SDA on DR is only used for forest and land rehabilitation activities in the area related. Its proportion is 40% of DBH SDA DR received by the local government, 60% is used for forest and land rehabilitation (RHL) activities within the forest area and 40% is used for RHL activities outside forest area. ²³ Moreover, rehabilitation activities in forest area can be done in protected forest, Forest Park Conservation Area (*Tahura*) managed by the Office of the District/City and production forests that are not encumbered with rights. While activities outside the forest area is specifically dedicated to the protection of water catchment areas, reservoirs, and lakes, springs, and watershed boundary.

²³ See Regulation of Minister of Forestry Number 14/Menhut-V/2008 on Technical Guidance on the Implementation of Forest and Land Rehabilitation DBH SDA DR

Economic Rent on forest utilization and state revenue

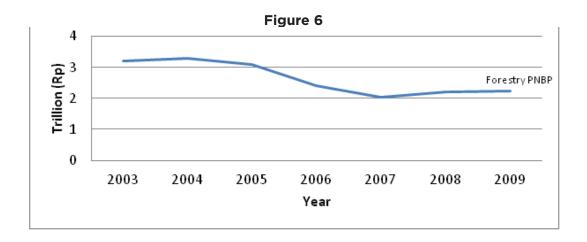
Forestry sector is one of major contributors to Indonesia's economy. There are many indicators; including provision of employment, tax state revenue, non-tax state revenue, and regional revenue. In 2003, forestry sector contributed IDR 3.35 trillion to the Non-Tax State Revenue (PNBP), and it has increased in the following year to IDR 3.42 trillion. But since 2006-2009 PNBP from the forestry sector has started to decline with value less than IDR 3 trillion per year (Table 11).

Table 11
Non Tax State Revenue (PNBP) of Forestry Sector 2006-2009

State Revenue	Year				
	2006	2007	2008	2009	
Reforestation Fund	1,731,937,574,706	1,368,198,554,446	1,643,048,314,592	1,368,085,110,839.54	
Return of Reforestation Fund				86.780.467.278	
Forest Resource Rent Provision	560,627,264,422	669,725,714,249	618,457,477,431	674,358,139,368	
Forest Concession Royalty	111,304,759,109	67,507,414,133	68,192,839,900	72,389,473,501	
Forest Security Fund		373,768,194			
Penalty on Forest Exploitation	165,890,493	1,957,560,694		418,686,800	
Wildlife/Natural Plant Transport	5,991,541,601	1,114,588,760			
Fee					
Entrance Fee to natural tourism	387,262,440	2,946,153,633		13,436,806,994	
area					
Revenue from fixed charges		56,250,000			
Other PNBP	18,891,058,639	3,361,632,666	15,993,886,306	258,736,659	
Total PNBP	2,429,305,351,410	2,115,241,636,775	2,345,692,518,229	2.383.098.194.368,54	

Source: Ministry of Forestry (2010)

Since 2006, PNBP Trend of forestry sector has constantly declined. The lowest value of PNBP occurred in 2007; in the value of IDR 2.1 trillion. Declining *trend* of PNBP in the forestry sector can be seen from following Figure 6.



Non Tax State Revenue of Forestry Sector 2003-2009

Source: Ministry of Forestry (2009)

A similar trend also occurred on the contribution of the forestry sector to the national economy. In 2003, the forestry sector contributed 1.09 percent to the Gross Domestic Product (GDP), and then declined to 1.05 percent in the next year. In 2008 contribution to GDP only reached 0.79 percent. Trend on the contribution of the forestry sector to the GDP can be seen in Figure 7 below.

1.4 1.2 Percentage (%) 1 0.80.60.40.2 0 2000 2001 2002 2003 2004 2005 2006 2007 2008 Contribution 1.18 1.16 1.14 1.09 1.05 0.98 0.9 0.84 0.79

Figure 7

Contribution of Forestry Sub-Sector to GDP in 2000-2008

Source: Ministry of Forestry (2009)

Trend of declining contribution in the forestry sector caused by declined production of timber in the natural forest; therefore, contributions in the form of Reforestation Funds (DR) and Forest Resource Rent Provision (PSDH) are relatively declined in the revenue components, as stated by Finance Bureau of Ministryof Forestry (2010). This trend occurred within the same time span when national timber production have increased dramatically within 4 years period, from 11.42 million m3 in 2003 to 31.49 million m3 in 2007 and again increased to 31.98 million m3 in 2008. This production is even more than timber production at the time timber export value broke its record in 1997 with only 29.5 million m3.

As part of the agricultural sector, in the period of 1995-2003, forestry sector only contributed for about 10.01% per annum to the GDP of Agriculture. The agricultural sector alone contributed for an average of 16.15% per annum to the formation of National GDP. Reviewing these data, it can be inferred that contribution from extractive forestry sector to the economy as a whole, which is represented in the national GDP, was relatively small.

One of factors that led to the relatively small contribution of forestry sector to the national GDP is the utilization of non-timber forest products and environmental services that is not yet optimal in practice. That means utilization of forest remains focused on timber forest products (timber based); which availability are getting more restricted. Declining output of processed wood industry in the result of limited supply of round wood raw material and

low investment are also triggered the decline of GDP in forest-based sector.

Despite the fact that contribution of the forestry sector to the national GDP has declining, the sector still has great potential and opportunity to improve in the future. Potential and opportunities for improvement should be supported by several factors, including:

- Forests are renewable resources; therefore, continuous utilization will enable sustainable business sector.
- Forest-based sectors are natural resources based sector so that commodities produced are purely local content.
- Most of the wood industry products are export-oriented and can not be substituted by synthetic materials.
- · Presence of supports of land availability and climate suitability.
- In terms of repositioning and revitalizing Indonesia's forestry sector, fiscal incentives through elimination of some types of charges are still possible to do.

Some issues on the imposition of economic rent of extraction of timber forest resources

What has been described above is a description based on theory and regulation regulating mechanism of determination and collection of economic rent of forest concession applicable in the forestry sector. In practice, it is not happened or it might not be happened. Many problems occurred both from government as collecting agent and from HPH concessionaires who often feel aggrieved due to many types of charges and irregularities on several mechanisms for determining rent, not to mention the scientific basis in each type of economic rent of extraction of timber forest resources. What are the problems that arised in the determination and collection of economic rent of forest utilization?

Firstly, collection policy is not based on adequate and comprehensive scientific studies. On one side, determination of economic rent of timber extraction does not consider internalization of social and ecological costs arising from concessions. Principles on ecology in tropical rain forest that has been learned since elementary school are not adhered. Tropical rainforest has a high level of biodiversity; each species plays a role in the dynamic community. Cutting down a single tree will damage the ecological system in the vicinity. If all these things were not adhered, it seems reasonable that natural disaster occurs, that forests are more damaged, that people are poorer. Therefore, appropriate level of charges/levies that adhere both company profitability and socio-economic dimension, are required.

Secondly is regarding narrow focus of the charges. Government efforts to increase state revenue from the forestry sector are only focusing on increasing the amount of charges and tariffs. Meanwhile, other activities that also affect the utilization of production forest, such as the number of business unit, work area, forest growth, efficient harvesting and policies on silvicultural systems, allowable cut, and wood waste are not or less considered by the

government.

Thirdly, there are some concept irregularities in determining charges for forest concession; for example, imposition of Land and Building Tax (PBB) on HPH concessionaires, where they have no right on the land; unlike Land Use Permit (HGU) holders who have rights on land. Therefore it is appropriate to impose Land and Building Tax (PBB) on HGU holders.

Fourthly is the government's weak control. There are still government officials both in central and local government who are collecting illegal retributions in the field, not to mention the very high transaction costs in each stage of timber utilization process. Those will certainly hamper the investment climate in forestry sector.

Fifthly, the charges imposed in the forestry sector are not re-used effectively for developing forest and forest communities. DR that should be used to reclaim/rehabilitate logged-over forest was used for the rehabilitation of forest in other regions. Meanwhile, concessionaires who already paid for DR are still required to rehabilitate the logged-over natural production forest. In fact, in the nineties, DR which previously referred as Reforestation Guarantee Fund (DJR) that has been paid were often not reimbursed in full by the government; after the company had rehabilitated the logged-over forest in the natural production forest area (Barr et al, 2010).

Reports from media and audit from the State Audit Board (BPK) are even more ironic. Some provinces that gain DR through Revenue Sharing Fund (DBH) were not using the funds for forest rehabilitation, but for other uses. Some provinces also unscrupulously use the DR by claiming creating forest rehabilitation projects where there is no realization on the projects (Barr et al, 2010).

Based on the backgrounds abovementioned, improvements on policies related to state revenue in the forestry sector would be required. Stakeholders seemed to turn a blind eye. Appropriate measures to increase state revenues in the forestry sector are by establishing conducive climate, the right policies, implementing meaningful incentives and disincentives and infrastructure improvements, which can promote business sustainability and an increase in production. These include the transparency of collection and management of economic rents from forests in Indonesia. Further explanation on the improvement of collection of economic rent of timber utilization will be discussed in the next section.

A little solution on the imposition of economic rent of extraction of timber forest resources

Reflecting on the various issues related to the collection of timber extraction rent, it is necessary to find a solution for the right imposition of rent. Right does not mean pleasing all parties, however right would be good for all parties. The little solution is taken from some views or opinions from several researchers. Although no one has considered ecological aspects in detail, at least this solution may pave the way for stakeholders in the forest sector to improve imposition of economic rent extraction timber forest resources in Indonesia.

Ahmad (1992) defined economic rent as remuneration for production factors above minimum amount needed to draw these factors into a particular economic activity. In competitive market structure, the minimum remuneration required to draw capital is the normal level of profit.

In the production of natural timber, the relevant size for economic rent is stumpage value, which is the market value of standing trees. In public tender system, stumpage value equal to the maximum value that will be paid by the holder of Forest Concession Rights (HPH) or permit holder of utilization of timber forest products to acquire rights to harvest trees in certain area that has been set. On another tender system, stumpage value of natural forest is the difference between price of natural wood in international market with all incurred production costs in producing and transporting wood to the port of export. Economic rent from natural resources is formed due to the scarcity and other various comparative costs which inherently contained in particular commodity reserves.

If normal profit assumed to be 20% of total production cost. The percentage of normal profit is estimated by consolidating percentage suggested by Brown (1999), which is 25% of production cost, and the percentage recommended by IPB (2003), which is 16% in the form of profit ratio; which is a comparison between profit; pre and post collection, therefore economic rent of log = selling price - (production cost + normal profit). This value is the potential value that may be obtained/collected by the government as the owner of the forest resources (see Table 12).

However, since the government imposed a ban on log export, the actual log price received by producers is the price of domestic log. Based on data from ITTO (2004), the domestic price of round wood (Meranti) for plywood and sawn timber at the end of 2004 was ranged from U.S.\$ 60/m3 - U.S.\$ 115/m3. The average price reached U.S. \$ 90/m3.

Table 12
Estimated Production Cost of Round Wood (US\$/m³) of Year 2004

Post-Investment Cost	Nilai (US \$/M³)
Pre-investment	0.2
AMDAL	0.9
Satellite Image Processing	0.7
Proposal Preparation	0.2
Operational Cost: Structuring of Work Area and Inventory Prior to Logging	4.7
Opening of Forest Area and Harvesting	22.0
Organisation and Maintenance	1.6
Fixed Cost:	
Research and Development	0.2
Corporate Social Responsibility	1.1
Inrastructures Maintenance	4.4
Depreciation	3.1
General and Administrative Cost	7.9
Total cost	46.9

Source: Muttaqin et al (2005); to obtain value per cubic meter, following assumptions are used: (1) HPH area width 100.000 ha, (2) concession

duration 20 years and (3) AAC per area harvested is 0.65 m3/ha/year.

There is no international price of log for Indonesia because Indonesia adhere a ban on log exports; therefore, the log price approached is from a list price in Sarawak (FOB) per end of 2004 (ITTO, 2004). The log price is calculated by calculating the average of Meranti Wood international price of in 2004. Meranti is chosen because it represents the type of wood that is widespread in Indonesia and it is the main product of natural forest (Muttaqin, 2005).

Table 13
Mean of Meranti Wood Price on Serawak Wood Price

Type of Round Wood	Lowest Price (US\$/M³)	Highest Price (US\$/M³)	Average Price (US\$/M³)
Meranti SQ up	190	195	192.5
Meranti small	160	165	162.5
Meranti super small	130	135	132.5
Overall Meranti			162.5

Source: ITTO (2004)

Based on the data, there is a loss of U.S. \$ 72.5/m3 compared to the potential economic rents if access to international markets will be opened. This loss rate has reached more than doubled the value of economic rents using domestic prices. This can be considered as the cost of log export ban policy. Furthermore, there is a significant difference between domestic and international prices; which would trigger the increase of smuggling, wood theft and illegal logging.

Ironically, log export ban policy is intended to address smuggling and illegal logging problems. In fact, the policy has caused widespread damage to forests and the environment. Moreover, these damages should be put into the policy cost. Existing gap between installed capacity of wood processing industry with sustainable forest resources is difficult to be overcomed, and log export ban has also contribute to the slow process of restructuring industrial sector.

If log export ban policy is to be lifted, domestic wood prices are expected to rise. The removal of log export ban will encourage domestic log price to adjust to log price in the international market. Based on various economic considerations, log price is expected to be between domestic prices and international prices recently (Brown, 1999), or around U.S.\$ 126/m3. This value is higher than the total economic rent available considering corporate taxes which have been taken from part of normal profit are already included.

In general, implementation of this policy could not be applied as such. Implementation of this policy requires more conducive situation in Indonesian forests. To optimize the implementation even further, there should be some adjustments of policies at macro level, including: (1) distribution of Revenue Sharing Fund (DBH) between the central and regional governments that is proportional and fair; (2) revitalization of the forestry sector; (3) handling of illegal logging; and (4) strengthening of soft landing policy.

Moreover, to maintain the sustainability of forest concession, particularly utilization of timber forest products, the government also must consider following things:

- The need of reviewing taxation and non-taxation imposed on HPH concession such as Land and Building Tax (PBB), since HPH concessionaires have no right on the land. Moreover, infrastructures for opening of natural forests (such as roads, etc.) are also left entirely to the HPH concessionaires. This will burden the forest concession; production costs will be high and the HPH concessionaires will loss profit.
- Obligation on reclaiming logged-over land resulting from Forest Concession Rights (HPH) is still charged back to investor, while inverstor has already paid for Reforestation Funds (DR). If in the future there will be improvement in the collection of PSDH and DR (where social-ecolgy aspects are considered), this policy needs to be reviewed.
- The need for coordination among ministries, especially in determining standard price of timber as the basis of PSDH tariff. If log export ban is to be lifted, determining PSDH tariff based on the international standard price of timber will not be an issue. In contrast, if log export ban would remain, it is irrelevant to determine PSDH tariff based on the international standard price of timber (as practiced by the Ministry of Trade in 2012 and has been revised in April 2012). In this matter, coordination between Ministry of Forestry and Ministry of Trade is indispensable.

Conclusion

Economic rent of extraction of forest resources is imposed on 2 (two) major activities in forest area; forest utilization and forest area use. Forest utilization activities clearly cover all activities directly related with forestry sectors; for example, utilization of timber and non-timber forest products. Meanwhile, forest area use activities are non-forestry activities conducted within the forest area, which are commercial in nature, for example; mining and palm oil plantation.

The issue on economic rent of extraction of timber forest products attracts most attention; not only because timber extraction stands as a major source in forestry sector but also because there seemed to be many irregularities in the imposition, allocation and distribution of economic rent. This problem seemed endless; since the establishment of Forest Concession Right (HPH) until today, and who knows when it will be ended.

Reviewing some views related to economic rent of extraction of timber forest products; some viewed that extraction rent of timber forest resources has not calculated social and ecological values affected by forest concession; therefore, the economic rent is considered too little. Others viewed that it is the large amount of invisible cost that makes collection of economic rent of timber extraction not optimum. Economic rent of timber extraction is more determined through collusion between government and company.

Forestry sector is considered not contributing significantly to the national income. That is inferred from contribution of forestry sector on national GDP of not more than 0.9%; which is far from its true potential. It is then the consequence that our forest is getting more damaged; with deforestation value at 1.08 million ha/year or "six football fields per minute". Preposterous! Therefore, it is necessary to improve imposition of economic rent of timber extraction by considering all aspects of the timber.

Some solutions offered on this paper, based on the views of several parties, have lead to the following: Firstly, it is better to lift log export ban. Therefore, the price of domestic wood will adjust to log's price in international market. Secondly, normal profit is assumed to be 20% of the total cost of production, therefore economic rent of logs = selling price - (production cost + normal profit). This value is the potential value which may be collected by the government as the owner of the forest resources.

Recommendation

Recommendations for the improvement of collection of economic rent of extraction of forest resources are described on paragraph below:

The government should improve performance of economic rent collection by taking a larger proportion on the available rents; by considering socio-ecological aspects as well as investment climate. However, it should be noted that the actual rent is a result from a policy implementing log export ban. Log export ban, according to a calculation, has removed nearly two-thirds of potential rents from timber extraction. Moreover, to increase contribution of forestry sector to national PDB there are also some opportunities which should be considered. *Firstly* is optimizing non-timber forest products, which account for 90% of the forest ecosystem. Non-timber forest products are the future of Indonesian forest resources. *Secondly*, the use of Timber Forest Products in the natural production forests should really consider timber growing cycle and implement TPTI system. *Thirdly*, moratorium on new permits in natural forest of production forest should encourage government to optimize production activities in timber forest or commonly known as Industrial Timber Plantation (HTI).

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