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Cut Control Mechanism: Incentives & Disincentives for Sustainable Forest Management

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Cut Control Mechanism:

Incentives & Disincentives for Sustainable Forest Management



The 'Cut Control Mechanism' as discussed in this paper, refers to all regulatory and procedural requirements used by the Ministry of Environment and Forestry to set, approve, and monitor annual production targets for individual forest concessions.

KEY MESSAGES

Over the years the Ministry of Environment and Forestry (MoEF) has evolved a comprehensive set of regulations to administer and regulate the natural forest utilization in Indonesia. The purpose of this regulatory framework is to ensure that Indonesia's natural forests are managed sustainably while providing maximum economic benefit for the national economy, meeting the needs of local stakeholders, and safeguarding the many environmental and social services of the forest. Helping to meet the country's climate change mitigation targets has also become a recent policy addition to the role of the country's forests.

The Forests and Climate Change Programme (FORCLIME) supports various initiatives of the MoEF in order to develop strategies which can strengthen the achievement of sustainable forest management (SFM). One such initiative has been the implementation of a Reduced Impact Logging (RIL) trial by the Tropical Forest Foundation (TFF) in the Malinau concession of PT Inhutani II. This study plus other evaluations carried out by GIZ have contributed to valuable 'lessons learned' which indicate that although the MoEF's regulatory framework provides much of the needed guidance to achieve SFM, there are still flaws in the regulations which act as disincentives to the achievement of policy goals.

The key messages drawn from these findings can be summarized as follows:

- The existing area/volume cut control mechanism used to set the annual production targets in forest concessions provides no incentive for optimum utilization of the main stem volume. In fact, the current cut control mechanism seems to institutionalize wasteful practices. This problem is further aggravated by the use of outdated reduction factors and a uniform royalty system with no relationship to timber quality. The result is a serious undermining of the goals of SFM and a disincentive for climate change mitigation which could be derived from better timber harvesting.
- While the existing regulations dealing with planning and regulating the annual harvest quota are founded on sound principles, they still provide potential for improvement in terms of implementation and oversight in order to achieve their intended outcome. The current situation often results in a further erosion of the goal of SFM.
- In regards to the use of existing inventory regulations for the use of calculating carbon fluxes (Reduced Impact Logging Carbon RIL-C) it is unrealistic to expect the 100% inventory, required of forest concessions, to be the basis for evaluating stand condition for the purpose of monitoring carbon flux due to improvements in management practices from a cost perspective. In addition, based on the study conducted by FORCLIME, it is assumed that only very few forest companies in Indonesia carry out the 100% inventory reliably and consistently.
- Based on results from both FORCLIME FC/TC RIL studies as well as previous TFF studies, the government's mandatory certification scheme (PHPL) routinely awards good marks for compliance even when compliance is only partial or minimal.

Introduction

With the FORCLIME Programme, GIZ supports Indonesia's efforts to strengthen the achievement of SFM as defined by biological, social, and economic parameters, to conserve biodiversity, and to reduce greenhouse gas emissions from the forestry sector.

FORCLIME seeks to provide this support through demonstrations, research, and direct assistance in collaboration with government and private stakeholders at the district, provincial, and national level. Over the past two years, FORCLIME and the Tropical Forest Foundation (TFF) have conducted a demonstration study on the implementation of RIL-C with the goal of quantifying various impact parameters and carbon savings that could be achieved through improved forest management. The lessons learned from this and other studies (references are given in text or footnotes) have been assembled to develop an analysis of MoEF's regulatory framework, particularly as they pertain to the way in which Indonesia plans, issues, and regulates its annual cutting targets for timber concessions in natural production forests.

Licensed timber concessions (IUPHHK-HA) occupy approximately 24.7 million hectares¹ of Indonesia's natural forests². Although active concessions occupy only +/- 13 million of these hectares³, they still play a vital role in whether or not SFM is achieved. One of the important measures of SFM is the adoption of RIL management strategies. The RIL-C study commissioned through FORCLIME resulted in an evaluation of the strengths and weaknesses of the existing regulatory framework and how it affects the behavior of forest concessions. The MoEF continues to develop its capacity to manage the country's natural forests through introducing new regulations to an already impressive regulatory structure. Navigating this regulation-based mandate aimed at ensuring the sustainable management of the natural production forests in the best interests of the country and its stakeholders can be challenging.

This paper reviews existing and newly introduced regulations and requirements as set out by the MoEF. Timber concession companies must follow these regulations as a condition of their right to harvest in

1 Source: IPSDH (2015): Buku basis data geospasial kehutanan tahun 2015.

2 Total natural forest area: 96 million ha (51% of total land area). Production forest area (still forested): 46.6 million ha (whereas 21.8 million are limited production forest: HPT, 18.1 million ha are production forest: HP, and 6.7 million ha are convertible production forest: HPK). Total production forest area (forested and non-forested): 68.7 million ha (HPT: 26.3; HP: 29.3; HPK: 13.1). Source: IPSDH (2015): Rekalkulasi Penutupan Lahan Indonesia Tahun 2014.

3 Data from MoEF website for 2014.





the natural production forest. The paper examines the strengths and weaknesses of existing regulations and offers recommendations for strengthening the regulatory framework with a view to enhancing the country's ability to achieve SFM and the ability to realize enhanced carbon benefits through improvements in forest management.

Scope

The achievement of sustainability in natural forest management is influenced by many regulations from the setting of the Annual Allowable Cut (AAC) through to the monitoring of actual production in a management unit. These regulations can directly promote or, in some cases, detract from the achievement of SFM. The impact of a regulation can alter the behavior of a forest concession company, particularly if the regulation is difficult or costly to implement.

This paper will review the main regulatory requirements but will focus particularly on the setting of the annual production target (Jatah Produksi Tahunan or JPT) and the monitoring of actual production towards this target. The overall mechanism is referred to as the 'cut control mechanism'.

The discussion will look at long-standing regulatory requirements and their impact on the achievement of SFM as well as examining the likely consequences of changes currently being put in place to the inventory requirements that a forest concession will have to comply with.

Changes to basic silvicultural assumptions

Until 2009, Indonesia's natural forests were managed entirely under the Tebang Pilih Tanaman Indonesia (TPTI) or Indonesian Selective Cutting and Planting Silvicultural System which was largely a prescriptive regulatory requirement consisting of 13 steps underwritten with a few cautious assumptions. In natural forests, the rotation cycle was set at 35 years with felling diameter limits of 60 cm in limited production forests and 50 cm for production forests. Annual increment was assumed conservatively at one cm/tree/year for an annual volume increment of 1 cu.m./ha.

With the introduction of alternative silvicultural systems (other than TPTI) in 2009, diameter limits were reduced to 40 and 50 cm for the two main forest categories and the rotation cycle was shortened to 30 years. The TPTI system was reduced to 7 steps⁴ by eliminating most of the post harvesting

4 Peraturan Direktur Jenderal Bina Produksi Kehutanan No. P.9/VI-BPHA/2009.



requirements. The scientific validity for the fundamental changes to diameter limits and rotation cycle have not been verified but were instituted primarily to augment a shrinking log supply as individual concession areas were reduced with each license renewal and with unauthorized occupation of forest land steadily undermining the productive forest area. This policy change has primarily benefited vertically integrated forest companies who have been able to increase their wood supply. However, concessions not directly linked to industries largely ignored this opportunity for reduced diameter limit cutting since the domestic market places a much lower value on logs with diameters less than 50 cm. Additional major changes were made to the planning and administrative systems, beginning with the introduction of a periodic concession wide inventory (Inventarisasi Hutan Menyeluruh Berkala or IHMB).

IHMB

As part of the 2009 changes in planning requirements, the MoEF introduced the concept of a periodic, concession inventory (IHMB) which replaced the long term (20 year) planning requirement. The IHMB, requires a forest concession to conduct a concession wide inventory every 10 years.

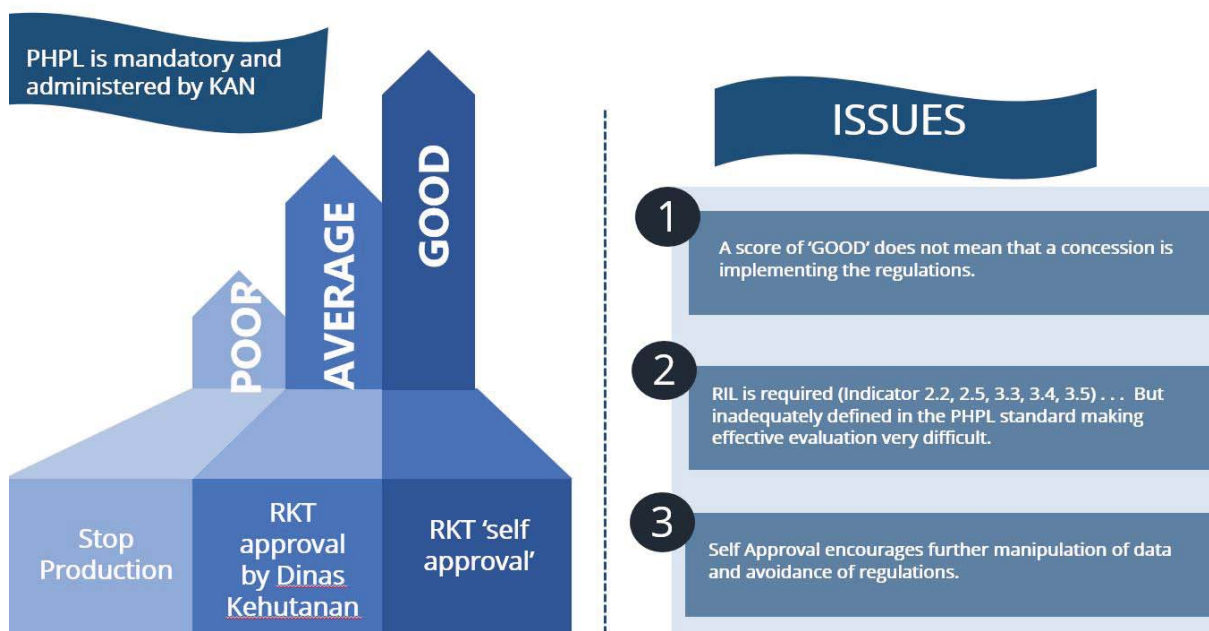
Systematic sampling intensity, plot configuration, and data collection protocols are prescribed. The result is summarized on a block basis with each block of approximately 100 ha being represented by 1 plot. The output is essentially a stocking map of the concessions showing the various stocking categories supported by summarized stocking and volume data. Maximum AAC can be determined from this inventory, however, in most cases, concessions simply use the stocking map to choose the next ten years harvesting areas. Most concession companies contract consulting companies to carry out the IHMB.

Based on P.33/2009 on IHMB, the field check is supposed to be conducted by Dinas Kehutanan Provinsi latest 3 months after the report has been received by MoEF (DG PHPL). However experiences from RIL trainers (civil society organizations) show that the field check does not always ensure accurate IHMB data. Consequently, the reliability of the resulting maps and volume tables is uncertain. The recent RIL trial (FORCLIME/TFF RIL-C study in PT Inhutani II, Malinau, 2014-2016) and a review of other collaborating concessions indicate that significant increases in the AAC are associated with the adoption of the IHMB process. This generates similar increases in the JPT of individual concessions.

PHPL

A positive outcome of the engagement in the FLEGT legality verification process has been the decision to adopt a mandatory certification requirement for all natural forest concessions. This requirement is implemented under the authority of KAN, an independent government standards setting body which has developed an accreditation system under which qualifying consulting groups conduct audits against the MoEF SFM standard consisting of 4 criteria, 22 indicators and 89 verifiers⁵.

Although the ownership of the SFM standard rests with the MoEF, the responsibility of overseeing and implementing the auditing process falls under the jurisdiction of KAN and its accredited auditing firms. This concept is similar to independent certification schemes and should provide a sound basis of supervising the performance of forest concessions (see figure above). Concession companies pay for the audit and are rated as “poor”, “average” or “good” by the certifying body. Sanctions can be applied to the annual harvesting approvals if the score is “poor”. An “average” score will require that all approvals of annual cutting permits are processed and approved by the Provincial Forest Department (Dinas Kehutanan Provinsi), while a score of “good” will entitle the concession company to a ‘self-approval’ process which applies to the verification of the 100% inventory, the annual work plan (Rencana Karya Tahunan or RKT) approval process, and the reporting of the Production Reports (Laporan Hasil Produksi or LHP). In the future the responsibilities namely, supervising licensing and monitoring timber harvest planning and implementation will be taken over by FMUs under supervision of the Provincial Forest Department. With the current online reporting procedure of the LHP to MoEF, the Dinas Kehutanan faces challenges in terms of monitoring on time. Dinas Kehutanan does not directly receive the LHP.



⁵ Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia (PermenLHK) No. P.30/menLHK/Setjen/PHPL.3/3/2016.



Oversight of this process is left largely to civil society organizations. It has been frequently observed by RIL trainers that actual field performance by a forest concession company bears little relationship to the final audit evaluation by the KAN accredited auditors. Failure to implement regulatory requirements such as the 100% inventory or 'reduced impact logging' practices in part or in whole may still result in a score of 'good'. There is no formal criteria and indicator catalogue for evaluating RIL performance of concession companies. Pengelolaan Hutan Produksi Lestari (PHPL) mandatory certification mentions RIL as a requirement but leaves it to the auditor (KAN) to interpret what compliance with RIL is supposed to be. Such inconsistencies, if not corrected, risk undermining the credibility of the entire PHPL certification system.

Setting of Annual Production Target

The process of setting the annual production target (JPT) is a crucial tool for regulating the rate of harvest of a forest concession. Concession companies are required to conduct a 100% inventory for their entire RKT at least one year prior to harvesting. Harvestable trees are marked with a red label whereas target trees (future crop trees) are marked with a yellow label. The inventory data is compiled in a cruising report (Laporan Hasil Cruising or LHC) and either submitted for approval by the Dinas Kehutanan or subjected to 'self-approval' depending on the PHPL score. Procedures for this inventory are detailed in the revised TPTI silviculture and administrative guidelines.

Due to the conditions in natural tropical production forests, all inventory data (dbh and tree height to first major branch) is estimated visually. There is no field checking of these visual estimates by Dinas Kehutanan or others. Volumes are calculated using MoEF standard volume tables and the resulting 100% inventory report (LHC) is compiled and submitted to the Dinas Kehutanan.

The gross volume of all trees of commercial species and quality above the minimum diameter limit as defined by the forest classification (production or limited production forest) is then reduced by a multiplier consisting of 0.8 and 0.7 and referred to as the safety factor and the exploitation factor, respectively⁶. The combined reduction factor of 0.56 – whose derivation could not be determined – is applied to the gross commercial volume to arrive at the permissible annual production target (JPT) in the defined annual work plan (RKT) within the annual harvest area. The JPT calculated through this process cannot exceed the AAC as determined by the IHMB process.

The resulting JPT is defined in terms of permissible harvestable volume and number of trees that can be logged by species and by individual cutting blocks or 'petaks'. The approval of the JPT gives the

⁶ MoF regulations No. 485/Kpts/II/1989, No. 564/Kpts/IV-BPHH/1989, No. 151/Kpts/IV-BPHH/1003.



concession company freedom to harvest up to the approved volume within the approved RKT area. Harvesting of this volume is left up to the concession which is free to operate within the RKT area until either the JPT volume is achieved or the area has been entirely harvested, i.e. the concession company can choose from the 'red label' trees which ones they want to harvest, and they can choose what portion and which portion of each cut tree they want to extract.

The scientific basis for using these reduction factors is not entirely clear, however, the outcome of their application is well understood and documented. Essentially, the application of this area/volume cut control mechanism where the estimates of harvestable volumes have been reduced by a multiplier of 0.56, creates a situation where the logging concession company is allowed to select the best portion of the trees it fells and leave the rest in the forest. In other words, wasteful practices can be implemented without penalty. There is no provision of any significant incentive for good utilization.

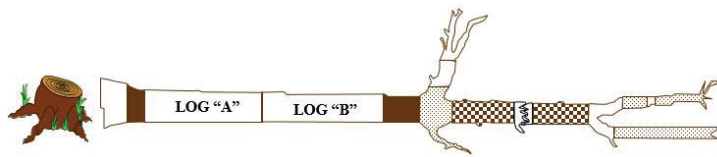
Avoidable Logging Waste

The utilization of Indonesia's natural forests generates some of the highest levels of waste in the tropical forest management worldwide. Highly selective utilization standards leave significant quantities of high quality, main stem volume in the forest. This situation occurs consistently throughout Indonesia's forest concession system and persists despite a growing awareness of a shrinking wood supply.

Avoidable waste has been defined as high quality main stem volume that could be extracted as part of the log and utilized in existing industrial facilities but, which is left in the forest as a result of poorly supervised bucking practices and/or lack of a clearly articulated utilization standard. Various studies have been conducted since the late 1990s and results differ depending on parameters set out for each study; however, it is safe to generalize that between 10 to 20% improvements in main stem volume recover can be expected through the application of RIL. If such improvements were to be applied to the annual harvest from natural forest concessions, we can safely estimate that direct revenue from royalty [Dana Reboisasi (DR) and Provisi sumber Daya Hutan (PSDH)]⁷ could be increased between 13 to 27 million United States Dollars (USD) per year and an additional log value of between 63 to 126 million USD could be generated each year⁸.

7 DR is assessed in USD. PSDH is assessed in Rupiah as a percent of value set by government and is specific to species groups.

8 Assumptions: Annual harvest of 5.5 million cu.m.; total royalty average USD25/cu.m.; potential improvements in utilization 10-20%; average log value USD115/cu.m.



Avoidable waste: stump butt, top, break, left log
 Past studies routinely estimate 'avoidable waste at 5 to 10+ cu.m./ha

Lost revenue; lost economic opportunity; increased carbon emissions → AVOIDABLE



The causes of such wasteful practices have been analyzed in various studies⁹ but can be attributed to a few crucial factors. The most obvious reasons for the wasteful utilization practices of forest concession are directly attributable to two aspects of the cut control mechanism. Firstly, the artificial reduction of inventory estimates through the application of reduction factors and the granting of JPT on a volume/area basis encourages concession companies to choose only the best portions of the felled trees and leave large volumes of 'avoidable' waste in the forest. Secondly, the levying of a non-differentiated royalty actively discourages better utilization of all but the best portions of a felled tree. Essentially, there are neither incentives for better utilization, nor disincentives for poor utilization practices.

Over the years, vertically integrated companies with their own manufacturing facilities have improved their utilization of the trees they fell as their supply of logs has shrunk. However, in 2014 the MoEF instituted a policy requiring that any new concessions or concession renewals be limited to a maximum of 50,000 ha resulting in the establishment of smaller, independent companies which sell much of their log production on the national open market. This has contributed to maintaining the status quo of poor utilization practices as log buyers insist on only best quality logs.

There is some evidence that the MoEF has recognized the need to address the avoidable waste issue. In its definition 'legitimate logging waste' is defined¹⁰ as any wood which is not from a stated list of species considered as 'fancy or decorative wood with special uses, round wood less than 30 cm in diameter with no length limitations, and round wood less than 2 meters in length with no diameter

9 NRMP Report No.37, 1994, "Avoidable Logging Waste".

NRMP Report No.70, 1996, "Report on an operational logging trial and the evaluation of the residual stand"

Priyadi, Hari, Petrus Gunarso, Plinio Sist, Art Klassen, Hariyatno Dwiprabowo, Geral Silooy, Hadi Siswoyo, 1999, "Benefits and constraints in implementing reduced impact logging in Indonesia with reference to Malinau research forest, East Kalimantan" CIFOR.

TFF, "Reduced Impact Logging & Certification Newsletter, Issues: April 2004; March 2005; May 2006.

10 "Pedoman Teknis Pemungutan dan Pemanfaatan Kayu Limbah Pembalakan" Decree No. 212/KPTS/IV-PHH/90 issued by the Director General of Forest Utilization.

limitations'. Subsequent decrees have set out the royalty and fees payable on such waste wood¹¹. Although adjusted periodically, this royalty on waste is currently set at USD 4/cu.m. which is less than a quarter of normal royalty payments¹². Since royalty is payable on log measurement at roadside in the forest, waste as defined by the MoEF would have to be extracted and transported separately from normal logs. Given the high costs of extraction and transportation, it is virtually impossible for companies to take advantage of this narrow definition of waste from a royalty perspective and only very few companies have attempted to do so¹³.

Monitoring the JPT

To ensure that concession companies do not exceed their JPT targets, the MoEF requires that the companies file a production report (LHP) twice a month¹⁴. The government requires that LHP volumes, number of trees, and species should not vary from the JPT as determined from the LHC by +/-30%. However, since the majority of the forest concession companies compile their LHC reports based on varying degrees of partial sampling, the actual production can vary significantly from the planned volumes, species, or number of stems. This results in a situation where companies may adjust the LHP in various ways to avoid deviation from the LHC and the resulting sanctions that could be imposed by the Dinas Kehutanan. Essentially the regulatory elements mentioned above encourage manipulation of data since the initial basis for the setting of the JPT is so dependent on unreliable estimates.

Reporting of both the LHC and LHP is now mandatory using the Ministry's on-line system (System Informasi Penatausahaan Hasil Hutan, or 'SIPPUH'). However, for many forest concession companies, the relationship between LHC and LHP can be biased.

11 Presidential Decree Peraturan Pemerintah Republik Indonesia, No.12 Tahun 2014.

12 DR fixed by species and area with an estimated average of \$16/cu.m.; PSDH assessed at 10% of government set value with an estimated average of at least \$9/cu.m.

13 TFF, 2010, "Extracting greater value from the forest", Reduced Impact Logging & Certification Newsletter, October 2010.

14 MoF regulation No. 151/Kpts/IV-BPHH/1993.





Recommendations to the improvement of SFM in the ‘Cut Control Mechanism’

When viewed as a holistic system, the planning, setting, and controlling of the annual production targets, as required under Indonesia’s regulatory framework, should provide robust assurances towards the achievement of SFM. However, when reviewed in detail, the various requirements are either based on highly inaccurate estimates or assumptions, or not implemented as intended. Monitoring of performance is usually a paper exercise and almost never detects inconsistencies and non-compliance with regulations. The result is an administrative system which fails to ensure the achievement of SFM and often entrenches practices which are counterproductive to this goal.

FORCLIME seeks to assist the MoEF, FMUs, Dinas Kehutanan, as well as community based and private sector stakeholders who are engaged in forest management activities by conducting studies, demonstrations and analysis. These activities aim at strengthening existing functions and preparing recommendations for further improvement with the goal of supporting Indonesia achieve SFM and meet its goals related to climate change mitigation in the forest sector.

FORCLIME summary of recommendations to MoEF on the ‘cut control mechanism’:

1. General

- Rationalize regulatory requirements and procedures to ensure greater transparency and accountability in the administration of the cut control mechanism for natural forest concessions.
- Assist in the development and implementation of a transparent, reliable, and easy to implement monitoring system to ensure compliance with regulations related to PHPL/SFM.

2. Improvement of certification process

- Define a ‘RIL compliance scheme’ with criteria and indicators; include such scheme as part of the mandatory PHPL certification scheme.
- Strengthen the recognition and adoption of voluntary certification (e.g. FSC) as a complement to the MoEF mandatory certification scheme.
- Evaluate the RKT self-approval process (PHPL score: good) targeting SFM implementation.

- Investigate options on the feasibility of a 'contractor certification scheme' to ensure RIL implementation referring to both mandatory (PHPL) and voluntary (e.g. FSC) certification requirements.

3. Potential FMU tasks

- Support to clarify Forest Management Unit (FMU) roles and responsibilities in the licensing process and in monitoring timber harvesting planning and implementation.
- Ensure regular monitoring (field checks) of forest inventory, forest operations and logging contractors with clear responsibilities of all stakeholders involved (logging contractor, concession company, Dinas Kehutanan, FMU etc.).
- LHP should be forwarded promptly to Dinas Kehutanan and FMU for field check while the LHP is administered by MoEF.
- Establish RIL based forest inventories which are field checked by FMU/Dinas Kehutanan; thereby increase the accuracy of the data from IHMB.
- Provide training for logging contractors by CEFET, BDK in the regions through the FMUs.





4. Technical aspects

- Develop an appropriate timber utilization standard for natural forest concessions.
- Eliminate causes of avoidable logging waste in the current regulatory practices.
- Review the appropriateness of the reduction factors.
- Synergize stakeholders in the development of a differential royalty system for the harvesting of the natural forest to encourage full utilization of harvested trees (optimization of wood utilization).
- Investigate whether non-harvested timber volumes which have been approved (JPT), could be accounted for as emission reduction (example: 35,000m³ JPT but only 17,000m³ actually harvested; there would be 18,000m³ remain and stored in the annual harvest area, or RKT).

