

# OP RENGAS-COMOS: A NEW DIMENSION TO COMBAT ILLEGAL LOGGING IN SARAWAK

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## Abstract

With 62% of Sarawak's 12.4 million hectares landmass under forest cover, Forest Department Sarawak (FDS) is responsible for enforcing both the Forest Rules and Forests Ordinance, 2015 (Cap.71). In conjunction with its 100<sup>th</sup> anniversary since establishment, FDS has transformed the way it conducts its enforcement in 2019 by adopting Op Rengas-COMOS, which incorporates digitalization and inter-agency collaboration. The Continuous Monitoring and Surveillance (COMOS) initiative leverages on geospatial-based technologies to effectively obtain, analyse and disseminate tactical information to its enforcement personnel, thus enabling them to make critical decisions during the various stages of the enforcement operation. This has effectively reduced costs and time in its intelligence gathering by giving up-to-date and accurate information to its enforcement personnel. The success of this approach has been translated into the increase of cases involving forest offences in 2019 during the inception of this approach and the subsequent reduction of up to 50% in the following years. With both the local and international acknowledgement, such achievement supports the adoption of Op Rengas-COMOS in combating illegal logging.

Keywords: Combating Illegal Logging, COMOS, Forest Technology

## 1.0 INTRODUCTION

Sarawak has a landmass of 12.4 million ha, of which 7.7 million ha or 62% are still under forest cover. Forest Department Sarawak is entrusted to manage the state's forests, including 117 Permanent Forest Estates (PFEs) of 3.9 million ha, which consist of 29 Communal Forests (5,688 ha), 42 Forest Reserves (541,267 ha), 44 Protected Forests (3,415,993 ha), and two (2) Government Reserves (2,165 ha), as well as a Stateland Area of 3.05 million hectares.

Forest Department Sarawak (FDS) was established in 1919 to spearhead sustainable forest management in Sarawak. The present Forest Ordinance, 2015 (Cap. 71) and other regulations are one of the main functions of the FDS as outlined in the State Forestry Policy 1954.

The department's vision is to be globally recognized in Sustainable Forest Management while its mission is to manage and develop forest resources for socio-economic and environmental sustainability. These are in line with Sarawak Socio-Economic Transformation Plan (2016-2030) towards achieving world-class service for the people of Sarawak.

The use of the Continuous Monitoring and Surveillance (COMOS) approach is the latest digital technology-based initiative developed by FDS specifically to detect and disseminate tactical information on illegal logging activities at an early stage for enforcement teams. It can improve the effectiveness of enforcement actions by saving time, cost and acquire more accurate intelligence information.

The main objective of the Op Rengas-COMOS is to combat all illegal logging activities in targeted areas in Sarawak thus achieving the mission of FDS to eradicate illegal logging in the PFEs by 2025.

## **2.0 ILLEGAL LOGGING IN SARAWAK**

Forest Law Enforcement, Governance and Trade (FLEGT) defines illegal logging as the harvesting, processing, transporting, buying, or selling of timber in contravention of national and international laws. Illegal logging undermines the legitimacy of the forest sector and hinders the efforts of FDS to implement Sustainable Forest Management (SFM). It has a devastating impact on Sarawak's most valuable remaining forests, and on the local communities who live in them and rely on the resources that forests provide.

The issue of illegal logging in Sarawak has been published regularly in the media. The state's landmass is massive, making it very difficult to wipe out illegal logging in its entirety. According to the former Chief Minister of Sarawak, illegal logging has caused the state to lose billions of ringgit in revenue over the last 30 years (The Malay Mail, Oct. 27<sup>th</sup> 2015).

As reported in 2014, it is no exaggeration to say that only about 15 percent of the original forests in Sarawak are not affected by logging or oil palm plantations, while the country's forest cover should be at least 60 percent of its total landmass. The situation is very worrying and needs to be given serious and immediate attention.

FDS has started the new initiative to improve the effectiveness of enforcement to combat illegal logging in Sarawak through commitment by all relevant agencies with specific and complementary roles, especially in providing the appropriate technology and capacity for logistics and manpower.

## **3.0 STRUCTURE OF ENFORCEMENT TO COMBAT ILLEGAL LOGGING**

Enforcement duties at the FDS are carried out at various levels. The enforcement structure is as follows:

- i. Prevention and enforcement initiatives at FDS are spearheaded by the Director of Forests, Sarawak. He is responsible for ensuring that enforcement matters are carried out under the provisions of the Forests Ordinance, 2015 (Cap.71)
- ii. In line with the directive from the Chief Minister of Sarawak in 2014 to combat illegal logging in the state, a special committee, the State Illegal Logging Task Force (STFIL) was formed and chaired by YB Datuk Amar Haji Awang Tengah Bin Ali Hasan, Minister of Urban Development and Natural Resources II. The task force was made up of various government agencies, statutory bodies and representatives from the timber industry. This special committee meets and sets the direction in combating illegal logging.
- iii. Illegal Logging Action Committee (ILAC) is one of the committees under the State Illegal Logging Task Force, which is chaired by the Permanent Secretary, Ministry of Urban Development and Natural Resources (MUDeNR). The committee is responsible for monitoring forest enforcement activities and discussing issues and challenges at the ministry level.

- iv. The *Jawatankuasa Pembanterasan Pembalakan Haram* (JKPPH) was also established at the Forest Department Sarawak level to monitor preventive and enforcement duties from time to time, chaired by the Director of Forests.
- v. Special Forces under MUDeNR led by Lt Gen. (R) YBhg Datuk Stephen Mundau to coordinate the interagency Op Rengas, that brings together several enforcement agencies to form a special force with the concept of Search, Strike and Seize.

#### 4.0 THE GAME CHANGER: LEVERAGING ON DIGITAL TECHNOLOGY - COMOS

In its effort to leverage on technology to effectively monitor the whole state of Sarawak, FDS has integrated remote sensing and ICT as part of the continuous monitoring and surveillance (COMOS) initiative (Figure X1).



Figure X1: The COMOS initiative that adopts the use of remote sensing technology and ICT for the continuous monitoring and surveillance of the state’s forest area as implemented by FDS. It covers areas that fall under Production Forests, logging and also Industrial Plantations, Totally Protected Areas (TPAs) such as national parks, wildlife sanctuaries and reserves and also any logging related activities within the state land.

This initiative aims to increase the effectiveness of enforcement operations by emphasizing rapid responses through tactical information being provided to the enforcement team. In addition, it also provides the means to analyse the patterns and effects of intervention actions taken by FDS and other

enforcement agencies on cases involving illegal logging activities. This will ensure that subsequent measures are taken and enforcement activities are executed in a more effective and transparent manner.

#### 4.1 Continuous Monitoring Stage

One of the main functions of the COMOS initiative is the continuous monitoring of the forest areas. This is carried out in stages (Figure X2), where the initial monitoring is implemented using the Earth Observation Satellites System, which can provide a broad overview of land use (such as logging) activities.

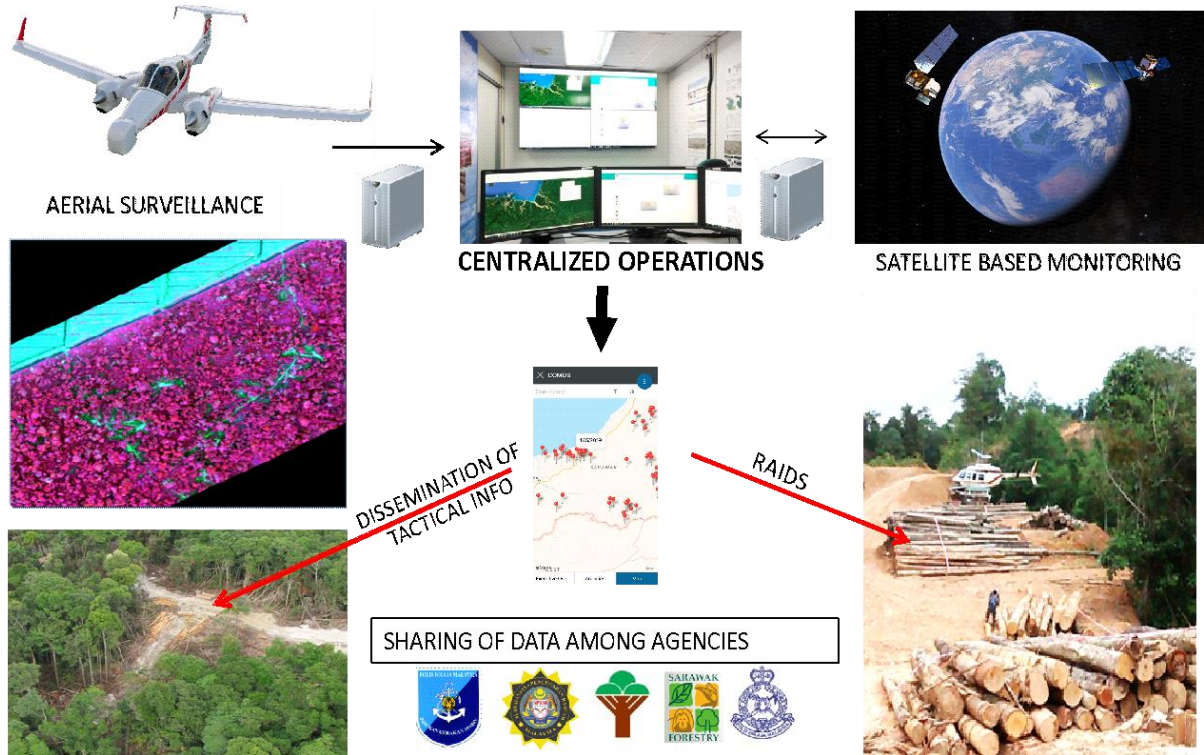


Figure X2: Workflow for the COMOS initiative starting from satellite monitoring and aerial surveys up to the dissemination of tactical information to the field operative @ raiding team

The satellite data analysis is performed at the central command and control facility on a daily basis to cover the forest areas within the Permanent Forest Estates (PFEs) and the Totally Protected Areas (TPAs). The control centre will then verify the status of the land use through air surveys and thorough document search within a defined area to confirm if logging operations conducted at the targeted locations comply with the licence specification or permit issued by the department. This involves temporal analytics to detect active logging sites and define them into spatial topologies that would be subsequently verified based on the land use status of each respective location.

## 4.2 Dissemination of Tactical Information to the Field Operative

For the dissemination of the tactical information to both the field operative and management, a mobile application platform is adopted as it is seen to be the most effective method to distribute information *en masse*. Tactical information is disseminated on a weekly basis, whereas statistical analysis and trends are summarised into a dashboard and also distributed via the mobile application for management planning and strategy development (Figure X3).



Figure X3: Tactical information will be relayed to the field officer while the dashboard provides the viewer with important information as a result of the operation that has been performed.

Tactical information provided to users in the field includes the type of the offence, licence status and information on the forest reserve for each location (strike point) and the points are shown on the map with their relative geospatial location (GPS coordinates). Hence, this enables the field officer to evaluate the most effective method in executing the operations either by land, river or air (helicopter). These locations could then be incorporated in mobile mapping applications (on-line and off-line) that would navigate the raiding team to the site. The online version would enable the user to render online satellite base maps whereas the offline version incorporates user-defined base maps.

## **5.0 OP RENGAS - COMOS**

Op Rengas-COMOS is a well-planned operation to combat illegal logging to ensure high confidentiality and integrity. This operation is carried out to combat illegal logging in the targeted area based on intelligence information channeled by COMOS, as well as intelligence information collected in the area. Op Rengas-COMOS combines enforcement officers from various state and federal enforcement agencies, including the Ministry of Natural Resources and Urban Development (MUDeNR), the Sarawak Timber Industry Development Corporation (STIDC), State Security and Enforcement Unit (UKPN), Harwood Timber Sdn. Bhd. (HTSB), Sarawak Forestry Corporation (SFC), Sarawak River Board (SRB), PDRM (including General Operations Force, Marine, Air Operations Force), Malaysian Anti-Corruption Commission (MACC) and others.

### **5.1 OP Order**

5.1.1 The objectives to be achieved in this operation include:

- a. Combating illegal logging activities in the Area of Responsibility (KTJ);
- b. Finding, detecting and destroying illegal logging activities;
- c. Collecting intelligence information on illegal logging activities; and
- d. Reduce illegal logging activities in KTJ.

5.1.2 Operating Structure

- a. Operations Commander - Head of Special Forces (PGK) Combatting Illegal Logging.
- b. Command and Control Centre – War Room at Headquarters and mobile operation unit
- c. Implementation Group – All enforcement agencies involved.
- d. Strike Team composition – Ground Team, River Team, Air Team and Reserve Team.
- e. Air Raids – air raids are carried out together with SADU units and a mobile operation unit is used to coordinate the air operations
- f. Organization Chart of Operations Rengas
- g. Time Frame
- h. Operation target area (KTJ)

5.1.3 Operational Preparation

Force integration training, team building sessions and combat preparations are conducted 3 days before an op is launched. The training is conducted by the Head of MUDeNR Special Forces and assisted by the Assistant Director of the Preventive and Enforcement Division (PED) of FDS. The training is important to prepare a good, strong operations team, which is ready to receive instructions throughout the operation.

## 6.0 OUTCOME AND IMPACT

### 6.1. Outcome

The effectiveness of enforcement to combat illegal logging has been improving since 2015 with the action plan implemented. Although the actual plan has been completed and was impactful to the public and other agencies, there will be more challenges in the future to stay effective.

The introduction of the use of COMOS in Op Rengas has had a significant impact in combating illegal logging. The efficiency and accuracy of the COMOS are important elements in the operations, enabling illegal logging activities to be detected accurately and the team to act quickly.

The number of forest offense cases has decreased compared to the past few years. Figure 2 shows the number of cases recorded from 2016 – 2021. For the year 2017 until 2018, the cases were still considered high with an average of 10 to 12 cases per month. The increase of about 32% cases in 2019 from the previous year is due to the effectiveness of Op Rengas-COMOS in detecting and striking the targeted points. Cases recorded in 2020 and 2021 dropped by 50% from the year 2019. This was mainly due to illegal loggers realizing that COMOS can detect their activities from the sky so some even resorted to burying logs in the ground.

### No. of Investigation Papers

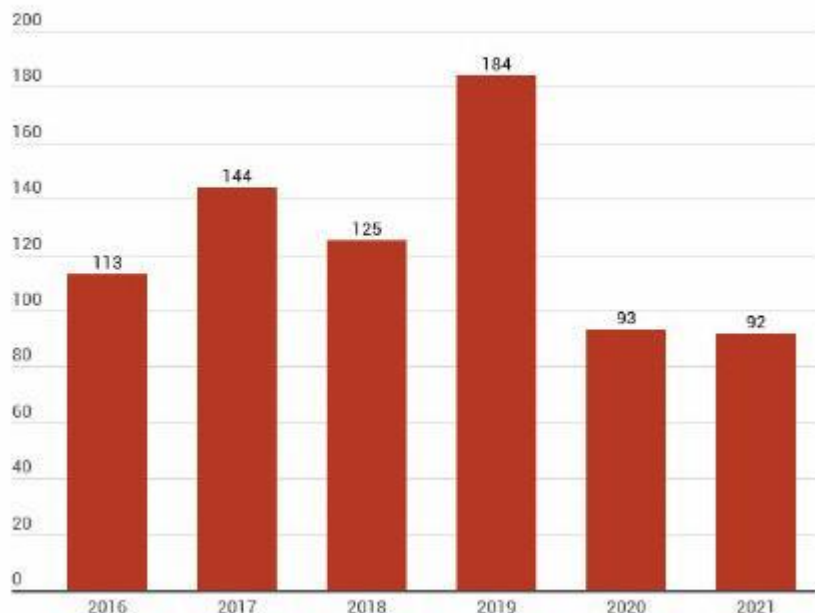


Figure X2: The number of IPs recorded under provisions of Forest Ordinance, 2015 (Cap. 71)

The cooperation with the other enforcement agencies also brought deep understanding of the conservation and protection of our native forest. The other agencies are now familiar with forest offenses,

and the process of the legality of timber logging in Sarawak, and thus, the synergy between agencies has improved on a long-term basis.

The regular presence of patrolling teams on the ground creates confidence among the society that the State is serious in curbing illegal logging activities.

## **6.2 Collaboration between enforcement agencies**

The implementation of an integrated Op Rengas-COMOS that merges several enforcement agencies under one Operation Order issued by the operations commander.

With this arrangement, it will be able to signal to the illegal loggers that the state government takes illegal logging very seriously and with a high level of integrity. In addition, it can also strengthen the network of cooperation with various enforcement agencies.

## **6.3 RECOGNITION**

### **6.3.1 COMOS Application Presentation in Asia Pacific Economic Cooperation (APEC) Meeting**

FDS was invited by the Ministry of Primary Industries (MPI) to join the Malaysian delegation at the Expert Group on Illegal Logging and Associated Trade (EGILAT) meeting in the Asia Pacific Economic Cooperation (APEC) negotiations held in Puerto Varas, Chile on 16-19<sup>th</sup> August 2019. FDS was given a session to present the COMOS application in combating illegal logging. As a result of the presentation, the meeting of representatives of the 29 member states expressed appreciation for Malaysia's efforts and determination to use technology in combating illegal logging.

- I. International Police INTERPOL (Mr. Fernando Navarro Trinca - Principal Forestry Agent) has expressed interest in working with FDS and the Malaysian government in the eradication of cross-border illegal logging.
- II. Briefing on COMOS application had been conducted with the Japanese Consulate based in Kota Kinabalu on 5<sup>th</sup> August 2020 via online Zoom meeting. The Japanese Consulate has acknowledged actions taken by FDS in combating illegal logging in Sarawak. During the briefing, the consular was satisfied with the success of Op Rengas-COMOS and congratulated FDS on the initiative to ensure only legal timbers are exported to the Japanese market.

## **7.0 CONCLUSION**

The Sarawak government takes the problem of illegal logging in the state seriously and has taken various measures to curb this activity including setting up a State Task Force on Illegal Logging chaired by Deputy Premier Sarawak, which monitors all activities to combat illegal logging in Sarawak.

Op Rengas COMOS is the latest initiative by FDS in combating illegal logging in the state. A key component in this op is COMOS, which incorporates the latest technology in the detection of illegal logging activities.

The Op was further strengthened by launching the DA42-MPP aircraft equipped with hyperspectral sensors and air monitoring sensors by FDS under the Sarawak Air Detection Unit (SADU) to provide airborne geospatial data services based on hyperspectral technology for monitoring and managing state resources.