

# SUSTAINABILITY BRIEF

## AUGUST 2019

### MONITORING DEFORESTATION

#### *The Use and Misuse of Satellite Technology*

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The palm oil industry has become increasingly reliant on satellite as well as drone technology and visuals for monitoring purposes. Like the concept of photography using cameras, satellite imagery are snapshots taken from high elevations. Satellites and its imagery outputs are progressively becoming more sensitive and detailed with the added use of radar and laser technology to complement it.

Wilmar is among the industry players who have adopted the use of satellite technology for our monitoring efforts. We use satellite imagery to both proactively monitor our own 30,000 hectares of set-aside conservation areas and also our suppliers. Having worked with Aidenvironment since 2014, and through our [Supplier Group Compliance Programme](#) (SGCP), today we are monitoring over 14.75 million hectares<sup>1</sup> associated with our supply chain. Our SGCP also allows us to monitor over 200 parent groups representing approximately 750 mills and 1,500 plantations across Indonesia, Malaysia and Papua New Guinea.

Wilmar also uses satellite imagery information for fire monitoring and management, which is especially crucial during dry seasons. Hotspots identified by the Visible Infrared Imaging Radiometer Suite (VIIRS) and National Aeronautics and Space Administration (NASA) satellite imageries are monitored daily. Any hotspot notification located within Wilmar's plantations and five kilometers outside of our concession boundaries will be relayed by our Geographic Information System (GIS) team in Jakarta to the team on-site. A team comprising of members from Wilmar's GIS, Conservation and Management departments are then mobilized to verify data received from the satellite imagery. The use of satellite technology in this way has significantly improved our rates of early detection of fires, and therefore also raises the effectiveness of our rapid response teams.

<sup>1</sup> Pages 7, 38, 47: <https://ir-media.wilmar-international.com/app/uploads/2019/05/Wilmar-Sustainability-Report-2018.pdf>

### Wilmar's Supplier Group Compliance Programme (SGCP)

Aidenvironment has done extensive work in identifying where oil palm is present in Indonesia, Malaysia and Papua New Guinea, having collated publicly available concession boundaries in these regions over a number of years. Through monitoring information they provide, we have been able to engage our suppliers and prevent possible deforestation of approximately six million hectares of forest in Indonesia from entering our supply chain, as reported in the [Chain Reaction Research report](#) dated 9 July 2019.

Aidenvironment's monitoring information provided to Wilmar is backed by research and compilations of historical data, documentations and other related references. This means that we receive as part of the SGCP, analysis that is able to quite accurately confirm the types of land use, and its changes in the many different areas that are being monitored. This accuracy, is only possible because of the local knowledge and verification of the data received from past and present satellite images.

### **SATELLITES FOR MONITORING**

While satellite images and technology has improved by leaps and bounds, it is important to understand that it is not just about the highest resolution satellite images, or accuracy to the minute of the land use change in the imagery. In order to efficiently and effectively use the data gathered from satellites to identify deforestation non-compliances, several other aspects need to be taken into account.



Table Monitoring Analysis Information :

	No Deforestation, No Pest*	2016-2018	Jan-Feb 2019	Mar 2019
	Forest clearing (ha)	7,863	837	315
	Pest forest clearing (ha)	0	0	0
	Pest development (ha)	0	0	0
	Endangered species	None		
	Fire outbreak (2019)	None		
	Additional Information *	Berdasarkan Forest Cover 2016 dari KLHK, lokasi terdeforestasi terletak di hutan sekunder dan berbatasan dengan kawasan HP (Hutan Produksi).		

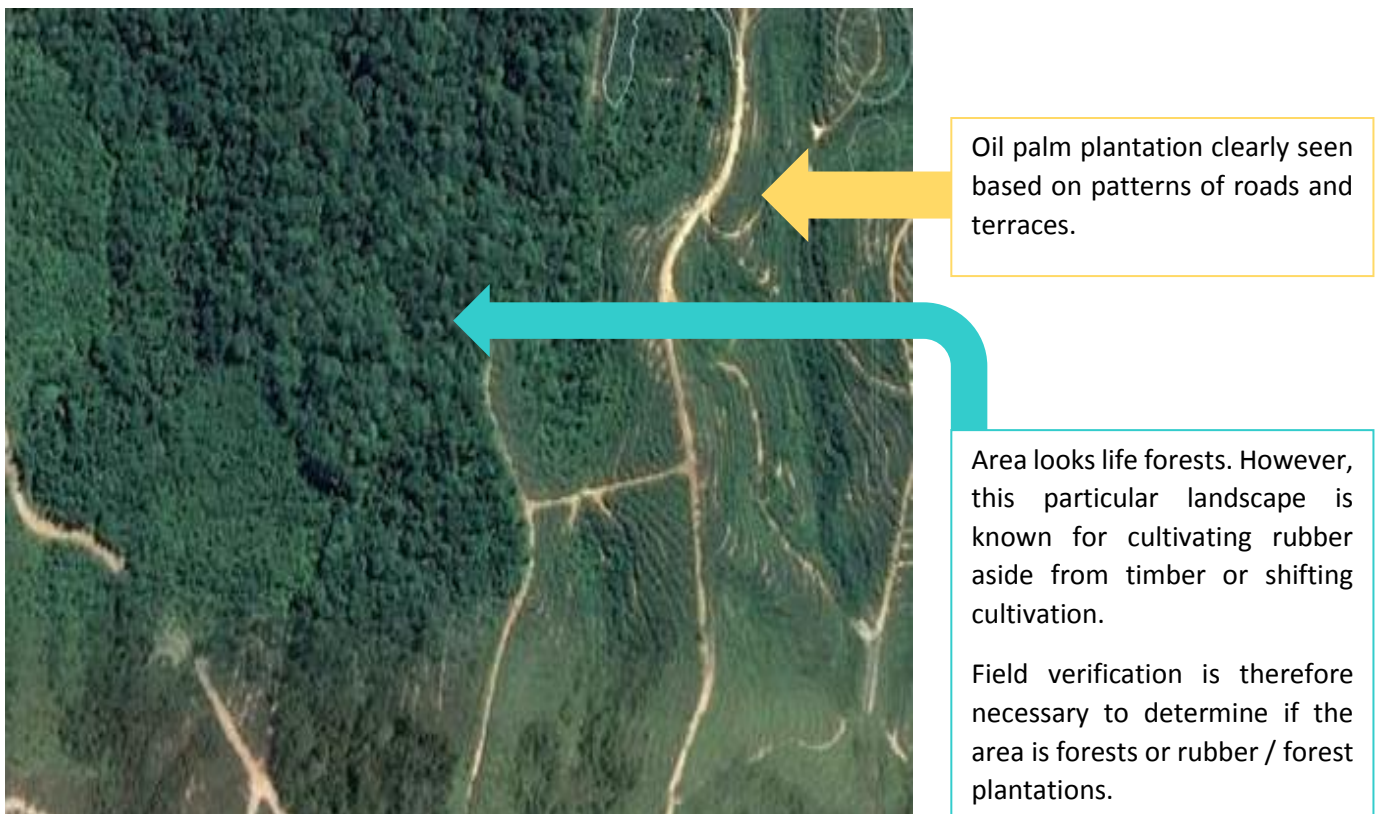
**Figure 1:** Sample of a monitoring report received under Wilmar's Supplier Group Compliance Program. The company is not in Wilmar's supply chain.

## **1. Ownership**

Knowledge of land / concession ownership and management oversight, as well as the accuracy of these boundary maps, are crucial when addressing information received related to deforestation and fires, among others. Without these reference points, further investigation, intervention or action related to deforestation alerts or data received from satellite monitoring platforms such as [Global Forest Watch](#) (GFW), [Starling Verification](#) or [Kepo Hutan](#) by Greenpeace cannot be carried out, regardless how precise is the satellite imagery. Similarly, the ability to identify and engage with land owners / managers is essential when dealing with prevention, early detection or rapid response for fires outside of concession boundaries.

## **2. Baseline Information Related to Previous Land Types and Land-Use Change**

Viewing satellite images in retrospect can be challenging as past images are not necessarily in the best resolution or quality. It is crucial to be able to refer to or verify changes that have taken place in the affected area to gain the best insight, especially in areas with historical cultivation of agricultural crops such as rubber, cocoa, overgrown coconut and so on. Without verification as part of the process, a retrospective satellite image is essentially a photograph of the past. You can guess what it was like, but it is still a guess.

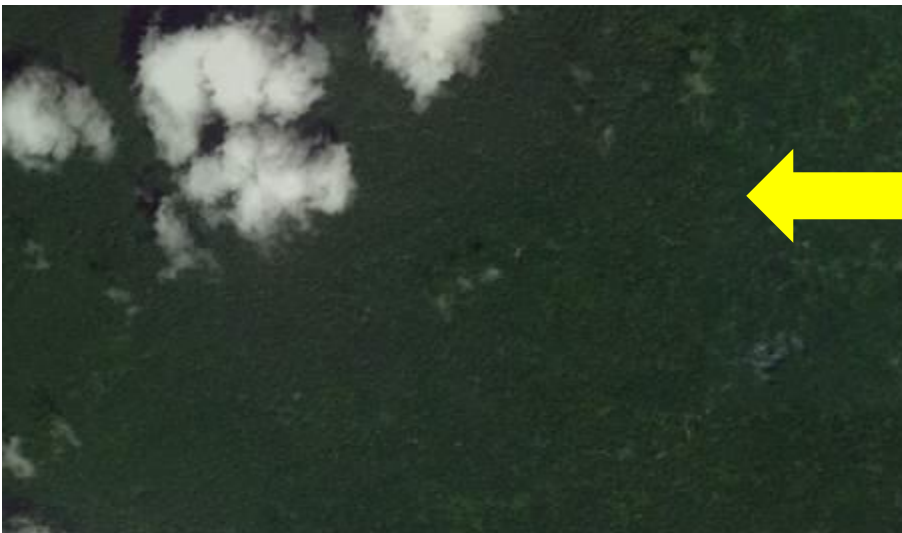


**Image 1:** Sample of a satellite imagery that requires ground verification for land-use changes





**Image 2:** Sample of a satellite imagery with poor resolution



View of Danum Valley, which is a protected forest in Sabah, Malaysia.



Area appears similar to forests. However, it is a mixed landscape with rubber plantations.

**Image 3:** Comparison between primary forests and mixed landscape with rubber plantations, which appear somewhat similar.

## **LIMITATIONS OF SATELLITE TECHNOLOGY**

Satellite imagery has been an effective tool in monitoring deforestation for the palm oil industry, but as with all tools, there are limits to the technology. It is less effective in monitoring of new peatland development and unsuccessful in identifying issues related to exploitation or violations of human or labour rights.

Focusing on peatland development, satellite imagery has thus far not been able to penetrate or identify the varying soil layers to detect types of peat. Therefore, monitoring of peatland development must be supplemented with accompanying information from soil assessments as well as government-based gazettement of peat areas.

## **LIMITATIONS OF PRIVATE SECTOR INITIATIVES**

Wilmar used satellite imagery to determine the impact of mills adjacent to deforestation-prone areas as part of our initial mill risk prioritization efforts when publishing the [list of all our supplying mills](#) in 2015, which was the first such initiative in the palm oil industry. Identifying and understanding the types of risks and impacts around our supplying mills allowed us to determine the type of support required by our suppliers' mills to further improve their own sustainability practices and requirements, including environmental compliance and labour conditions.

However, identifying land-use changes surrounding mills through satellite imagery could not translate to action or intervention if the deforestation occurred outside of the related mill's boundaries of influence and control. This is especially more challenging when the land-use changes in question are not related to their own operations.

Among the primary challenges faced by private sector is that the targeted transformation of the supply chain towards more responsible and sustainable practices are confined by the presence of an existing or potential business relationship. Removing non-compliant suppliers from our supply chain will ensure that we continue to be committed to our sustainability commitments. However, it also removes any influence that we have on these suppliers and therefore, disallowing us from guiding them towards transforming their existing practices to one that is more sustainable.

Wilmar has excluded over one million metric tonnes of palm oil<sup>2</sup> from our supply chain over the last five years due to non-compliance to our [No Deforestation, No Peat, No Exploitation](#) (NDPE) policy. However, these same volumes have still managed to find its way into the larger palm oil markets through other actors who have lower or no sustainability commitments in place.

It is therefore vital that development, implementation and enforcement of government policies and regulations are also essential towards halting deforestation, aside from supporting forest conservation and protection efforts.

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<sup>2</sup> Page 39, <https://ir-media.wilmar-international.com/app/uploads/2019/05/Wilmar-Sustainability-Report-2018.pdf>

An unfortunate example is when the Brazilian government reversed its previous stand and related policies meant to tackle deforestation, therefore resulting in an expected increase in deforestation cases in the country. This was well documented in an article published by Mongabay on 25<sup>th</sup> June 2019, titled, "[Satellite Data Suggests Deforestation on the Rise in Brazil](#)".

At the same time, Wilmar has channelled significant resources into landscape-level sustainability initiatives, including the Malaysian state of Sabah's jurisdictional certification process as well as the conservation efforts by the [Palm Oil and NGO \(PONGO\) Alliance](#). The aim of our efforts is to play our part in positively influencing change in land-use planning and to protect critical areas such as forests and peatlands within the framework of national and local laws and regulations.

## **CONTINUING EFFORTS IN REMOVING DEFORESTATION FROM OUR SUPPLY CHAIN**

Wilmar had launched their NDPE policy in December 2013 with minimal pressure from non-governmental organizations (NGOs) at the time due to the belief that sustainability is Wilmar's business model. Wilmar's commitment was, and still is, a massive undertaking as it is applicable to their suppliers at group-level.

Striving to transform the industry through Wilmar's influence in the industry continues to be a challenge that we have to overcome, especially after January 2019 when we introduced more stringent requirements towards ensuring continued and greater compliance. However, despite our best efforts, Wilmar still became the focus of campaigns against deforestation in the palm oil industry; having been constantly singled out despite all our ongoing work to meet our sustainability commitments while other industry players with lesser or even no commitments continue to slip through the cracks.

Rising up to challenge, in December 2018, we rallied and persevered by reaffirming our commitment to break the link between oil palm cultivation with that of deforestation, peatland development and social conflict. Wilmar, together with Aidenvironment and supporting consumer goods companies, issued a [Joint Statement](#) detailing our new supplier monitoring and engagement programme, to really help deliver a deforestation-free palm oil supply chain.

Merely relying on satellite imagery only allows organizations to continue to blame the industry while not addressing actual solutions on the ground. The focus on satellite imagery seems to be an easy win but what is needed is continual supplier engagement and ground verification while gaining a better understanding about the factors driving deforestation outside our and our suppliers' concessions.