






# Beyond the Myths about Indonesia's Deforestation

linking oil palm cultivation to forest degradation and  
assessing their impacts on Sustainable Development  
Goals

Ir Ing Bart W van Assen  
KAYON – each tree matters  
Bogor, Indonesia

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## Introduction

“almost intact tropical forests were depleted in very recent times (<30 years) to  
leave space for oil palm plantations”

Cazzolla Gatti & Velichevskaya 2020 Certified “sustainable” palm oil took the place of endangered Bornean and Sumatran large mammals habitat...

“They take the best rain forest in the world and change it into a sole less landscape  
of palm oil within a matter of weeks, with brutal efficiency. Anything in its way gets  
crushed, killed and discarded.”

Jones (2012) Spotlight Sumatra - The Final Chapter

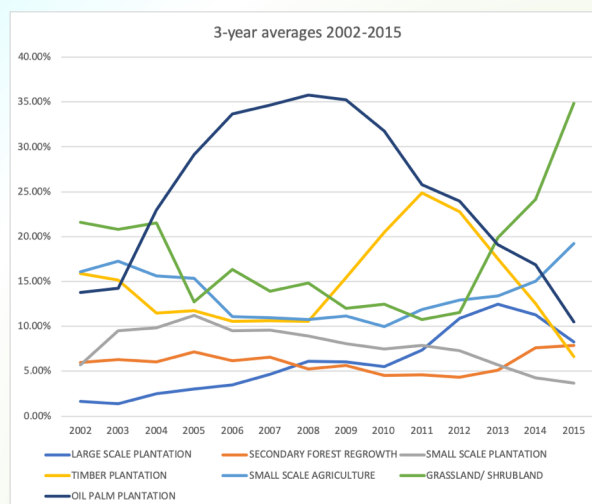
- General public: key driver for deforestation worldwide, in particular Indonesia and Malaysia
- European Parliament: banned the use of palm oil in biofuel under its Renewable Energy Directive in 2019

## Introduction

“the numbers provided by the [European Commission] show that only 2.3% of global deforestation in the given period can be attributed to palm oil”

Hinkes 2019 Adding (bio)fuel to the fire

- science disagrees:
  - oil palm was the main driver a decade ago
  - now smallholder agriculture and abandoned lands



Austin et al (2019) What causes deforestation in Indonesia?

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## Introduction

### Identify the “forgotten” D in REDD: forest degradation

- Does the visual scaler of forest degradation below allow for the identification of forest degradation in areas that are now now oil palm estates



Hasan et al 2017 The use of Landsat time series for identification of forest degradation levels in the eastern Brazilian Amazon (Paragominas)

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## Material and Methods

- visual assessment of 1984-1992-2000-2008-2016 Historical Imagery
- cross-referenced against previous land cover change
- modelled the impacts of land cover change on SDG12 and SDG15



agricultural mosaic, Kalimantan (Indonesia)

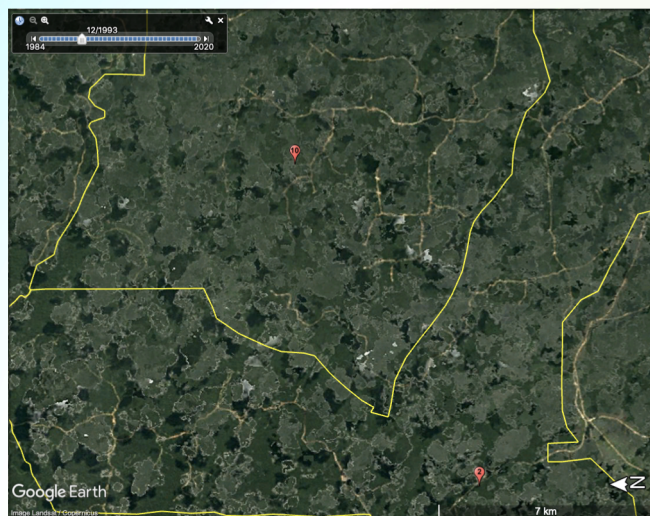
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## Results and Discussion

### Inconsistent quality of Historical Imagery

- Older Historical Imagery based on resolutions of 15-60 meters, more recent imagery on resolutions down to 1½-2½ meters
- 1984, 1992 and 2008 contain an abundance of clouds and shadows
- Multiple layers of erased clouds can appear to be intact rainforest to the untrained eye



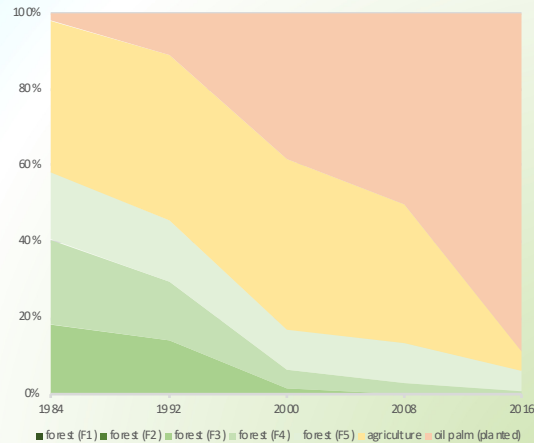
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## Results and Discussion

### land cover changes 1984-2016

- half of the area had forest cover in 1992 (prior to land clearing)
- none of these forests were (near) intact rainforest (F1-F2)
- expansion shifts from forest cover to agriculture cover around 2008
- about 15% of the forest cover remained in 2016



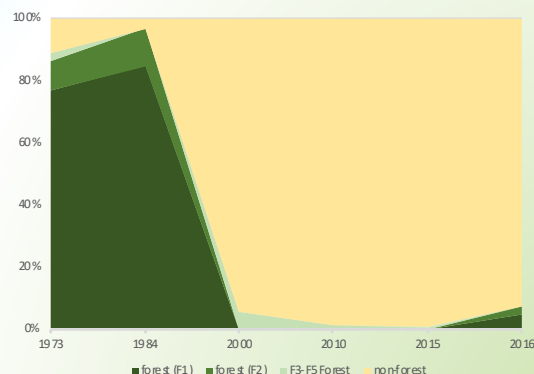
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## Results and Discussion

### Triangulation against independent sources

- 5 independent sources used:
  - Gaveau et al 2016: 1973, 2016
  - Cazzola Gatti & Velichevskaya 2020: 1984, 2016
  - Global Forest Watch 2019: 2000
  - Greenpeace et al 2018: 2000, 2018
  - Margono et al 2014: 2000, 2010



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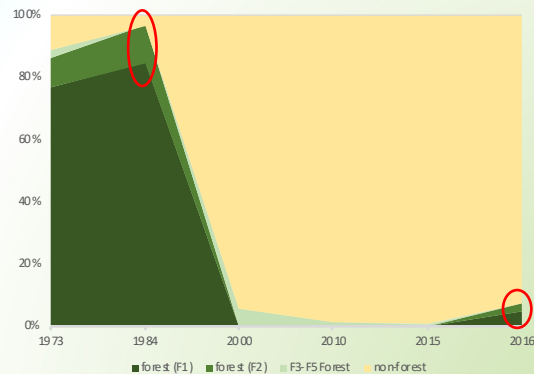
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## Results and Discussion

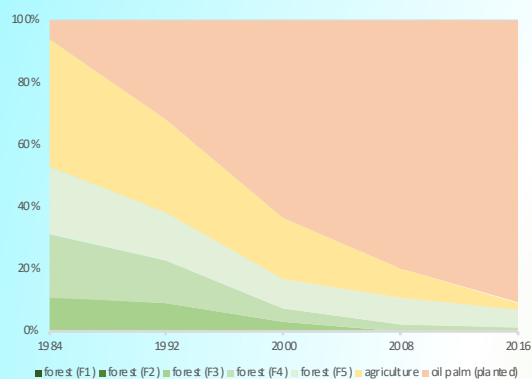
### Triangulation against independent sources

- 5 independent sources used:
  - Gaveau et al 2016: 1973, 2016
  - Cazzola Gatti & Velichevskaya 2020: 1984, 2016 (**outlier**)
  - Global Forest Watch 2019: 2000
  - Greenpeace et al 2018: 2000, 2018
  - Margono et al 2014: 2000, 2010

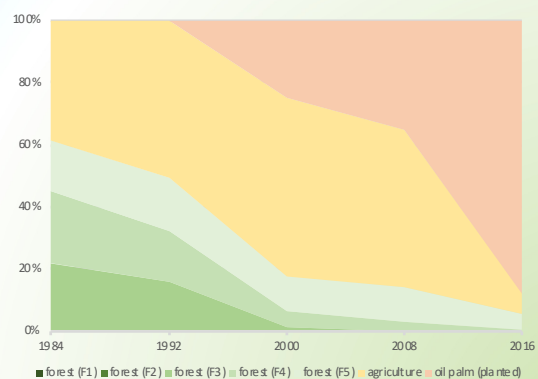


## Results and Discussion

### Land cover change Kalimantan

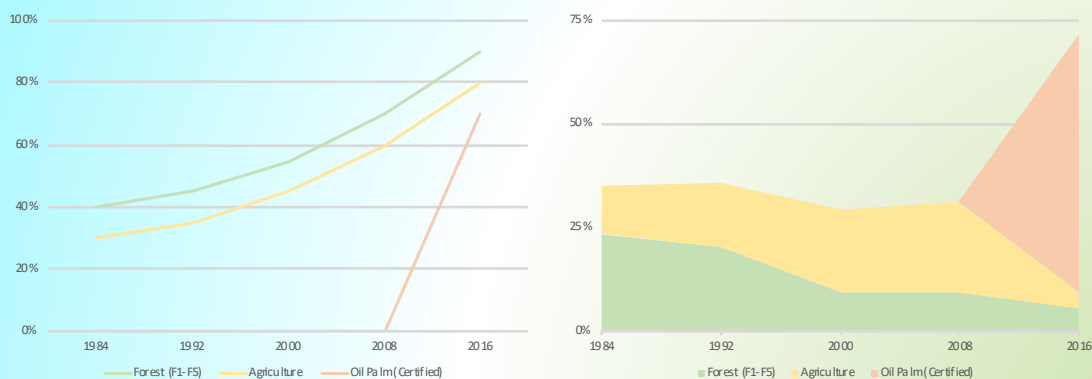


### Land cover change Sumatra



## Results and Discussion

### Impacts on SDG12 (Responsible Consumption and Production)

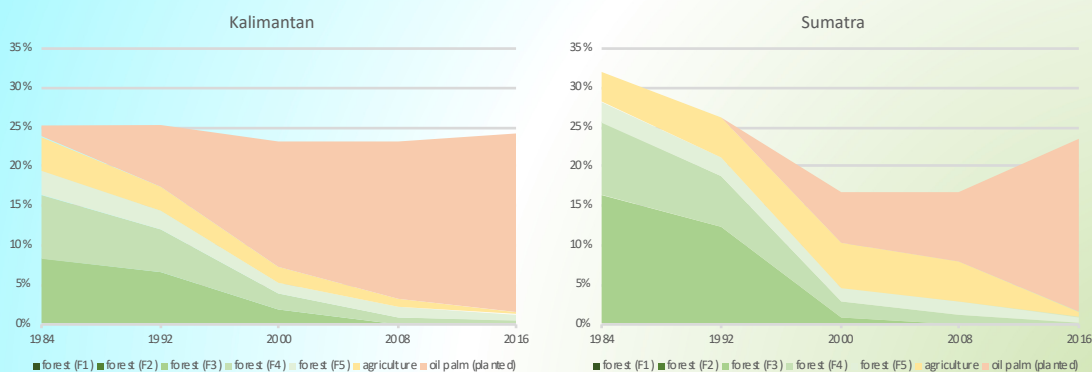


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## Results and Discussion

### Impacts on SDG15 (Life on Land)



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## Conclusions

- Negative short-term impacts followed by recovery on SDG15 (Life on Land) are observed
- Positive short- and long-term impacts on SDG12 (Responsible Consumption and Production) are observed
- Historical Imagery can be used to assess land cover changes, but easily abused to support populist agendas and false narratives
- oil palm cultivation did not convert “almost intact tropical forests” (Cazzola Gatti & Velichevskaya 2020)
- Indonesia’s policies related to forest conservation/management and oil palm cultivation appear effective and can be mirrored in other commodities/sectors