

ZURICH UNIVERSITY OF APPLIED SCIENCES
SCHOOL OF LIFE SCIENCES AND FACILITY MANAGEMENT
INSTITUTE OF NATURAL RESOURCE SCIENCES

**Quantification of deforestation on Borneo in the last 20 years based
on open source geodata**

Bachelor Thesis

HS23

by

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BSc Environmental engineering

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Alooideae, genetic diversity, in-silico, sequence alignment

Abstract

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Table of contents

| | | |
|----------|--|-----------|
| 1 | Introduction | 4 |
| 2 | Literature review | 5 |
| 2.1 | RSPO | 5 |
| 2.2 | Deforestation | 6 |
| 2.3 | Infrastructure | 6 |
| 2.4 | State of the art analysis | 6 |
| 2.5 | oil palm (<i>latin name</i>) | 6 |
| 3 | Method | 7 |
| 3.1 | Data Collection | 7 |
| 3.1.1 | Data Source | 7 |
| 4 | Results | 8 |
| 5 | Discussion | 11 |
| 6 | References | 12 |
| | List of Figures | 12 |
| | List of Tables | 12 |
| | Annex | |

1 Introduction

2 Literature review

2.1 RSPO

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Figure 2.1: Example Picture 2

For more information, refer to the literature review (Chapman et al., 2020; Descals et al., 2021).

Table 2.1: mycaption

| Car | MPG | Cylinders |
|----------------|------|-----------|
| Mazda RX4 | 21 | 6 |
| Mazda RX4 Wag | 21 | 6 |
| Datsun 710 | 22.8 | 4 |
| Hornet 4 Drive | 21.4 | 6 |

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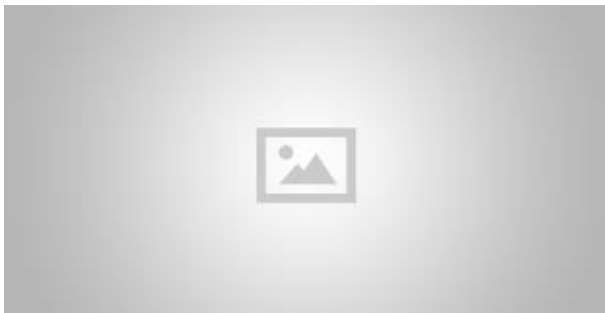


Figure 2.2: Example Picture on the left

2.2 Deforestation

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2.3 Infrastructure

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2.4 State of the art analysis

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2.5 oil palm (*latin name*)

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3 Method

3.1 Data Collection

3.1.1 Data Source

The data used in this analysis was obtained from the `mtcars.csv` file. This file contains data on various car models, including their miles per gallon (mpg), number of cylinders, horsepower, and other characteristics. (see Table 3.1)

Table 3.1: mycaption

| Car | MPG | Cylinders |
|----------------|------|-----------|
| Mazda RX4 | 21 | 6 |
| Mazda RX4 Wag | 21 | 6 |
| Datsun 710 | 22.8 | 4 |
| Hornet 4 Drive | 21.4 | 6 |

4 Results

4.0.0.1 Questions

4.0.0.2 General Forest loss

1. How much forest area was lost yearly and in total?
2. How much forest area was lost due to forest fires yearly and in total?
3. How much new build up areas was created on forest loss areas (2020 compared to 2000)?
4. How much new build up areas was created on forest-fire loss areas (2020 compared to 2000)?
5. How much forest gain (area) occurred on forest fire areas (2001 - 2012)?
6. How much forest was lost in protected areas yearly? → carry out all of them with primary forests as well

4.0.0.3 Oil Palm related

1. How much new oil palm plantation area occurred yearly on forest fire areas?
2. How much new oil palm plantation area occurred yearly on non-forest deforested areas?
3. How much new oil palm plantation area occurred yearly on deforested areas?
4. How much new oil palm plantation area occurred in protected areas?
5. How much new oil palm plantation area occurred on non-forest area? (compared to year 2000 forest cover)
6. How much new oil palm plantation area occurred on previous cropland (and other way around)?
7. How much forest area was gained on previous oil palm plantation area yearly (2000 - 2012)?
8. How much area was used for other crops prior to oil palm plantation, and which?
9. How much area was used for oil palm plantation prior to other crops, and which?

4.0.0.4 Build up areas

1. How much new build up area occurred in forest covered area (2020 compared to 2000)?
2. How much new build up area occurred in non-forest covered area (2020 compared to 2000)?
3. How much new build up area occurred in forest fire area (2020 compared to 2000)?
4. How much new oil palm plantation area occurred within 1, 2, 5, 10, and 20 km of newly build up areas?
5. How much forest area was lost to forest fires within 1, 2, 5, 10, and 20 km of newly build up areas?
6. How much forest area was lost to non-forest fires deforested areas within 1, 2, 5, 10, and 20 km of newly build up areas?
7. How much forest area was lost to cropland areas within 1, 2, 5, 10, and 20 km of newly build up areas?

4.0.0.5 RSPO

???

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Figure 4.1: Multiple pictures!

For more information, refer to the literature review (Chapman et al., 2020; Descals et al., 2021).

Table 4.1: mycaption

| Car | MPG | Cylinders |
|----------------|------|-----------|
| Mazda RX4 | 21 | 6 |
| Mazda RX4 Wag | 21 | 6 |
| Datsun 710 | 22.8 | 4 |
| Hornet 4 Drive | 21.4 | 6 |

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5 Discussion

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In March 2020, the RSPO made the concession map available for download, with the exception of Indonesia . Although it states that Indonesian concessions will be available in the coming weeks, 3 years later, they remain incomplete (RSPO, 2020).

6 References

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List of Figures

| | | |
|-----|---------------------------------------|---|
| 2.1 | Example Picture 2 | 5 |
| 2.2 | Example Picture on the left | 5 |
| 4.1 | Multiple pictures! | 9 |

List of Tables

| | | |
|-----|---------------------|---|
| 2.1 | mycaption | 5 |
| 3.1 | mycaption | 7 |
| 4.1 | mycaption | 9 |

Annex

Annex I

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