

# Examples and definitions for the Drivers of Tropical Forest Loss crowdsourcing campaign

International Institute for Applied Systems Analysis (IIASA)  
December 9<sup>th</sup>, 2020

## Drivers of tropical forest loss: Definitions

**Step 1** – Please select the **predominant** tree loss driver visible **inside the tree loss pixels** in the **blue box**

- **Subsistence agriculture:** Relatively small fields (typically less than a quarter of the blue box), sometimes without defined borders. Includes agroforestry (combined trees and annual crops) in small fields, shifting cultivation (e.g., abandoned or burnt fields, fallow, bushes). Also includes mixed systems, where small crop fields, small scale pastures and cattle, small patches of palms might be seen, e.g., in some countries in Africa. Time-series helps for identification.
- **Commercial agriculture:** Uniform/monoculture, large fields (typically larger than one quarter of the blue box), but sometimes they can be several small fields together or close by, all with the same land use. Includes permanent (tree-crops/fruit trees) or annual crops, e.g., citrus plantations, olive trees, vineyards, cereals, soybean, sugar cane, banana and cacao plantations. It also includes commercial aquaculture. Excludes oil palm plantations.
- **Commercial oil palm and other palms:** Includes oil palm and other palms such as coconut plantations in large sized fields or several small fields together.
- **Pasture:** Managed grasslands typically with signs of cattle around. May include sparse trees. Ponds of water with roads leading to or criss-crossing trails may be signs of pasture. No obvious agricultural management visible.
- **Managed forest/forestry:** Includes logging, timber plantations, managed forest and replanted forest. This class also includes rubber plantations.
- **Roads/trails/buildings:** Includes any built-up areas and infrastructure, as well as big and small roads or trails that may show human impact or urban expansion.
- **Mining and crude oil extraction:** Includes open mining, small regular oil extraction platforms and dams.
- **Wildfire:** A large (typically larger than the blue box) burnt area with irregular borders.
- **Other natural disturbances/no tree loss driver:** Drought, windthrow (trees uprooted by wind), flooding or no visible tree loss driver.

**Step 2** – Please select **all other** tree loss drivers visible **inside the tree loss pixels** in the **blue box**

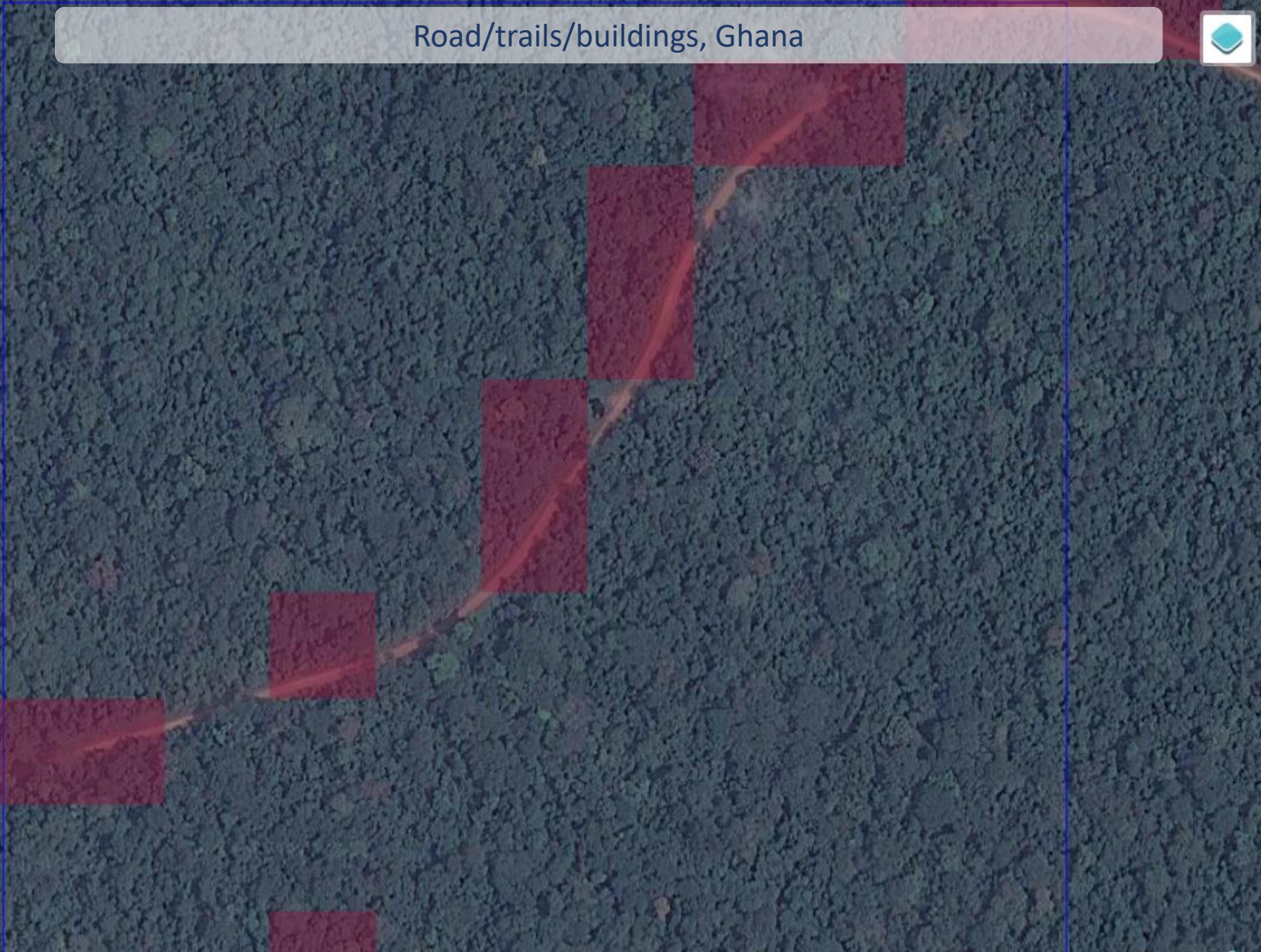
- **Agriculture/pasture:** Includes the categories commercial and subsistence agriculture, pasture but also commercial oil palm and other palm plantations
- **Managed forest/forestry:** Includes logging, timber plantations, managed forest and replanted forest. This class also includes rubber plantations.
- **Roads/trails/buildings:** Includes the categories roads/trails/buildings and mining and crude oil extraction
- **Natural disturbances:** Includes the categories wildfire and other natural disturbances
- **No other tree loss driver:** Select this if you think there are no, or no other, tree loss drivers visible

**Step 3** – Can you see roads, trails or buildings in the **blue box**? (Yes/No)





# Road/trails/buildings, Ghana



### STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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### STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

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### STEP 3:

Can you see roads, trails or buildings in the **blue box**

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**Comment:**

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# Roads/trails/buldings (urban expansion), Equatorial Guinea



## STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

Subsistence agriculture

Commercial agriculture

Commercial oil palm or other palm plantations

Pasture

Managed forest/forestry

Roads/trails/buildings

Mining and crude oil extraction

Wildfire (disturbance)

Other natural disturbances/No tree-loss driver

## STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

Agriculture/Pasture

Managed forest/forestry

Roads/trails/buildings

Natural disturbances

No other tree loss driver visible

## STEP 3:

Can you see roads, trails or buildings in the **blue box**

Yes

No

Comment:





# Other natural disturbance/No tree loss driver and a small trail, Tanzania



### STEP 1:

Please select the predominant tree loss driver visible inside the tree loss pixels in the blue box

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

### STEP 2:

Please select all other tree loss drivers visible inside the tree loss pixels in the blue box

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

### STEP 3:

Can you see roads, trails or buildings in the blue box

- Yes
- No

Comment:

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# Managed forest (plantation), some pasture and trails, Brazil



## STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry**
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

## STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture**
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

## STEP 3:

Can you see roads, trails or buildings in the **blue box**

- Yes**
- No

Comment:

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# Subsistence agriculture with trails/roads, Guatemala



Google Earth time-series show shifting cultivation

### STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

### STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

### STEP 3:

Can you see roads, trails or buildings in the **blue box**

- Yes
- No

Comment:





Managed forest (plantation) + pasture, Brazil



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

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**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

**Comment:**



# Subsistence agriculture (shifting cultivation) with trails, Madagascar



Google Earth time-series show shifting cultivation

### STEP 1:

Please select the predominant tree loss driver visible inside the tree loss pixels in the blue box

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

### STEP 2:

Please select all other tree loss drivers visible inside the tree loss pixels in the blue box

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

### STEP 3:

Can you see roads, trails or buildings in the blue box

- Yes
- No

Comment:

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## Subsistence agriculture, Ivory Coast



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

Yes  No

**Comment:**

Small fields with oil palm are part of mixed systems (likely to be encountered in some countries in Africa)





# Commercial agriculture (coffee plantation), Brazil



LMG-836  
State of Minas Gerais

Google

Street View

Google Streetview pictures

### STEP 1:

Please select the predominant tree loss driver visible inside the tree loss pixels in the blue box

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### STEP 2:

Please select all other tree loss drivers visible inside the tree loss pixels in the blue box

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### STEP 3:

Can you see roads, trails or buildings in the blue box

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Comment:

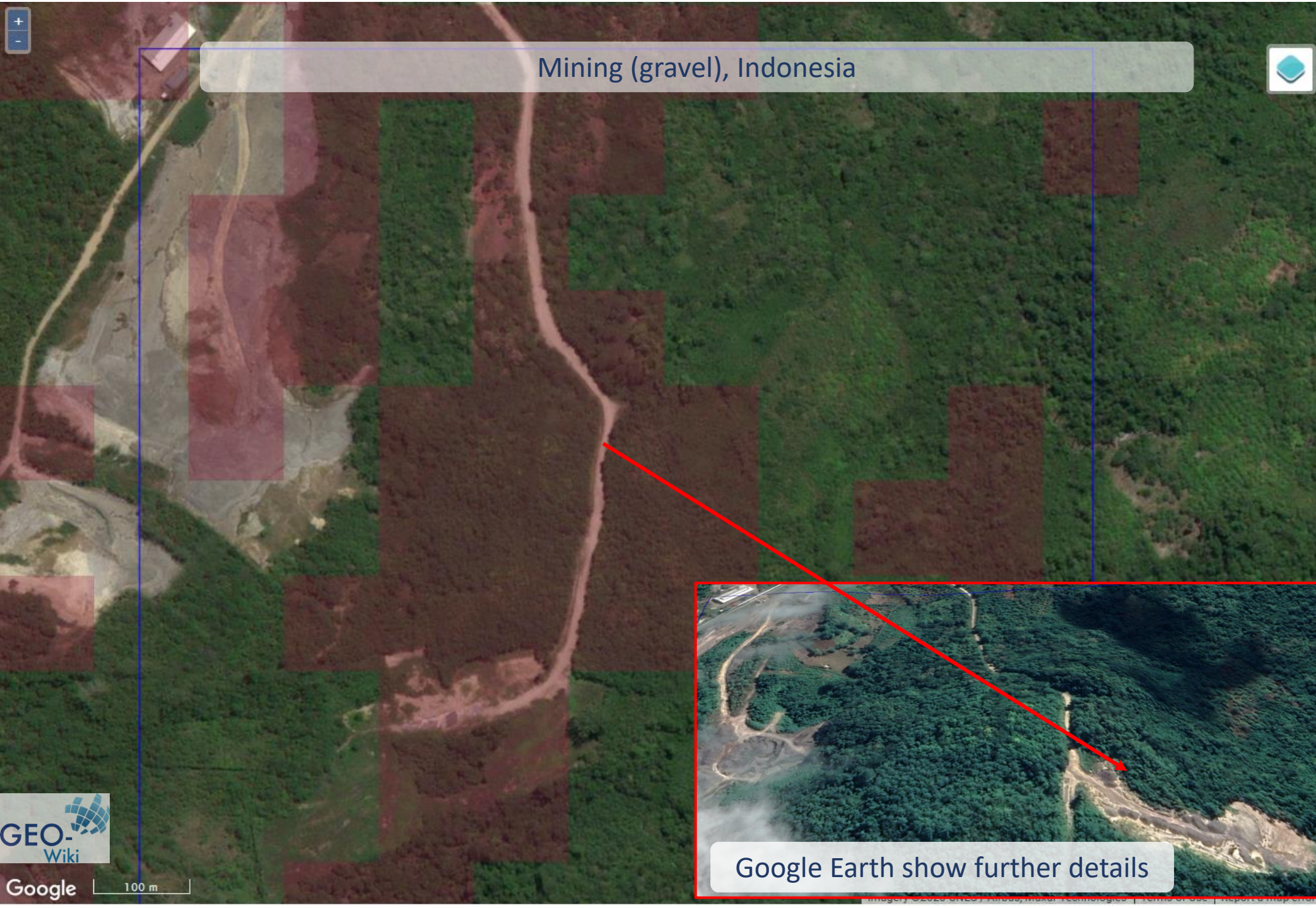
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# Mining (gravel), Indonesia



### STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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### STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

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### STEP 3:

Can you see roads, trails or buildings in the **blue box**

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Comment:

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Google Earth show further details



# Subsistence agriculture (terraces), Vietnam



Terrain and detailed view in Google Earth

### STEP 1:

Please select the predominant tree loss driver visible inside the tree loss pixels in the blue box

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

### STEP 2:

Please select all other tree loss drivers visible inside the tree loss pixels in the blue box

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

### STEP 3:

Can you see roads, trails or buildings in the blue box

- Yes
- No

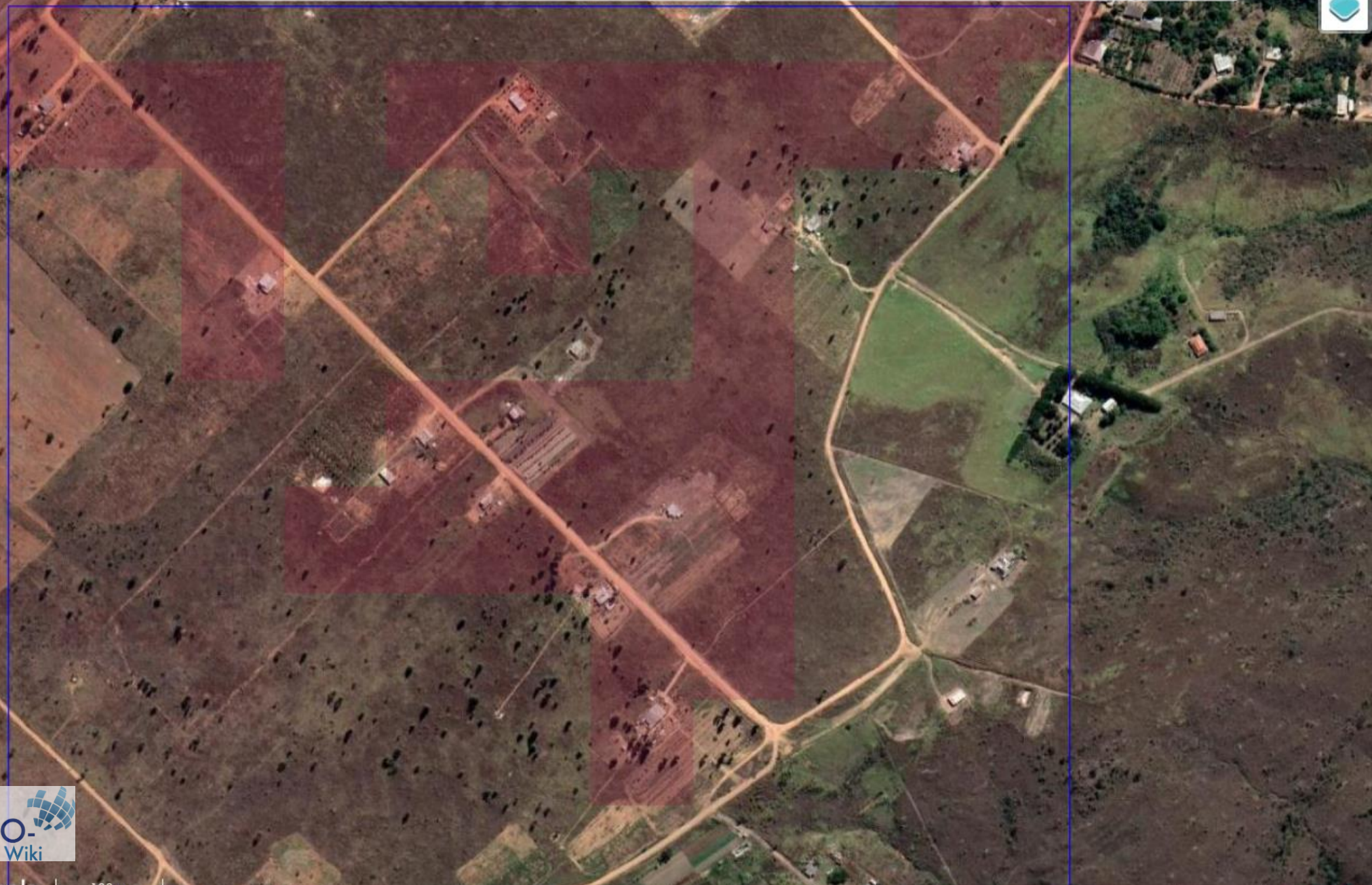
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# Urban expansion and agriculture, Brazil



## STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

## STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

## STEP 3:

Can you see roads, trails or buildings in the **blue box**

- Yes
- No

Comment:

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# Pasture , Brazil



Corrals and animals north of location

Use of the Sentinel time-series tool, recent images show that the forest has been cut and now the land is used as pastures



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture**
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible**

**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

Comment:  
Sentinel





# Pasture, Argentina



Animals and corrals (pens)



Google Earth image of 2010



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

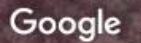
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**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

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**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

Comment:



100 m





# Mining, Indonesia



**STEP 1:**

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

**STEP 2:**

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

**STEP 3:**

Can you see roads, trails or buildings in the **blue box**

- Yes
- No

Comment:

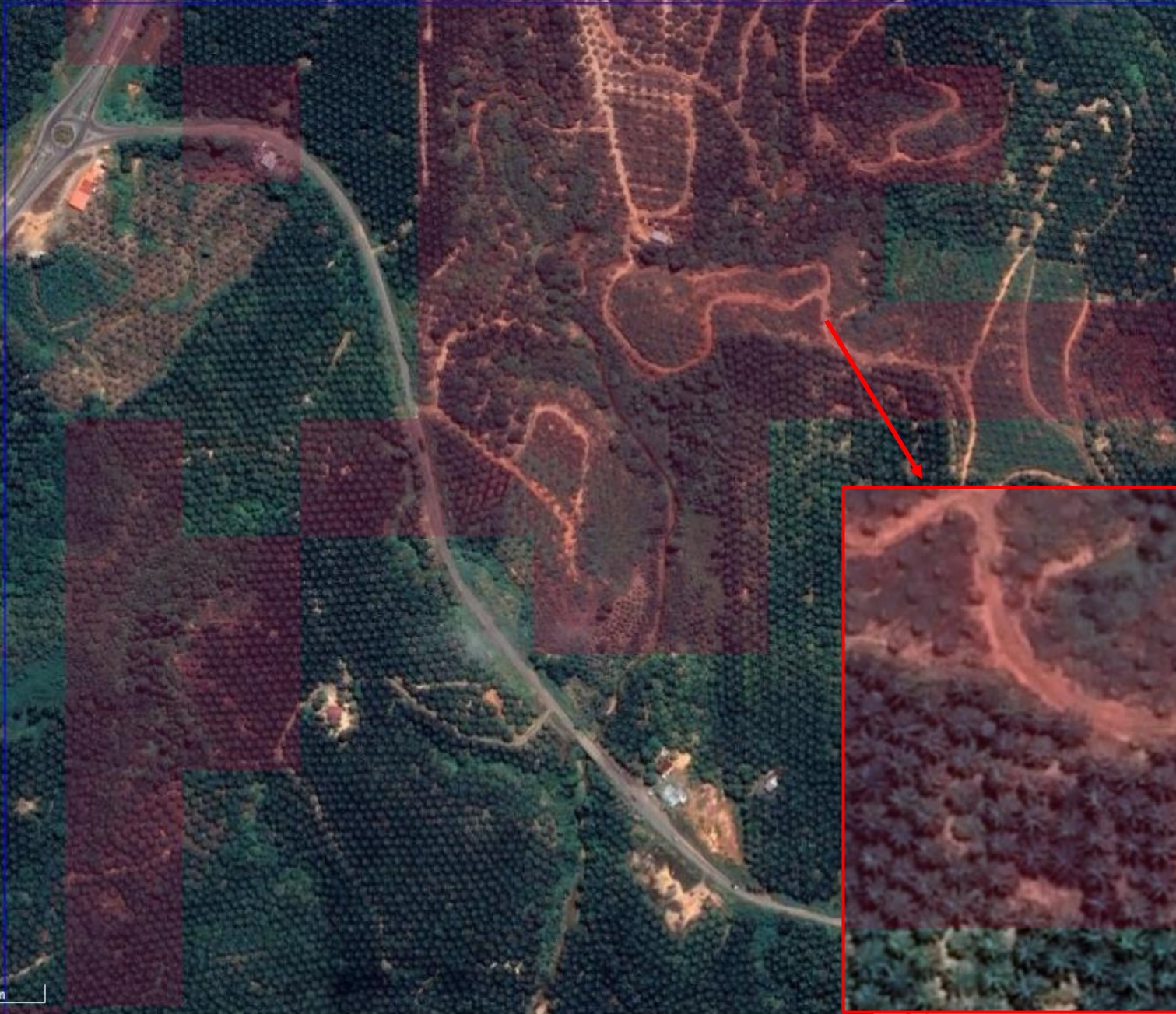
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# Commercial oil palm, Malaysia



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

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**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

**Comment:**



# Commercial agriculture (fruit tree plantations), Brazil



## STEP 1:

Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture**
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

## STEP 2:

Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings**
- Natural disturbances
- No other tree loss driver visible

## STEP 3:

Can you see roads, trails or buildings in the **blue box**

- Yes**
- No

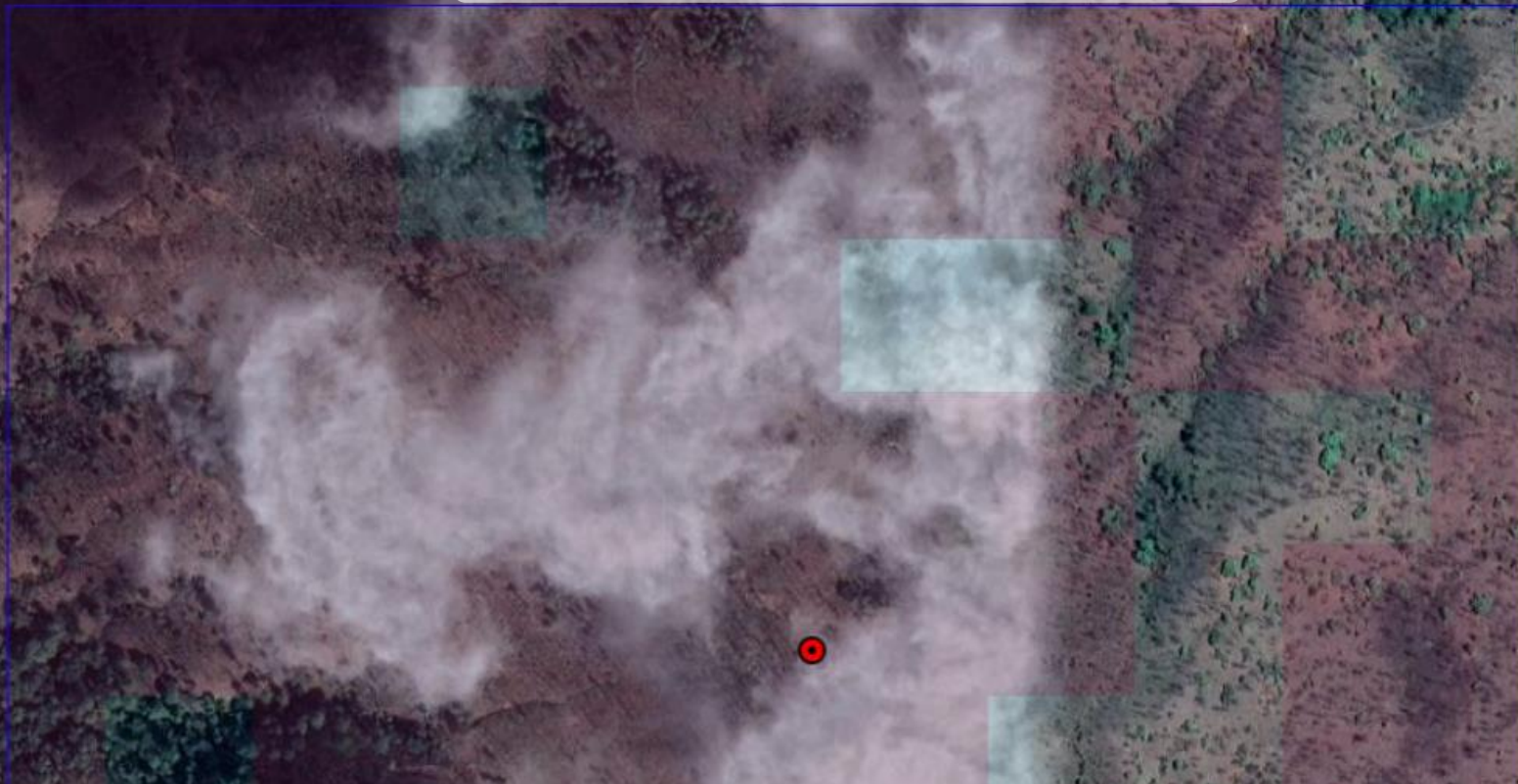
Comment:

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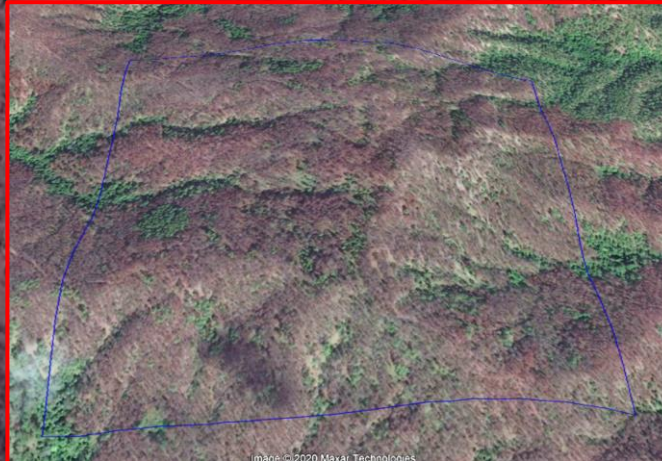


# Wildfire, Honduras



Google Earth Sep 2015

Google Earth Jan 2016



### STEP 1:

Please select the **predominant** tree loss driver visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
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- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

### STEP 2:

Please select **all other** tree loss drivers visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

### STEP 3:

Can you see roads, trails or buildings in the **blue box**

Yes  No

Comment:





# Commercial agriculture (sugarcane), Bolivia

- Google Maps Satellite
- Mapillary
- Bing Aerial With Labels
- Bing Aerial
- ESRI World\_Imagery
- Open Street Map

Comparing base maps

- Google Maps Satellite
- Mapillary
- Bing Aerial With Labels
- Bing Aerial
- ESRI World\_Imagery
- Open Street Map



Base maps

**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

- Subsistence agriculture
- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
- Other natural disturbances/No tree-loss driver

**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

Yes  No

Comment:



Google Earth picture (panoramio), showing distillery close to location and fields' structure behind it.



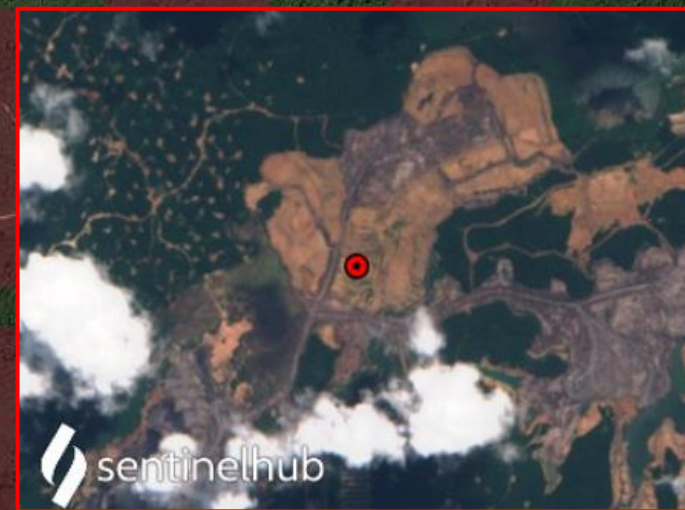
# Coal Mining, Indonesia



Pictures close by - Google Earth



Sentinel time-series



**STEP 1:**  
Please select the **predominant tree loss driver** visible inside the **tree loss pixels** in the **blue box**

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- Commercial agriculture
- Commercial oil palm or other palm plantations
- Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Mining and crude oil extraction
- Wildfire (disturbance)
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**STEP 2:**  
Please select **all other tree loss drivers** visible inside the **tree loss pixels** in the **blue box**

- Agriculture/Pasture
- Managed forest/forestry
- Roads/trails/buildings
- Natural disturbances
- No other tree loss driver visible

**STEP 3:**  
Can you see roads, trails or buildings in the **blue box**

Yes  No

**Comment:**

