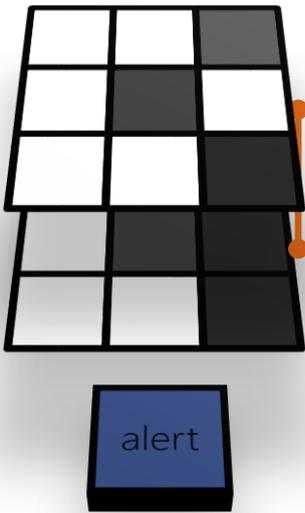


Monitoring the Bunge palm oil supply chain

During the full year of 2018 we have actively monitored Peninsula and Sabah in Malaysia, using satellites. Within Peninsula and Sabah we have mapped concessions with oil palm plantations, forest reserves, mills, and more supply chain related data.



In total a **20 Million hectares** of land is checked for land use change, by analyzing the difference between radar satellite images every two weeks. Together with **3 Million hectares of concession maps**, we monitor the entire Peninsula and Sabah landscape – regardless whether or not related to oil palm nor whether inside or outside our supply chain.

When a change is detected, it is verified against historic data (base-maps) to filter out false alarms such as change by replanting. Pixels that show land use change by deforestation are flagged as an **alert**.

All alerts are uploaded into our **GIS** platform. Here the alerts are prioritized and analyzed by multiple methods. One method is to check intersection of alerts with our mapped concessions, including a 2 kilometer buffer zone. Proximity is taken into account to monitor expansion.

Using our powerful GIS platform with forest maps, peat maps, and latest Sentinel-2 images we can be actionable on alerts that may link to the palm oil supply chain. Evidence and supporting information is stored in our continuously maintained database to be transparent.



Highest priority alerts fall within mapped concessions. During Q3 2018 a total area of 49 hectares of high priority alerts was detected, and we have been **100% responsive**:

- 78% is verified to be replanting (false positive alert)
- 20% is in process of verification by supplier
- 2% inaccuracy errors

Medium priority alerts fall within 2 km buffer zone of mapped concessions. Total area: 1,873 hectares (31% responsive).

Lowest priority alerts fall outside 2 km buffer zone of mapped concessions. Total area: 6,768 hectares (10% responsive)