Introduction of the Forest Governance Initiative and JICA-JAXA Forest Early Warning System in the Tropics (JJ-FAST)

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1. Forest governance initiative

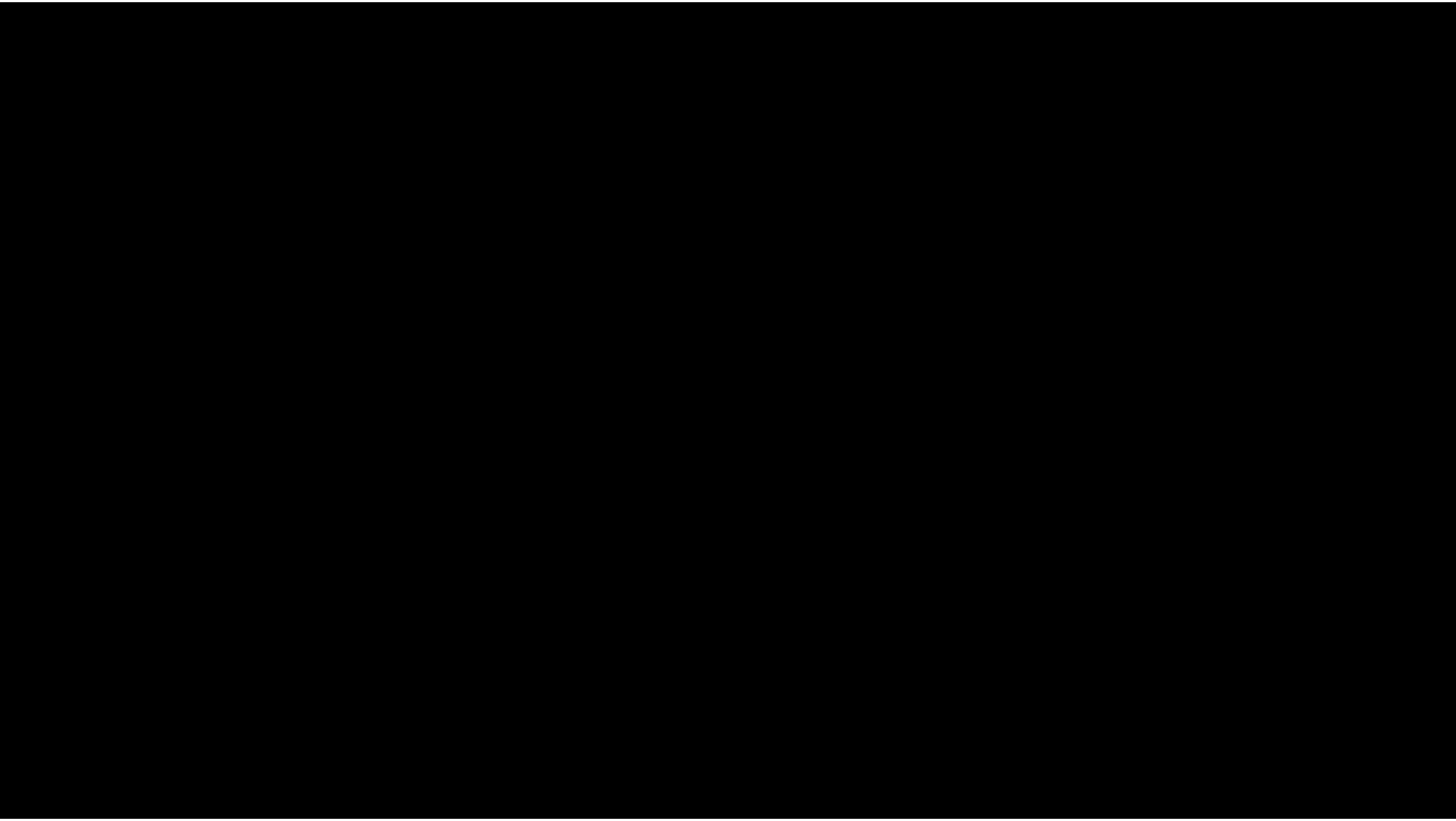
MOU between JICA-JAXA was signed in Apr. 2014 to contribute global issue using Japanese satellite technologies.

The new initiative for improvement of forest governance was officially released at the COP 21 in Dec. 2015.

The initiative aims to contribute to the global tropical forest and biodiversity conservation and climate change mitigation by using satellite technology and multi-stakeholder partnerships.

1. Forest governance initiative

2. Deforestation monitoring: JJ-FAST



[NHK World promotion video]

3. Satellite data: ALOS-2/PALSAR-2

Orbit altitude: **628km**

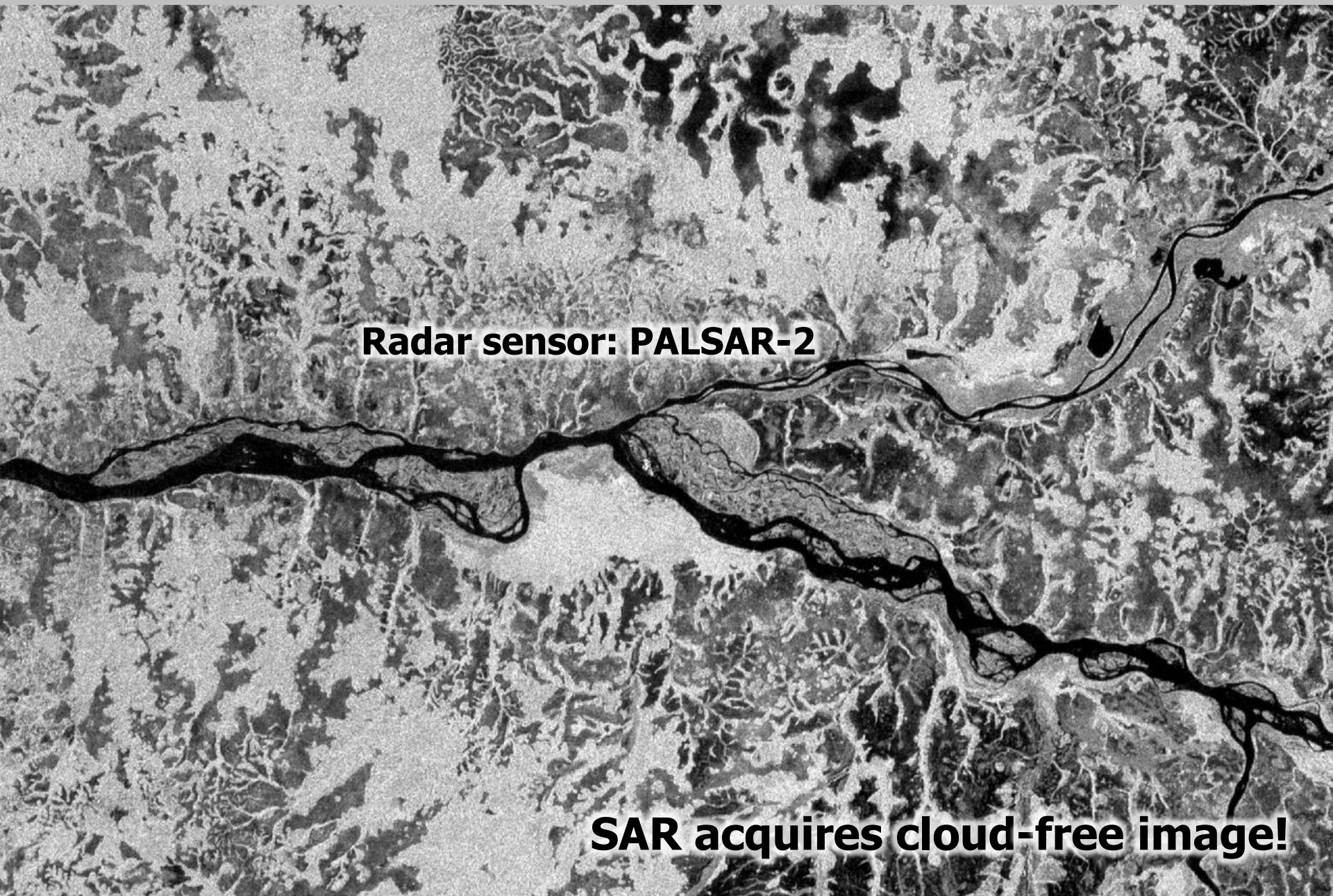
Launch: **May 24, 2014**

Lifetime: **5 years (7 years)**

Sensor: **Synthetic Aperture Radar (SAR)**

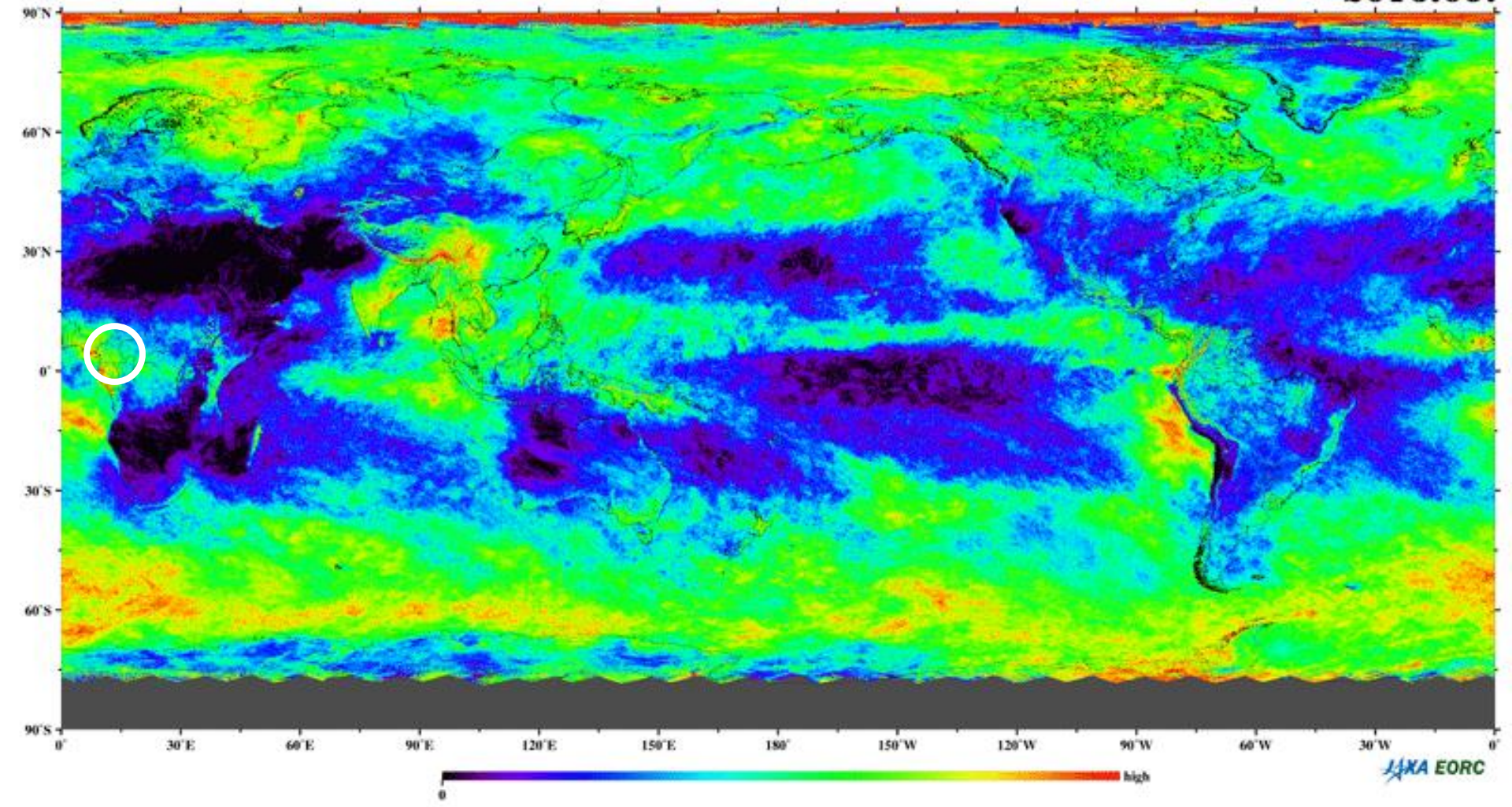
Observation mode: **Spotlight**
Strip
ScanSAR

4. Influence of cloud cover



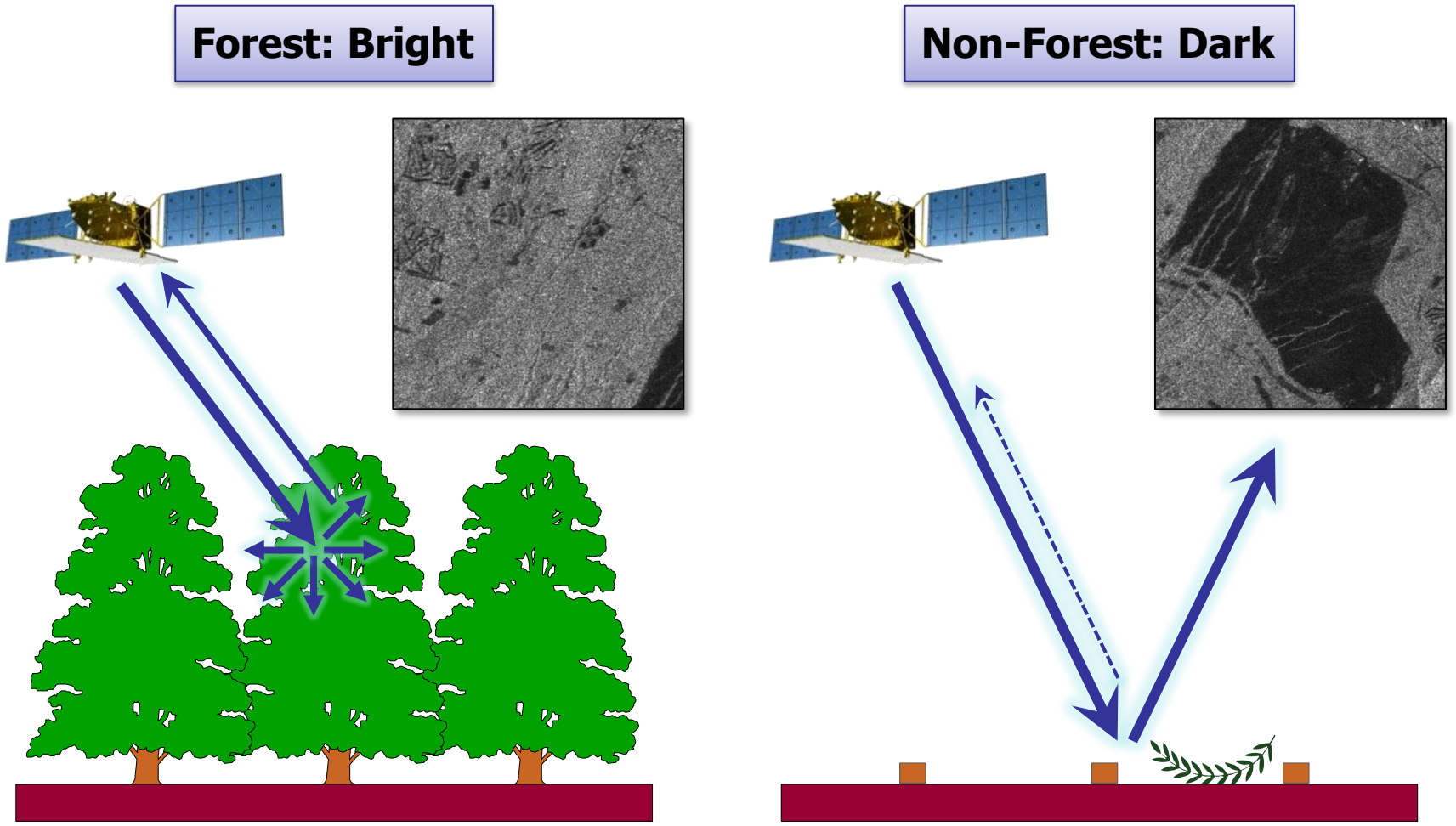
4. Influence of cloud cover

Global cloud-cover map



Vast forests are covered by cloud!

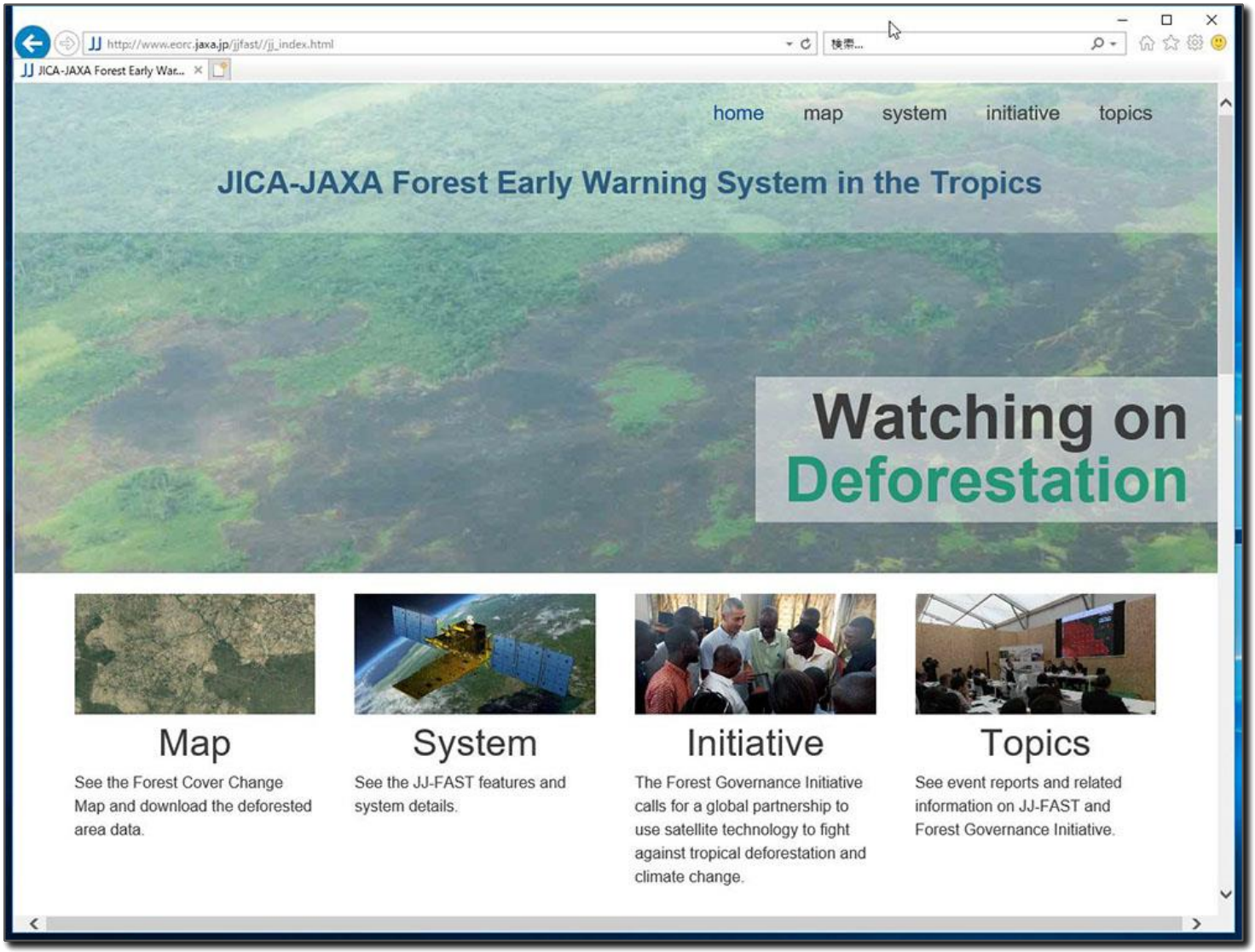
5. Deforestation detection



Dark change area represents deforestation!

Multiple methods are adopted for the detection.

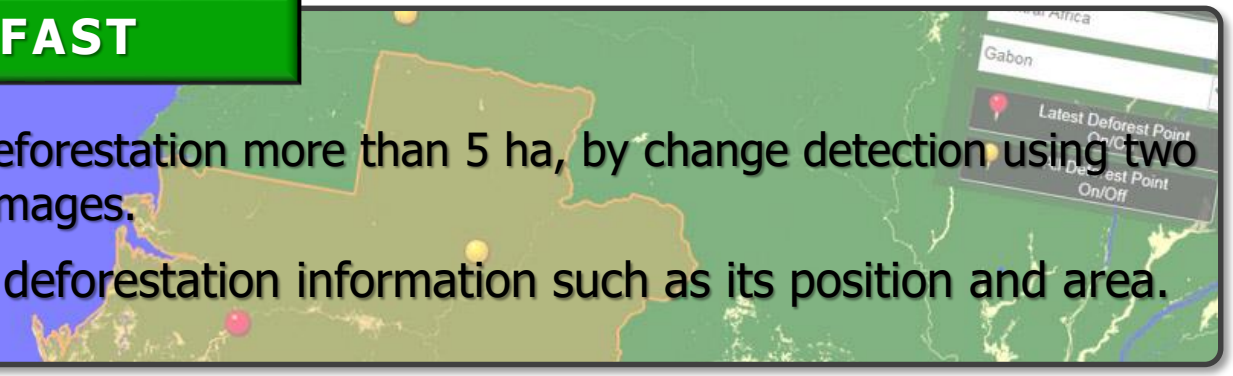
6. JJ-FAST website



Released in November 2016!

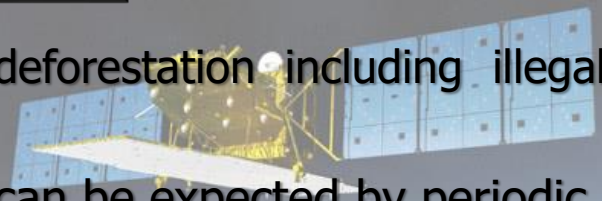
7. Outline of JJ-FAST

What is JJ-FAST



- It detects deforestation more than 5 ha, by change detection using two PALSAR-2 images.
- It provides deforestation information such as its position and area.

Objective of JJ-FAST



- Early warning of deforestation including illegal activity (every 1.5 months).
- Suppression effect can be expected by periodic open information.

Usage of JJ-FAST

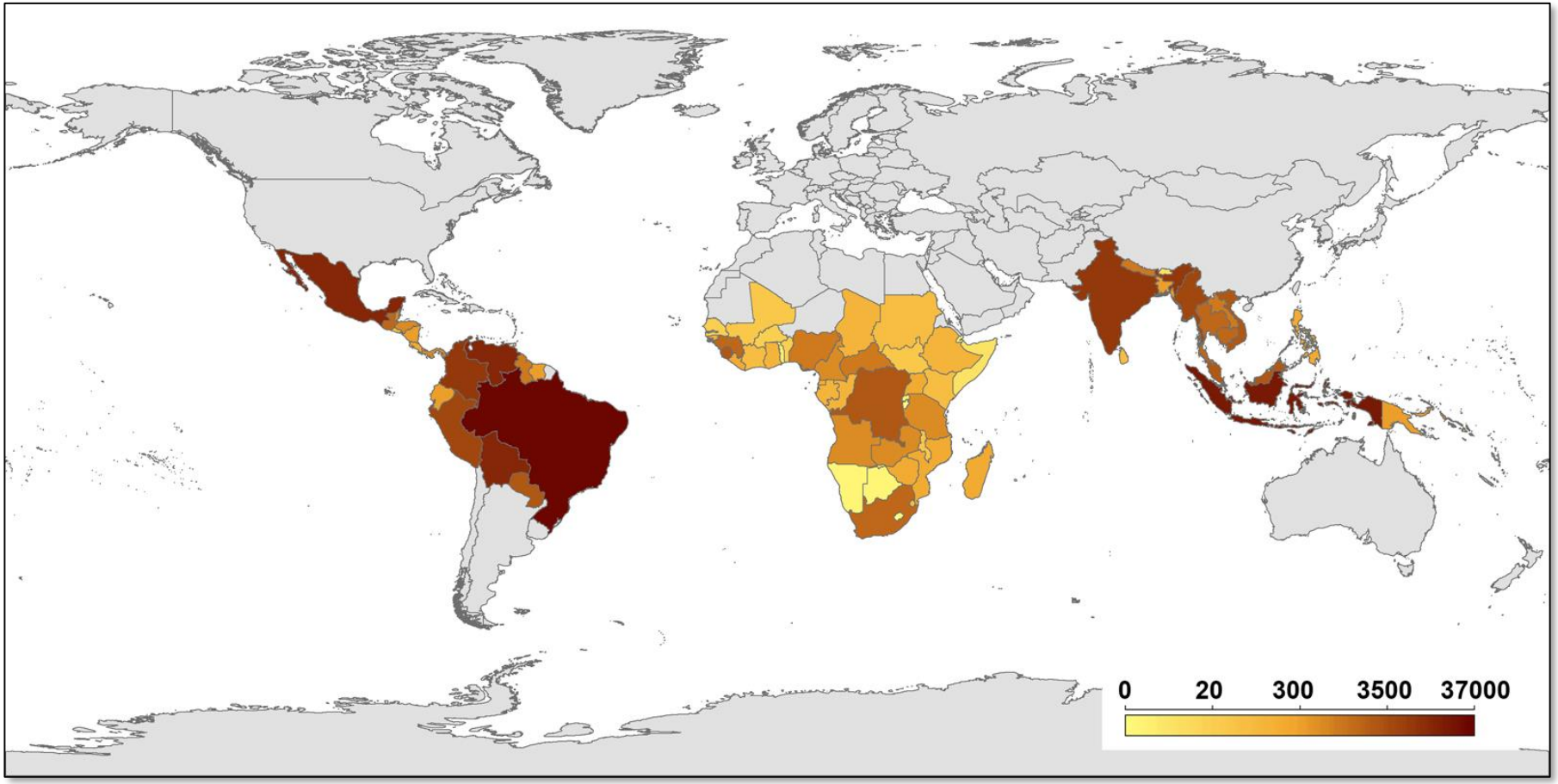
- User can download deforestation polygon.
- He can identify illegal activity by GIS analysis using land-use map or concession map.

7. Outline of JJ-FAST

Data source	**ALOS-2/PALSAR-2** (ScanSAR mode)
Target area	**77 countries**
Update	Every **1.5 months**
Characteristics	- **Global coverage**: almost all tropical forests. - **Cloud-cover area observation**: even in rain season. - **Fast web-page**: forester can use it in the field.

Target countries

8. Results of deforestation detection



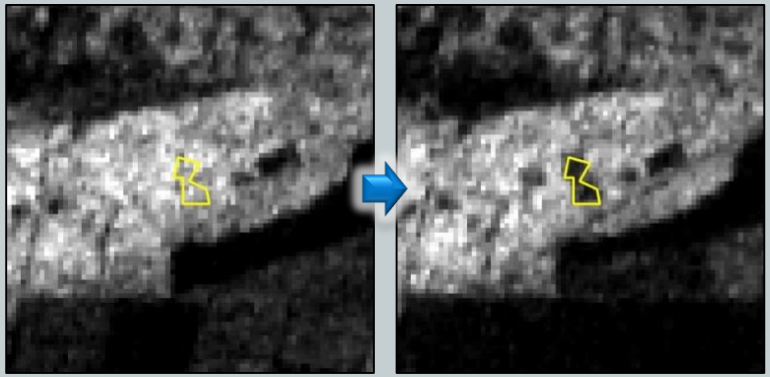
Number of deforestations until Aug. 2019.

Total: 146,132
Cameroon: 576

9. Examples of deforestation

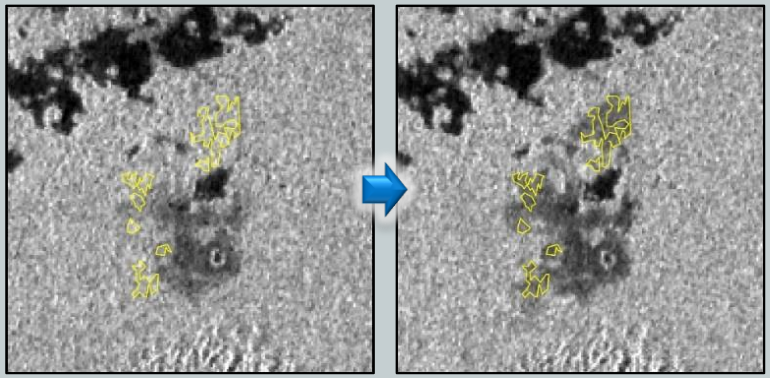
Botswana

Agricultural land development.



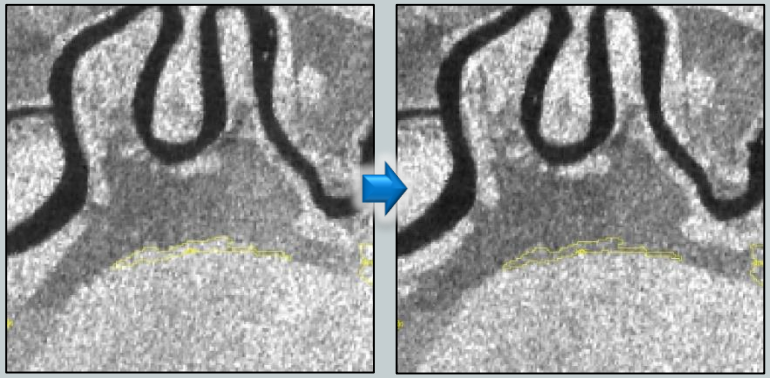
Gabon

Oil-palm plantation development.



Indonesia

Oil-palm plantation development.



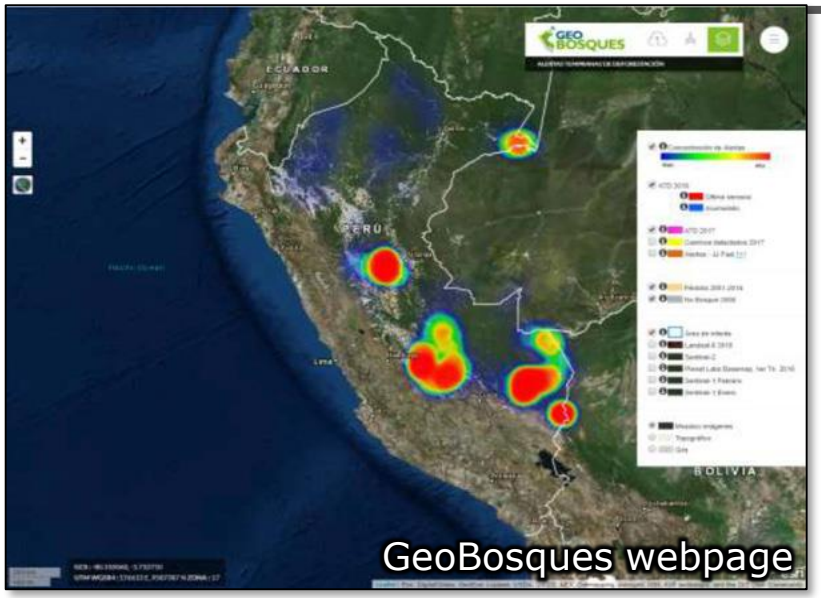
10. Usage for deforestation monitoring

Government's Forest Division
responsible for monitoring illegal logging

Office

Field

11. JJ-FAST utilization



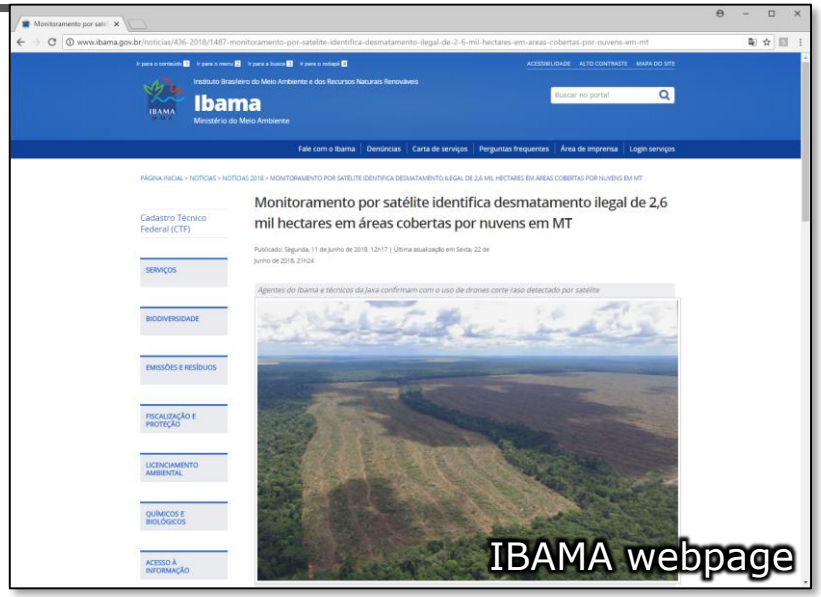
GeoBosques webpage

Peruvian government

SERFOR operates a deforestation monitoring system GeoBosques which mainly uses Landsat data, and they also use JJ-FAST data.

Brazilian government

IBAMA uses JJ-FAST for illegal logging monitoring. They captured 2,600 ha of illegal logging and imposed a surcharge of 13,700,000 real (3.4 million dollar) in February 2018.



IBAMA webpage

12. Conclusion

Deforestation monitoring system JJ-FAST ...

- **provides up-to-date information for global tropical forests.**
- **is not influenced by cloud cover, even in rain season.**
- **strongly supports your forest management!**

JJ-FAST

JICA-JAXA Forest Early Warning System in the Tropics