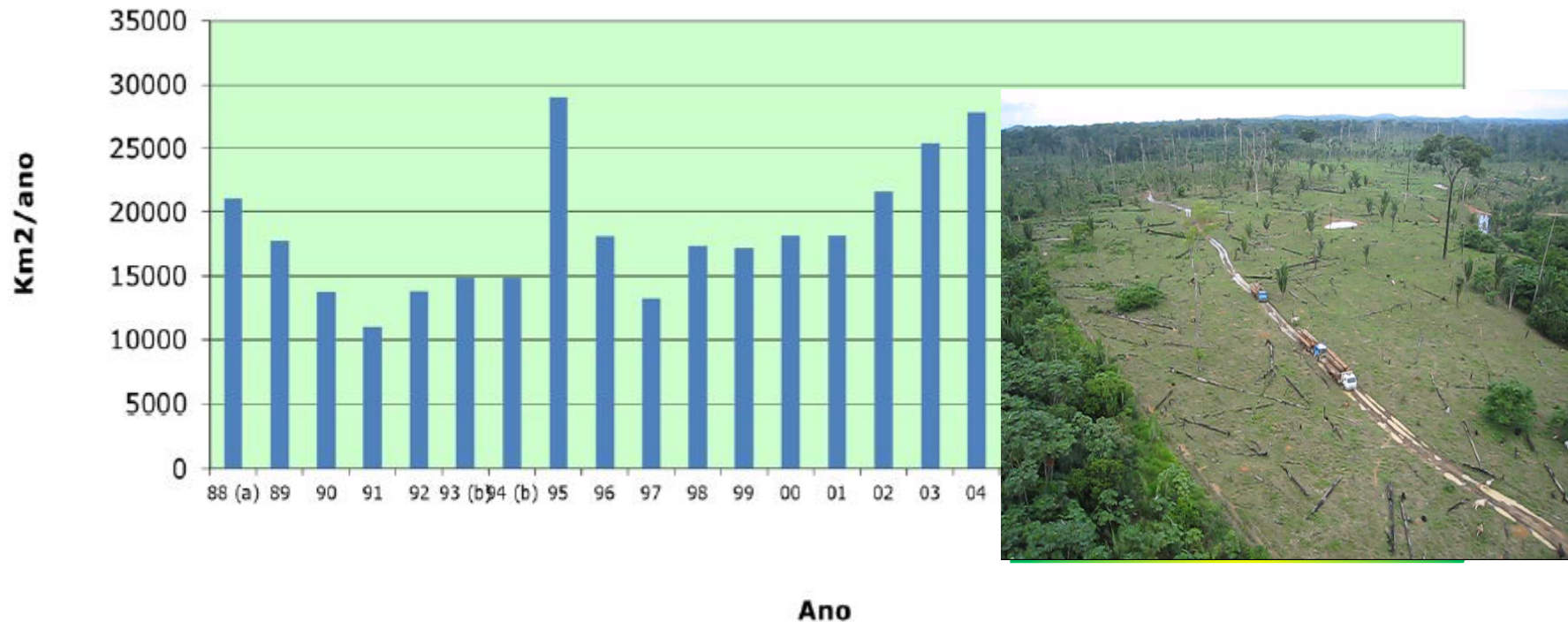# Basic Concept of
Early **W**arning System for Tropical Forest

- Initiative for Improvement of Forest Governance by JICA/JAXA

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Global Environment Department,

Japan International Cooperation Agency

Annual Deforestation in Legal Amazon

Source: INPE

■ **Brazilian Government has been tackling illegal deforestation using optical satellite images (Landsat) since 2004**
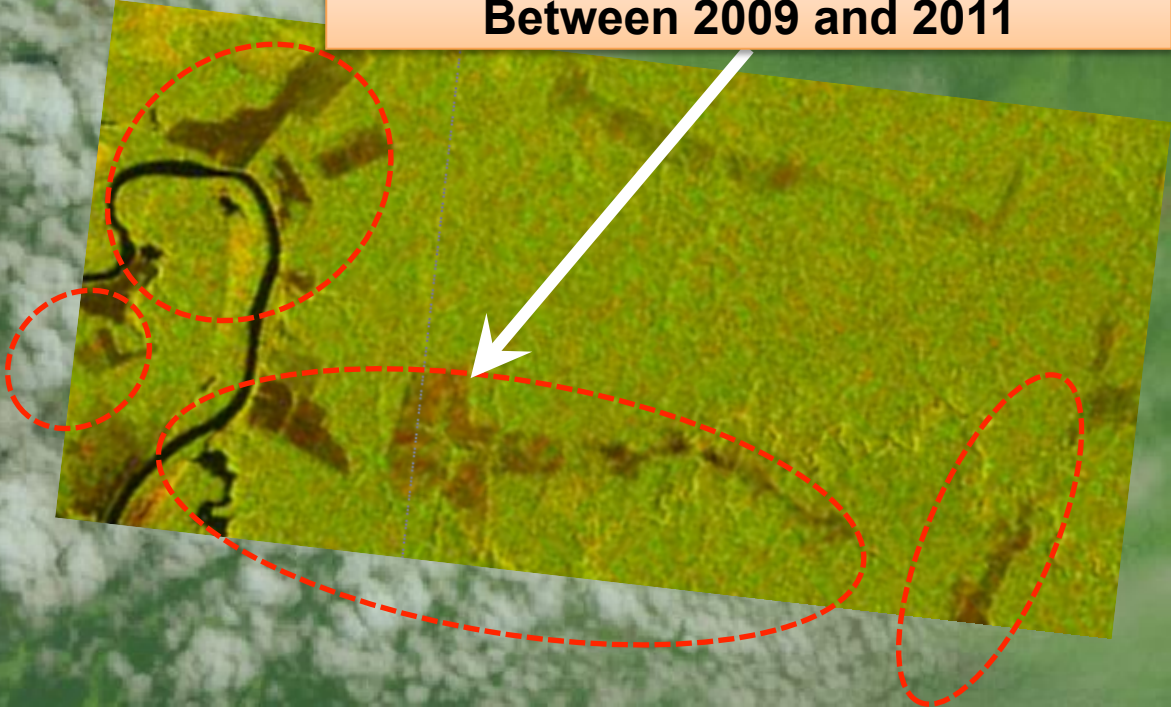■ **Challenge was detection of deforestation in rainy season….**

1. Our previous cooperation in Brazil

Project Title	Utilization of ALOS images to support the Protection of the Brazilian Amazon Forest and Combat against Illegal Deforestation
Project Period	May, 2009〜July, 2012
Implementing Agency	・IBAMA（Brazilian Institute of Environment and Renewable Natural Resources） ・DPF (Federal Police Department)
Project Component	Output 1: Detection and forensic reports Output 2: Strengthening IBAMA/DPF Information sharing system, INDICAR/ SISCOM and INteli GEO Output 3: Training

ALOS

Landsat 5 Image on 2011/09/07

Forest Density Difference by ALOS Between 2009 and 2011

Almost the half period of the year, Amazon Forest is covered with Cloud.
ALOS SAR sensor can detect deforestation even in rainy season or night time.

During the Project…

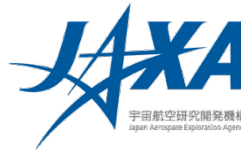| Year	Detection of Deforestation	Illigal Logging
2010	1,007	140
2011 (stopped at April)	176	11

2. New Initiative ~Background

MOU between JAXA-JICA was signed on Apr. 23, 2014

to contribute "Global Issue" using Japanese Satellite

technology

- ・Knowledge and Information on Developing Countries
- ・Advise on Collaboration w/ DCs
- ・Dispatch of Japanese Expert and Lecture

×

- ・Providing Satellite Images for JICA Project
- ・Capacity Development Program (Nominating Experts, Providing Training Program etc.)

ALOS2 (2014~) also has scan SAR (L-band) sensor which can detect forest change under cloud.

Deforestation (illegal logging) is a still big issue and needs from Tropical Countries including Brazil are huge.

Nov. 2015   JICA and JAXA decided to develop new System to contribute forest management in All Tropical Countries…

December 1 Official Release today !

2. New Early Warning System for Tropical Forest by JICA/JAXA

JICA

Tropical Forests Early Warning System
1) Coordination among participated countries and the private sector
2) Planning on collaborative system including web-site designs
3) Cost sharing of project cost and fund raising from the private sector

Coordinating **"Forest Governance Initiatives"**
1) Coordination among participated countries & Private sector
2) Organizing "International Conferences"

Human Capacity Development
1) JICA Trainings in Japan for senior technical experts in Japan
2) JICA Regional trainings in South America, Southeast Asia, and the Congo Basin which have strong needs for this system

Training 500 persons until 2020 for extension of the system

Agreement (2016-2020)

Joint Development & Operation

JAXA

Tropical Forests Early Warning System
1) System Development
2) Basic process (ScanSAR, ortho-rectification, slope correction)
3) Deforestation detection (**50 m resolution, frequency: 1.5 months**)
4) Producing deforestation polygon
5) Feedback based on field surveys and validation for accuracy improvement

Disclose on the Web site
1) Uploading data by JAXA
2) Uploading reports from participated countries and the private sector

User can observe the deforested areas on Smart Phone/Tablet (~sample next slide)

Concession management by private companies

Illegal deforestation monitoring by Government agencies

Contributing to " Improvement of Forest Governance in Tropical Forest"
Target Area: Approximately 16.6 million km^2

<SAMPLE IMAGES>

Select Period ⇒: 8 Sep., 2015 – 23 Oct., 2015

↑ Click

| 7 Dec., 2015 | 10 Jan., 2016 |
| Browsed Image | Polygon down load |

Background: forest non-forest map by PALSAR-2
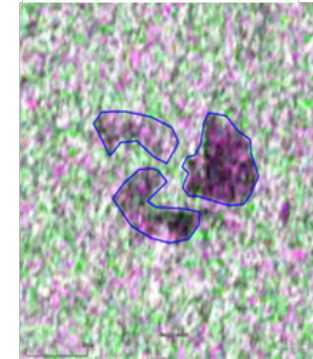
User can observe the deforested areas on Smart Phone/Tablet

※System will cover most of Tropical Forest

Thank you for your attention !

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