

The European Commission's science and knowledge service

Joint Research Centre



ReCaREDD Project

'Reinforcement of Capacities for REDD+'

(Strengthening national and regional capacities for reporting on the mitigation actions of the forest sector)

*F. Achard, R. Beuchle, S. Carboni, B. Combal, H. Eva, A. Langner, A. Marelli, D. Simonetti,
H-J Stibig, C. Vancutsem, A. Verheggen, G. Vielledent*

ReCaREDD: <http://forobs.jrc.ec.europa.eu/recaredd/>

RFO-SEA: <http://www.rfo-sea.org>

Part 1: ReCaREDD Project

Part 2: RFO-SEA

(Prototype for 'Regional Forest Observatory – Southeast Asia')

ReCaREDD Project

EU-project (2014-2018)

- Launched by DG DEVCO and implemented by EC-Joint Research Centre (JRC)

Main Objective:

- Contribute to capacity building in tropical countries for reporting on mitigation actions in the forest sector (REDD+)

Collaboration with partners in Southeast Asia countries:

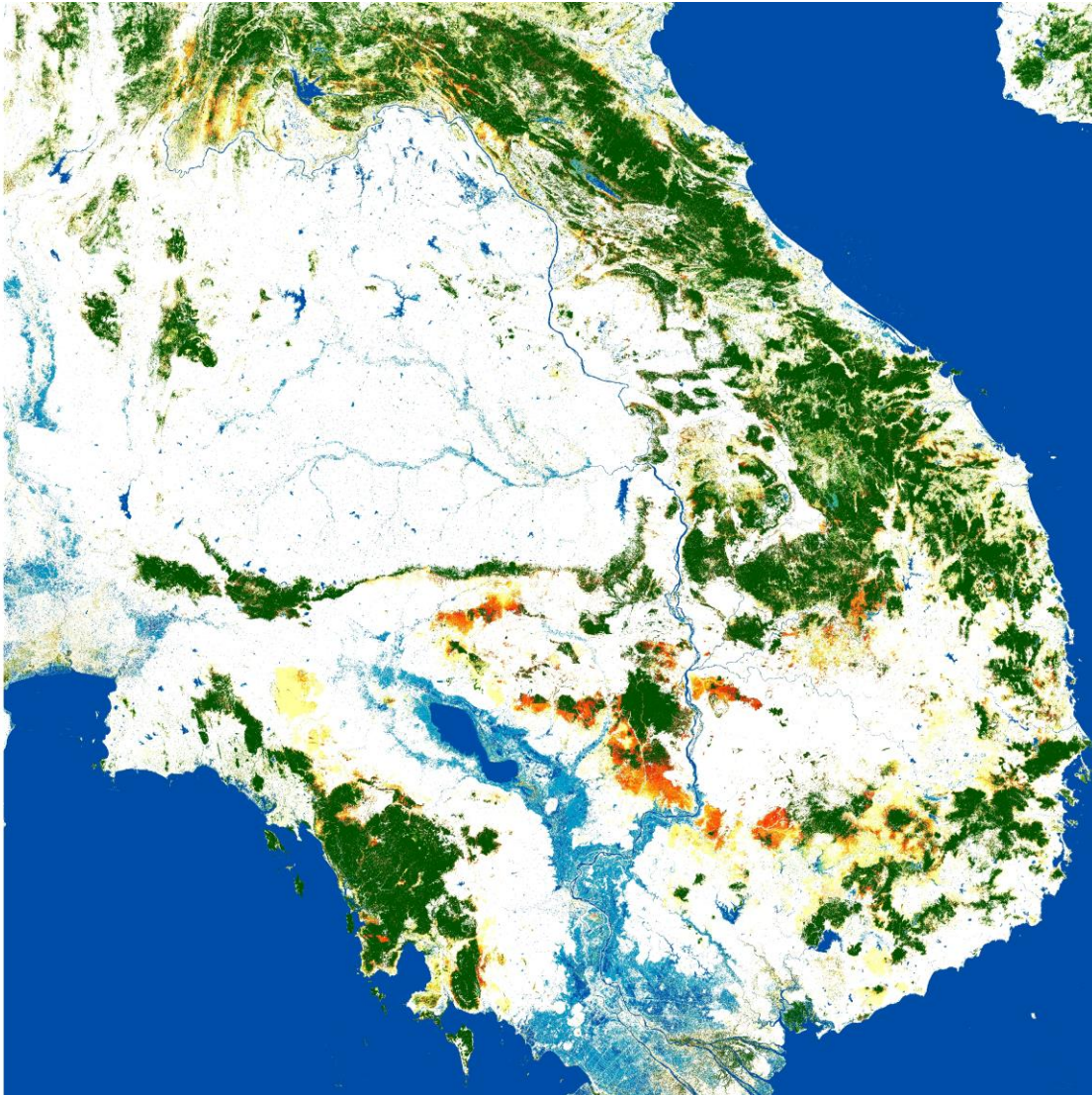
- Initial 'focus' on Mekong region: CAMBODIA (*MoE*), LAOS (*DoF*), VIETNAM (*FIPI*)
- Case-by-case collaboration: INDONESIA (*MEF*), MYANMAR (*MoNREF*), NEPAL (*DFRS*), THAILAND (*RFD, DNP*)

Core Activities

- Developing new *Remote Sensing* methodologies for tropical forest monitoring
Deforestation and forest degradation
- Developing specific software tools
Open source software: IMPACT-Tool
- Capacity building / training on developed tools and methodologies
National / regional workshops
- Disseminating and supporting access to SENTINEL-2 (S2) imagery
Provision of processed full S2 country coverages to national project partners
- Prototyping a 'Regional Forest Observatory – Southeast Asia'
Regional platform for exchange of knowledge & data on forest & REDD+
(ReCaREDD component implemented by external FCG-led consortium)

Developing new *Remote Sensing* Methodologies

Deforestation: 'Roadless Forest Map'



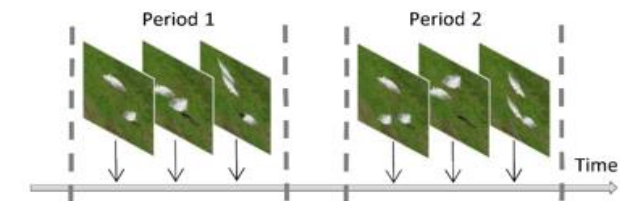
Evergreen forest cover and change since the 1980s
based on the full Landsat archive (using GEE)

- 10. Undisturbed forest over the 32 years (1984-2016)
- 20. Old vegetation regrowth (> 10 years)
- 30a. Forest Young vgt regrowth (3-10 years), forest before (1984-2006)
- 30b. Young vgt regrowth (3-10 years), non-forest before (1984-2006)
- 40. Deforestation started in 2007-2013
- 50. Deforestation started in 2014-2016
- 60. Disturbance(s) started in 2014-2016
- 71. Permanent Water (2015)
- 72. Sesaonal Water (2015)
- 73. New Permanent Water (2015), forest before
- 80. Plantations
- 90. Other LC
- 100. No data

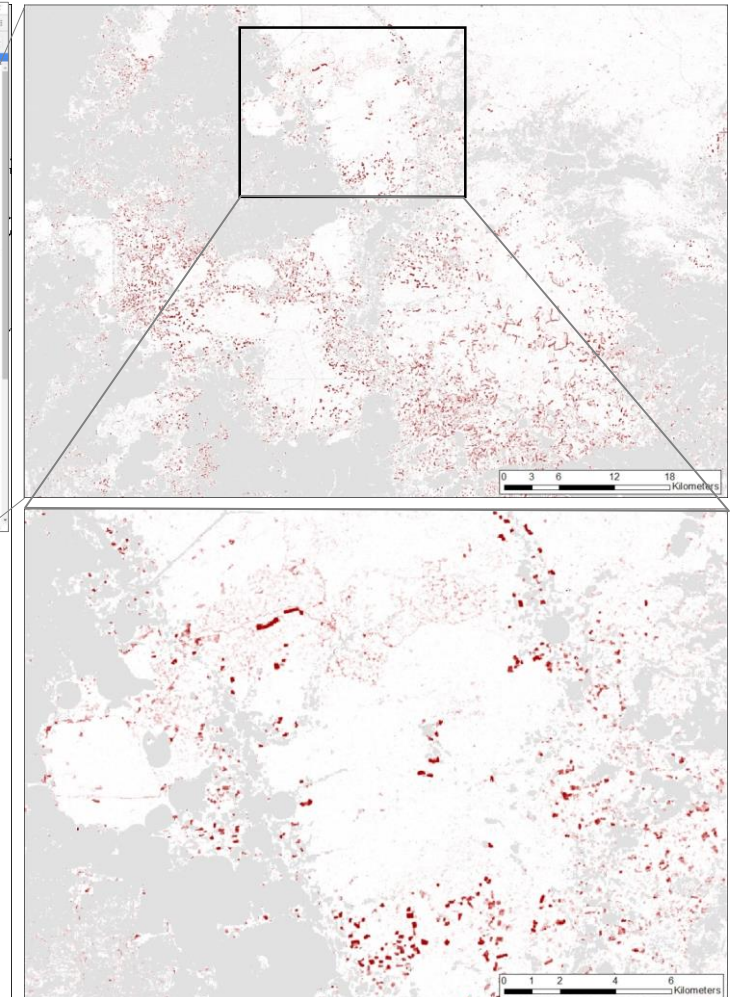
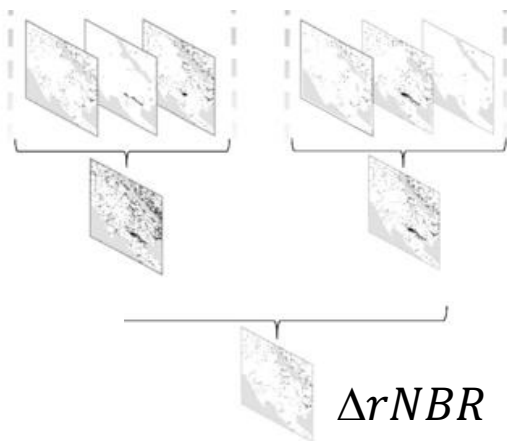
Developing new *Remote Sensing* Methodologies

Forest Disturbance / Potential Forest Degradation: Delta-rNBR (freely available)

Methodology for detecting canopy disturbance based on Δ -rNBR index

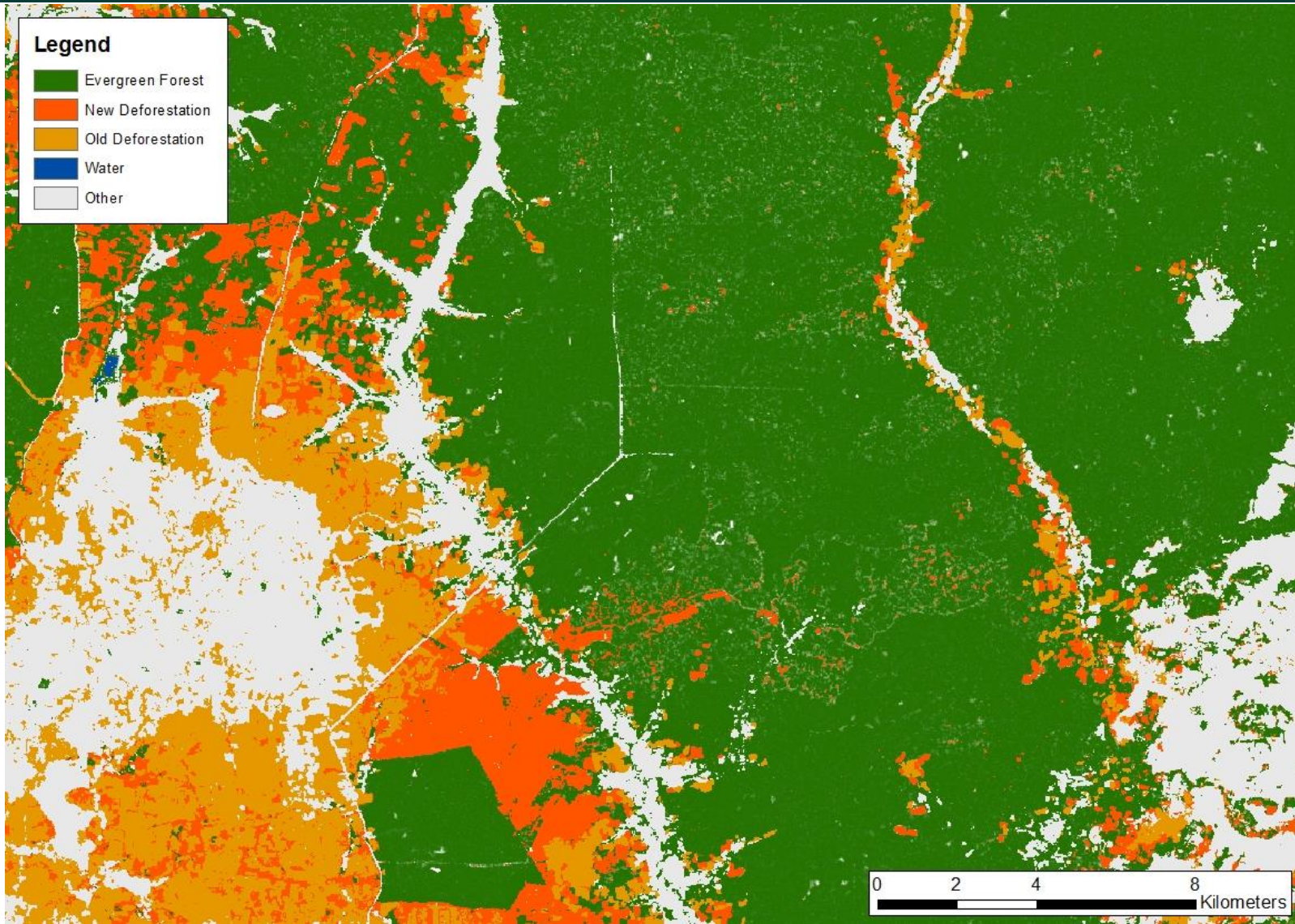


$$rNBR = NBR_{n_median} - NBR$$



Developing new *Remote Sensing* Methodologies

Combining Information on Deforestation and Forest Canopy Disturbance

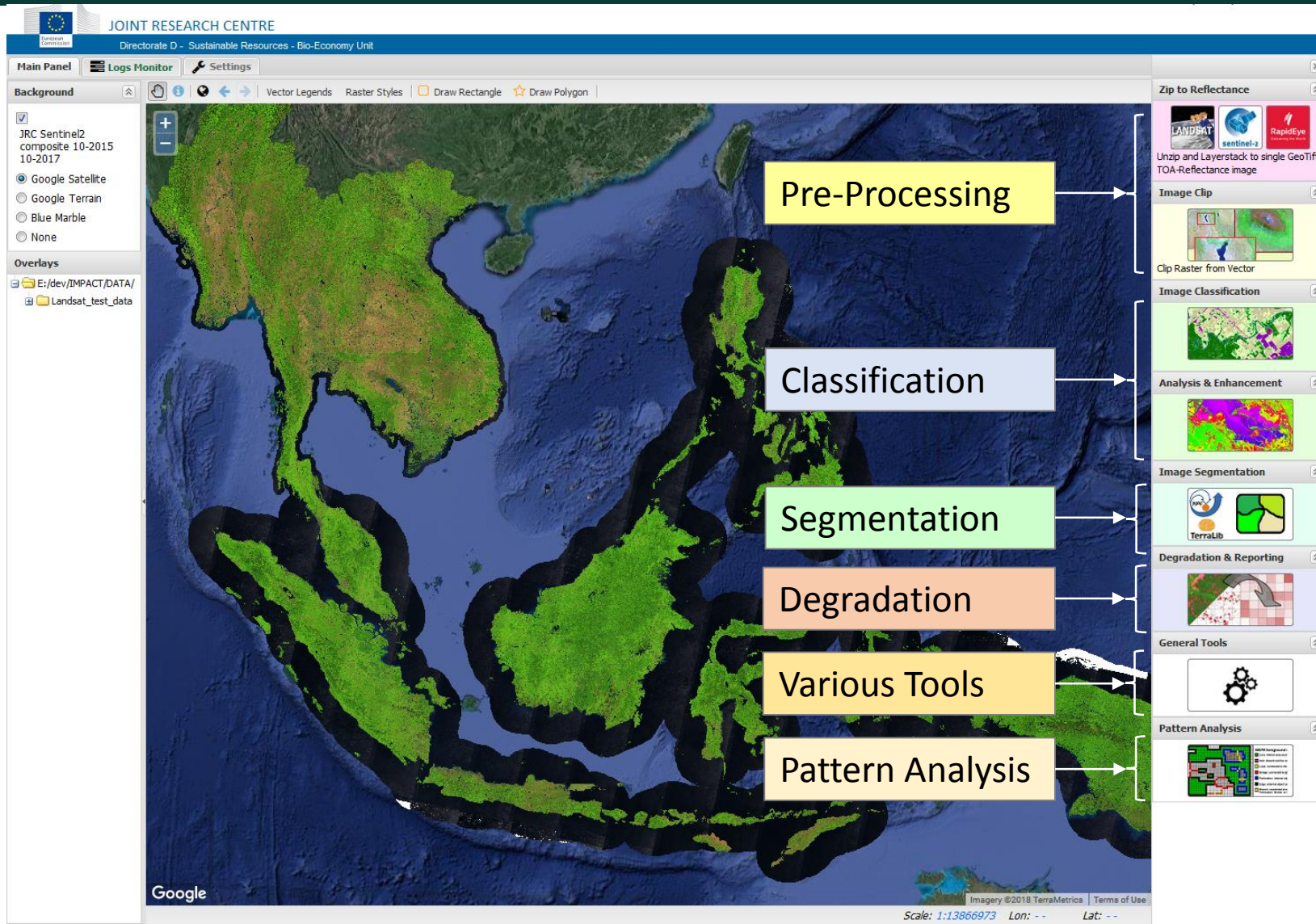


Deforestation
(from 'Roadless Forest' Map)
+
'Forest Degradation'
(from 'Disturbance Index')

as input for
Emissions Estimation

Developing & Training on Specific Software Tools

JRC IMPACT Tool



IMPACT Toolbox open source software

- Modules for image and GIS processing &
- **Tailored modules supporting forest degradation assessment and emission estimation**

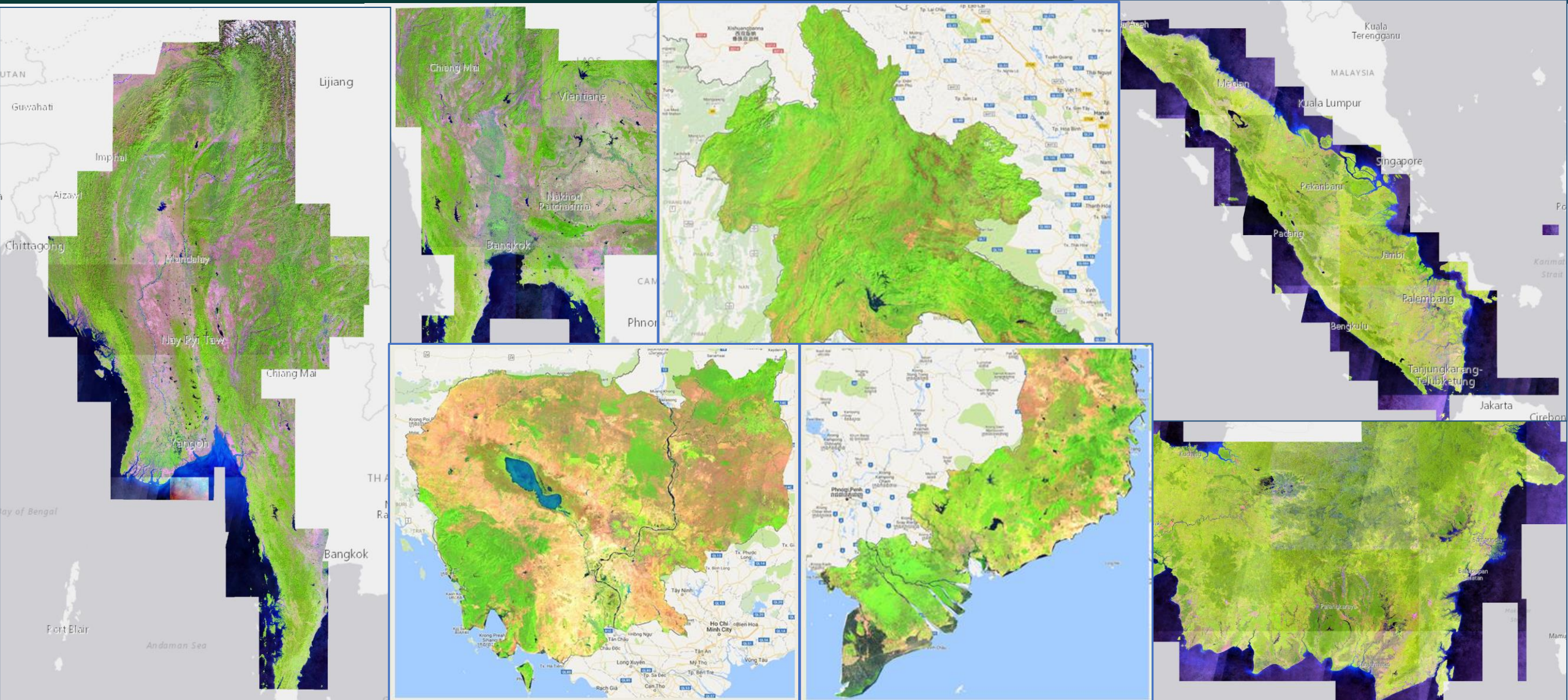
Training and Workshops in Southeast Asia

6 National + 1 Regional Workshop(s)



Access to SENTINEL-2 (S2) Imagery

Provision of Processed full S2 - Country Coverages



ReCaREDD and COPENICUS SERVICES

RECAREDD Output:

Methodologies for monitoring deforestation & degradation in the Tropics



*JRC contributing to H2020 project:
'REDD+Copernicus'
Improving Forest Monitoring Services*

Copernicus

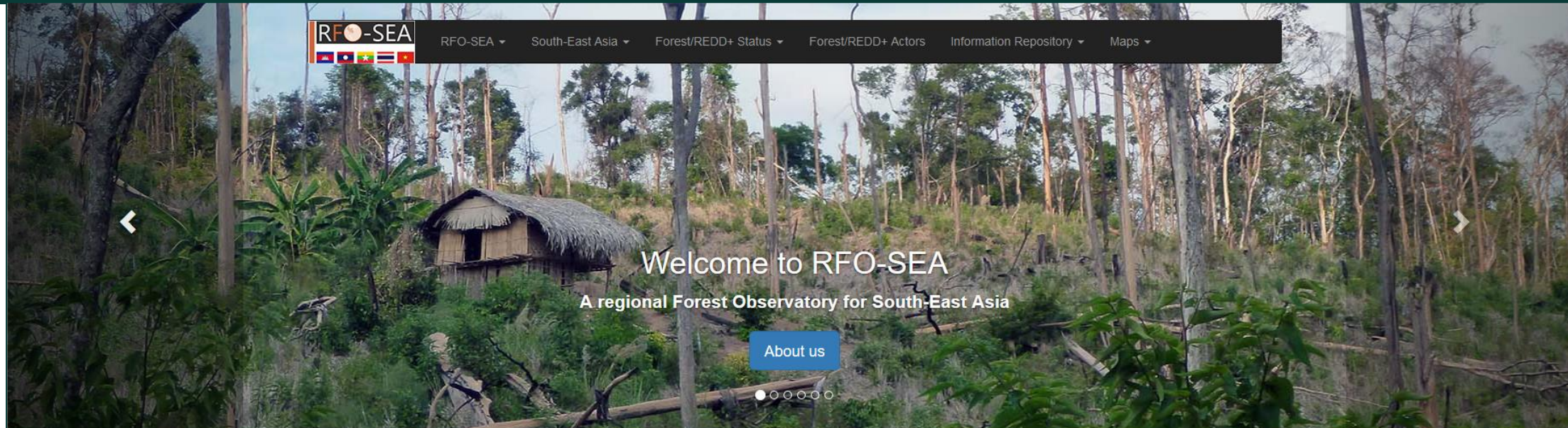
Contribution to specifications of
Copernicus services
(e.g. forest degradation)

Part 1: ReCaREDD Project

Part 2: RFO-SEA

(Prototype for 'Regional Forest Observatory – Southeast Asia')

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)



Geoportal

A platform with forest cover maps to observe forest cover change in the region



Information repository

A library of relevant resources to support forest monitoring and REDD+



National Summary

A summary of forest status at national level

Funded by the European Union

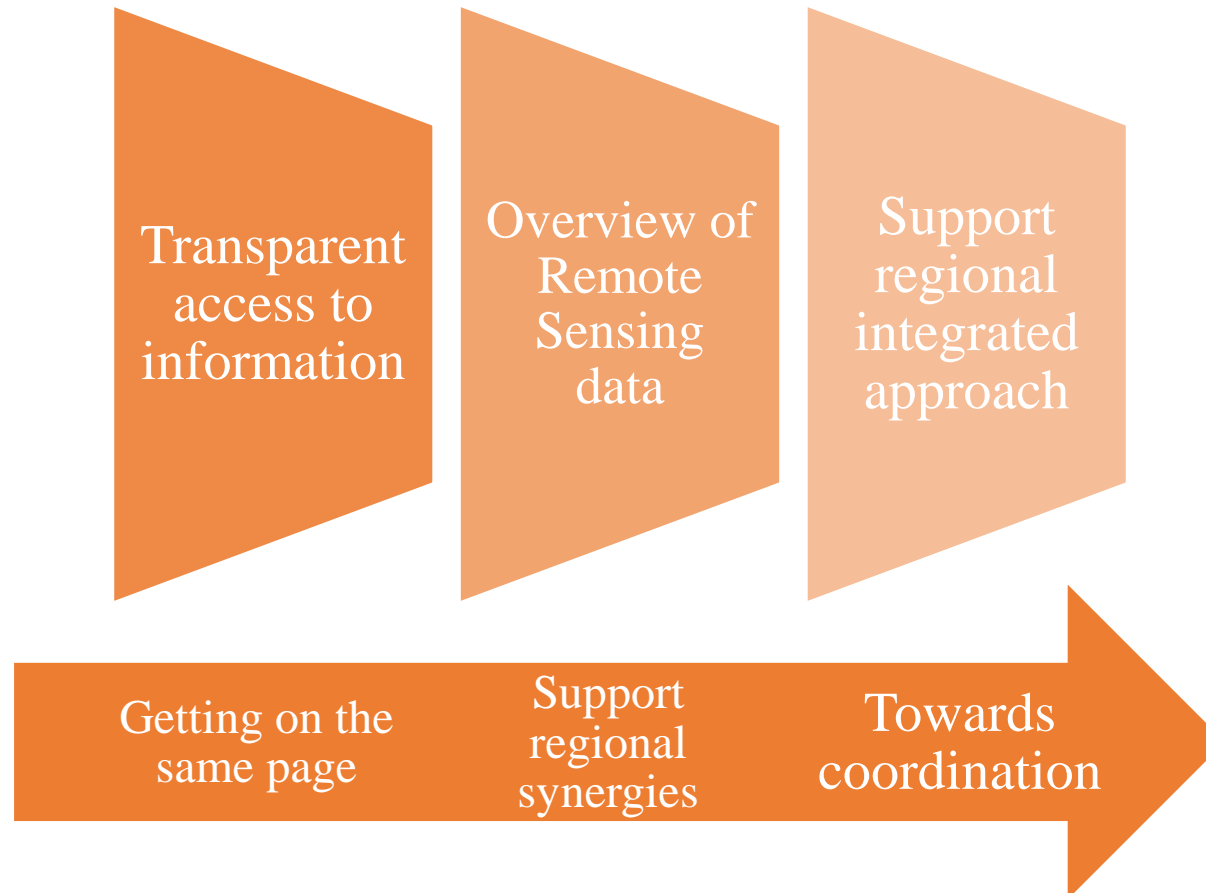


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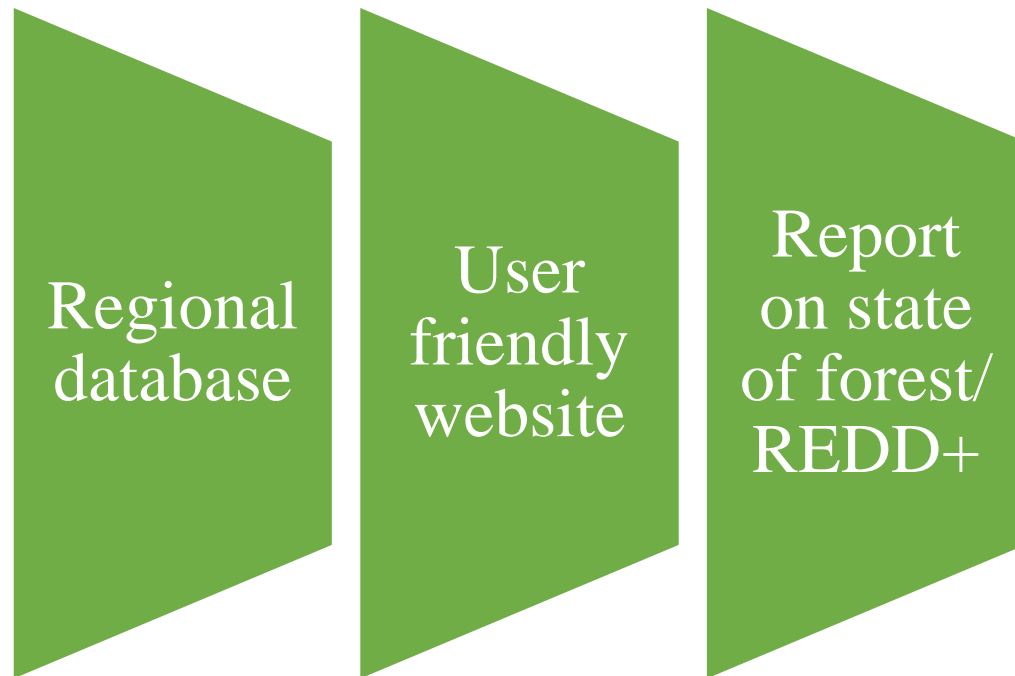
Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

A regional platform to collate, share and exchange knowledge and data on the status of forests and REDD+

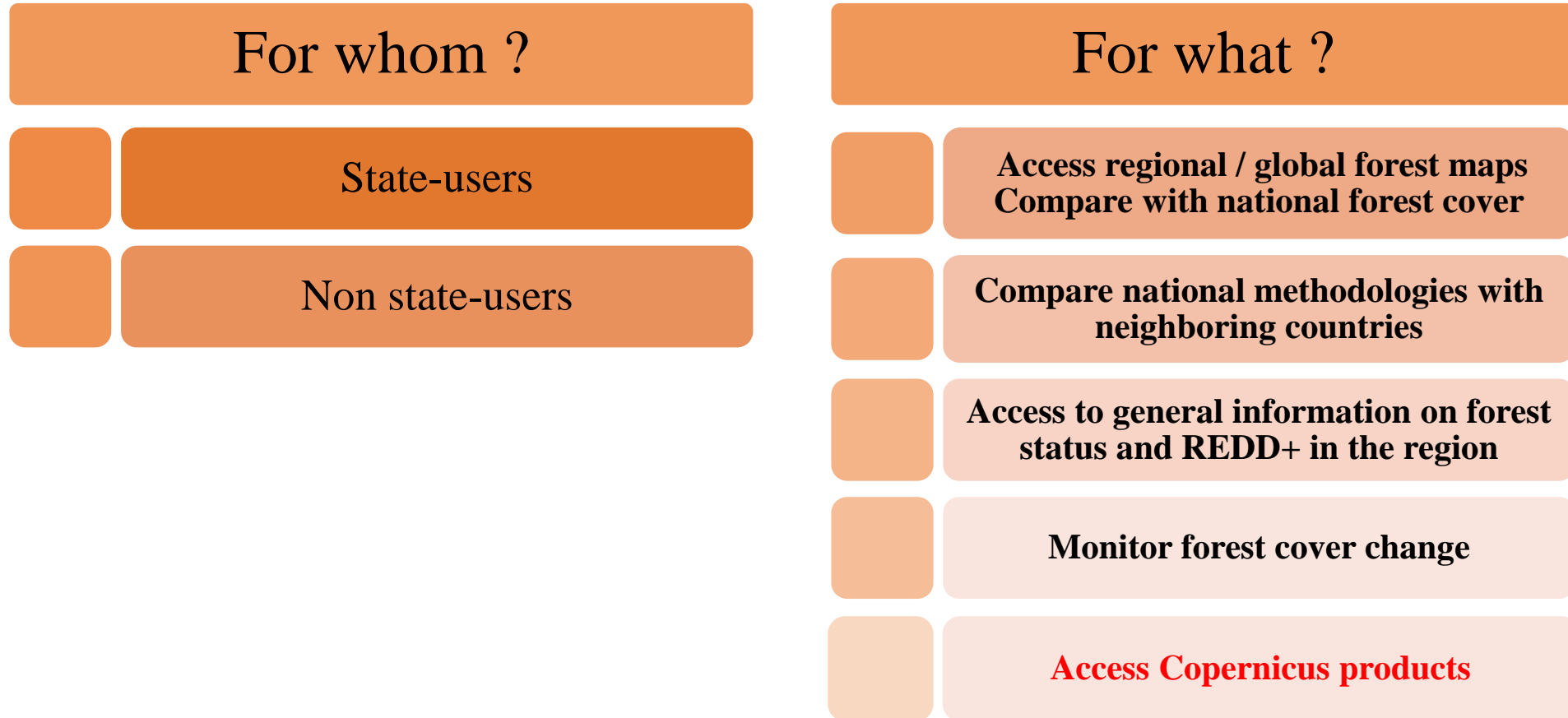


Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

Operational and free access website: www.rfo-sea.org



Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

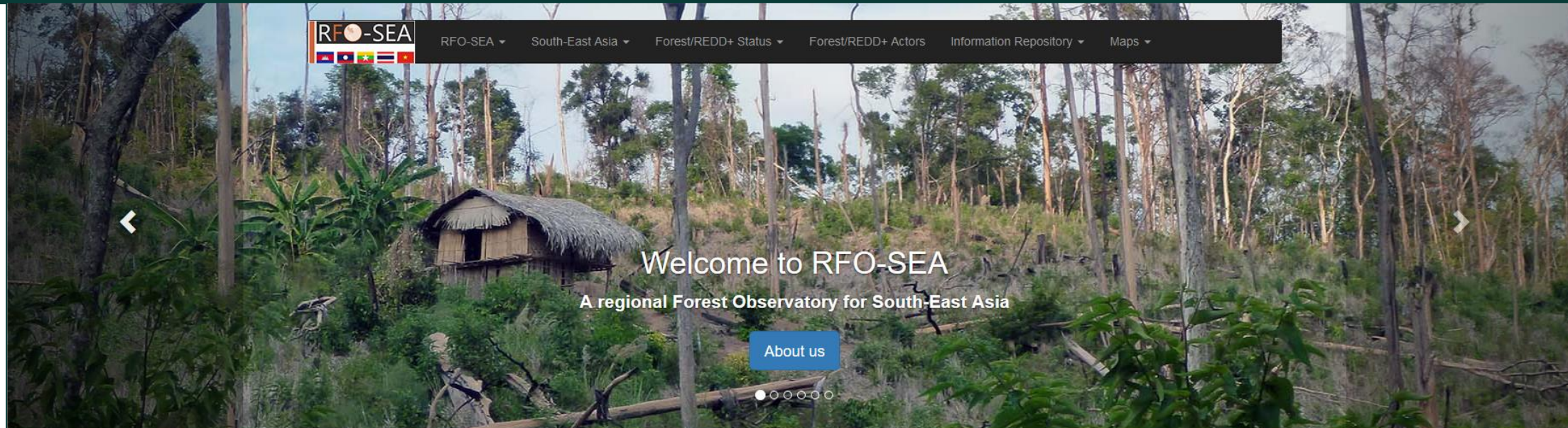


Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)



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<http://www.rfo-sea.org>



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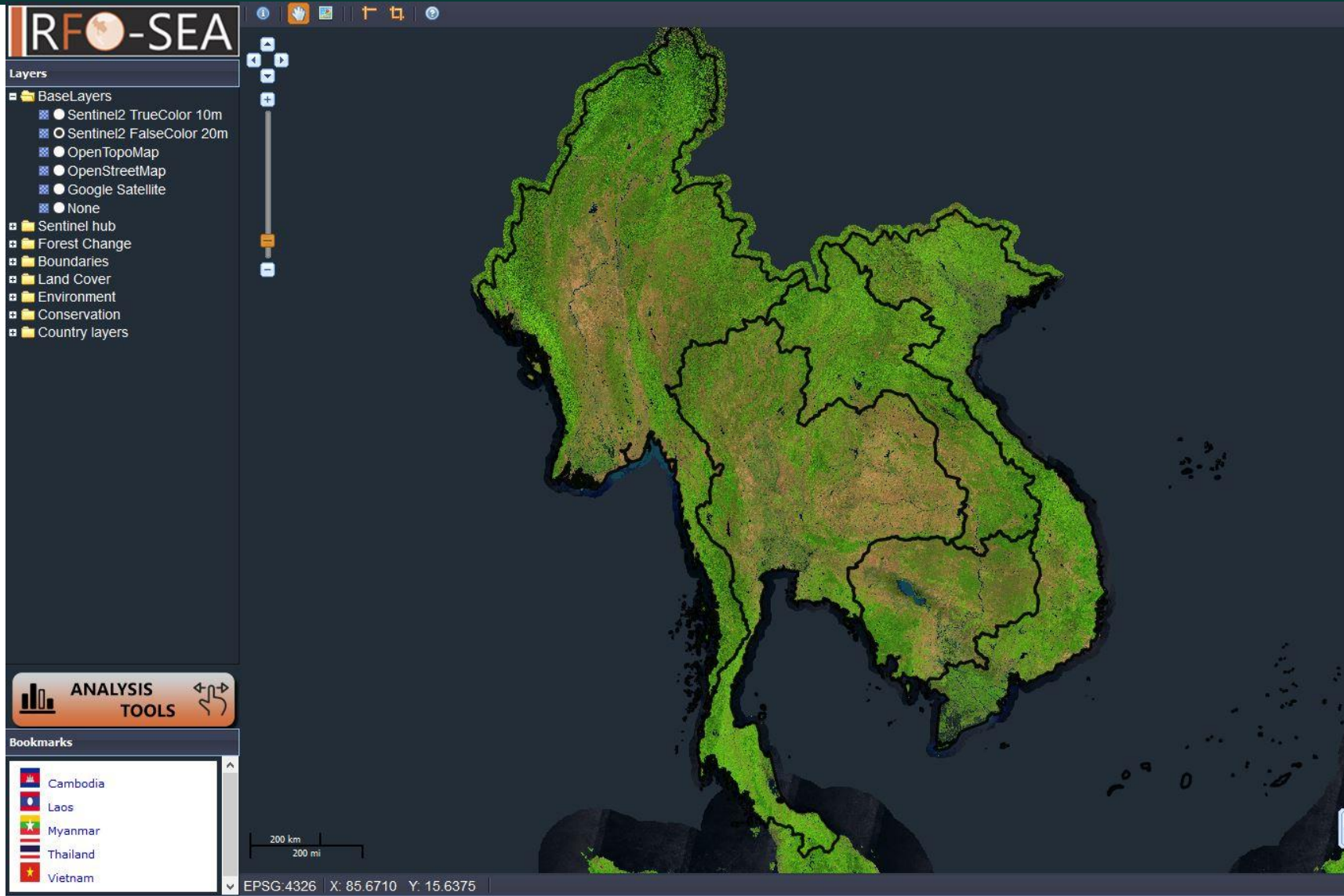
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Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

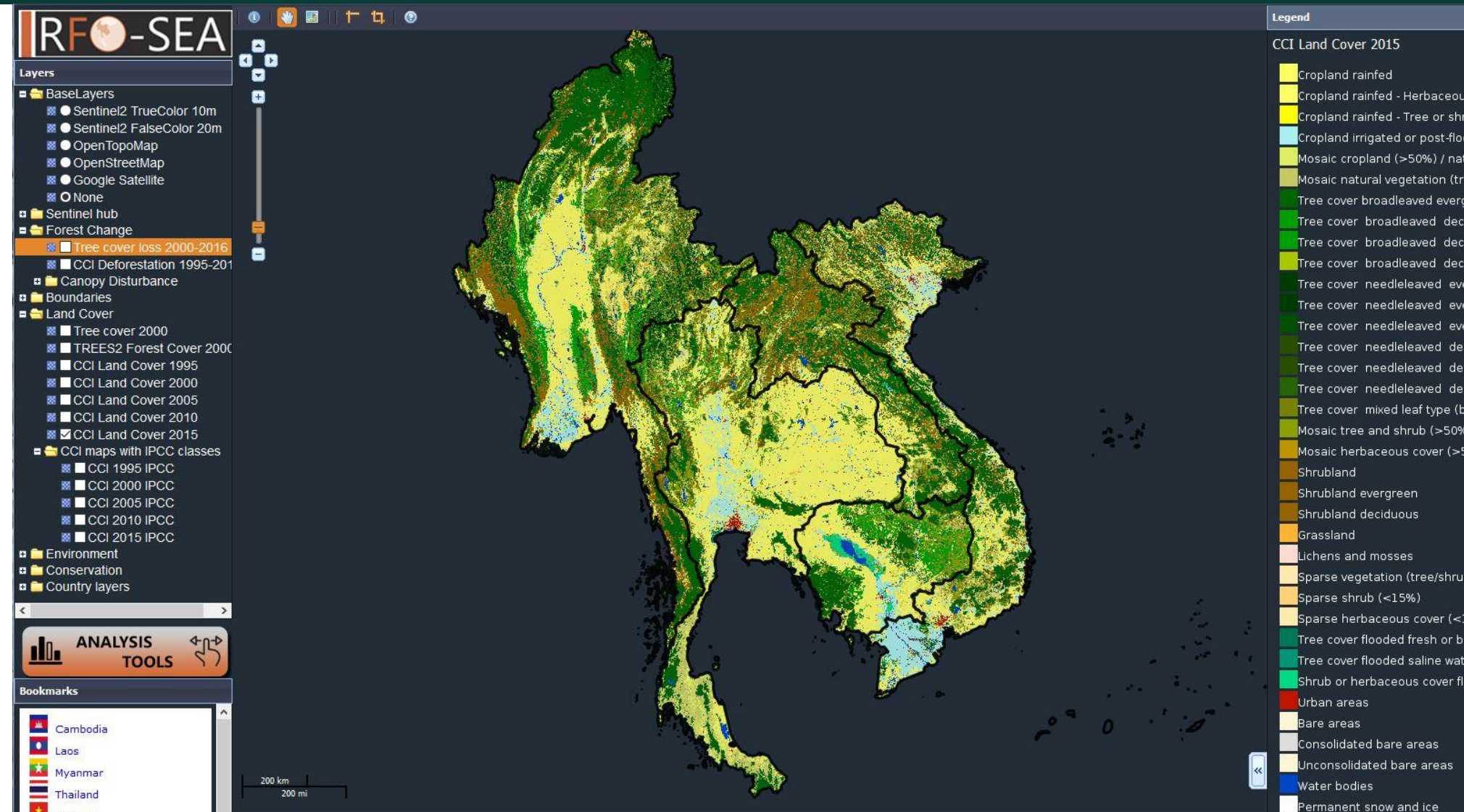


Example

Geoportal

Regional Mosaic of
Sentinel2 imagery

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

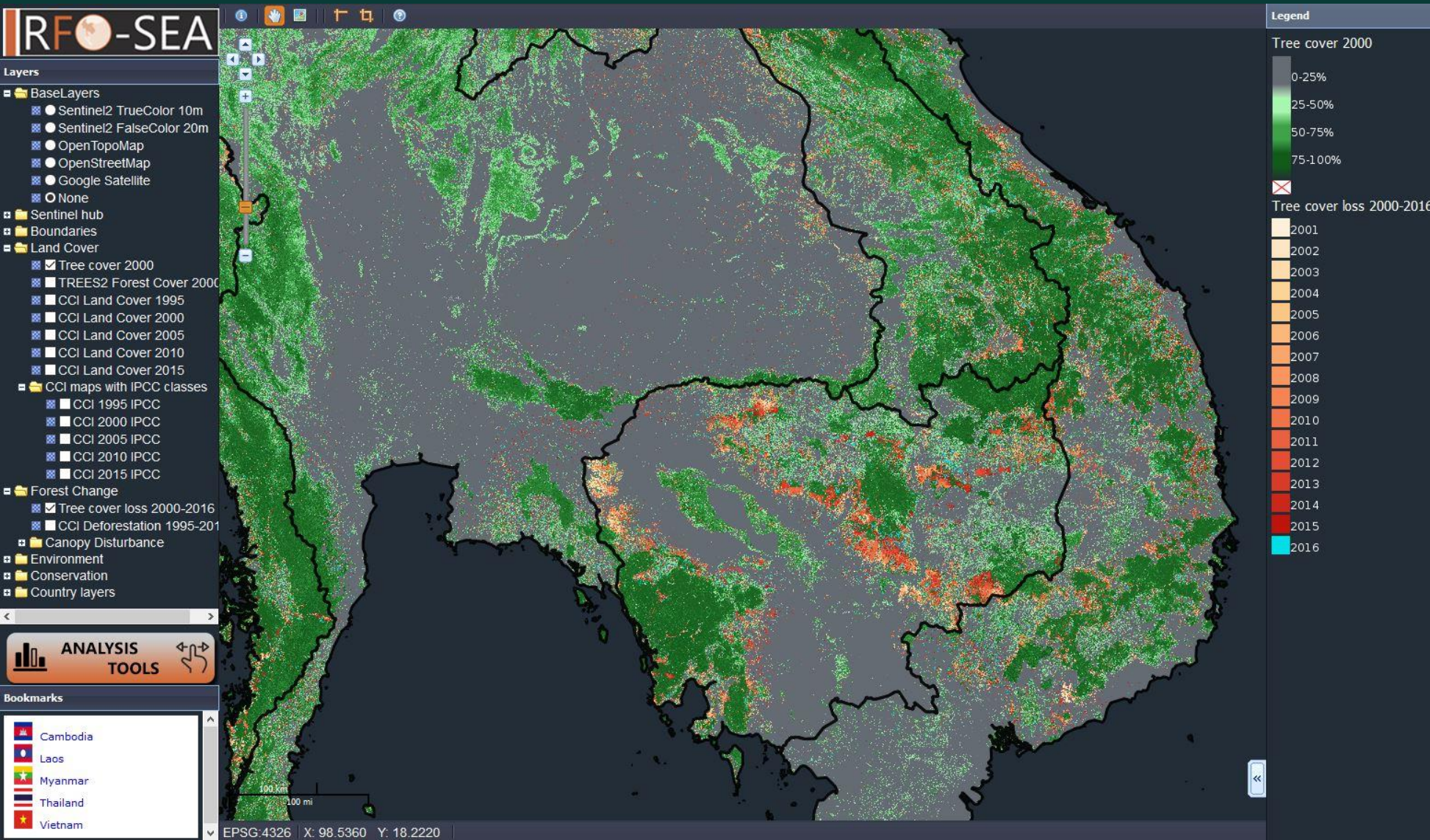


Example

Geoportal

CCI Land Cover
Map 2015
(ESA)

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

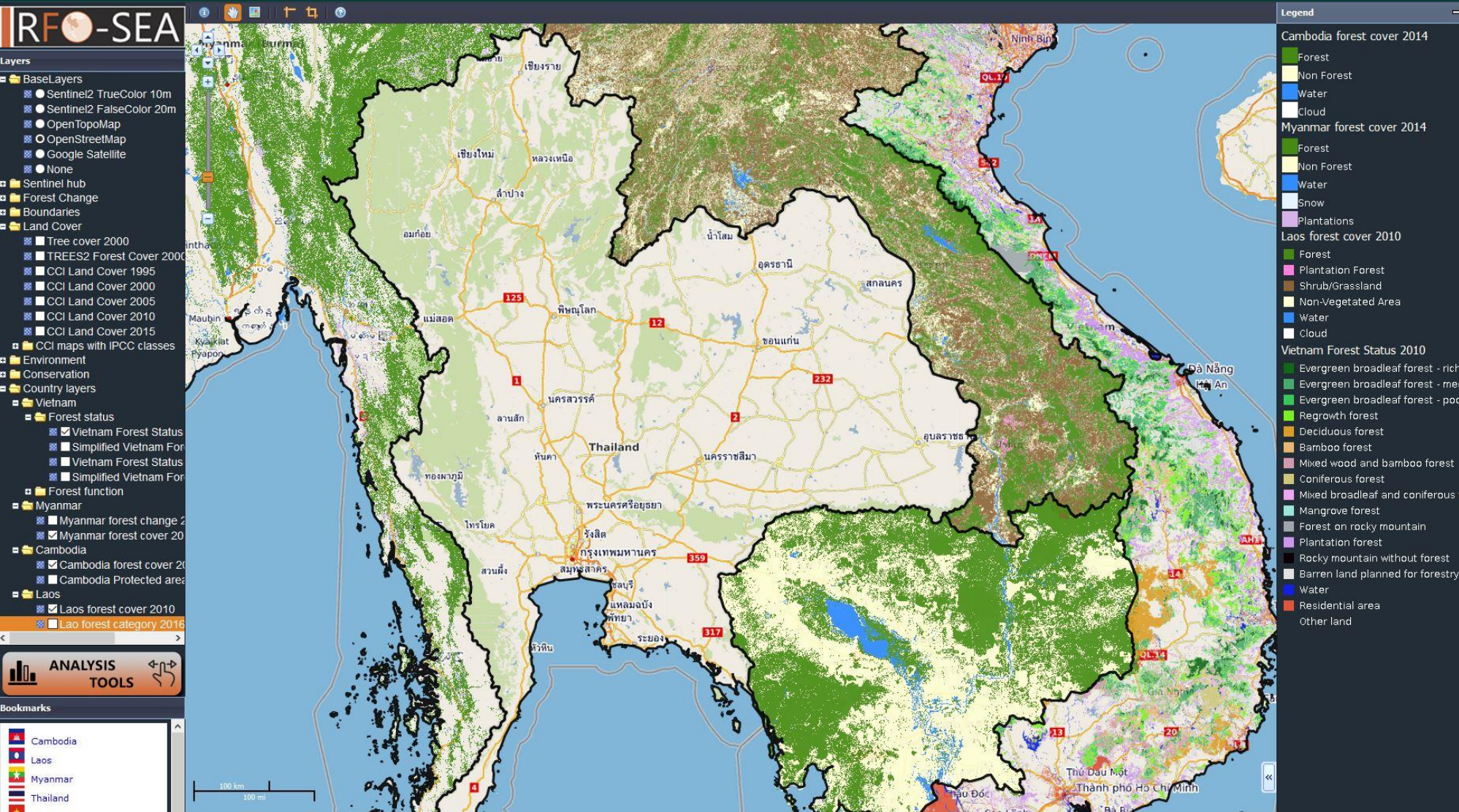


Example

Geoportal

Tree Cover Map 2000
&
Change 2001-2016
UMD Map
(Hansen et. al)

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)



Example

Geoportal

**National
Forest Cover Maps**

*Myanmar 2014
Laos 2010
Cambodia 2014
Vietnam 2010*

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

Q Filter

TYPE OF RESOURCES

- ☐ Dataset (27)
- ☐ Laws (12)
- ☐ Presentation (10)
- ☐ Report (65)
- ☐ Technical guide (14)

4 more

INSPIRE THEMES

- ☐ Atmospheric conditions (1)
- ☐ Hydrography (1)
- ☐ Land cover (14)
- ☐ Land use (4)
- ☐ Protected sites (2)

1 more

KEYWORDS

- ☐ Cambodia (37)
- ☐ Lao PDR (32)
- ☐ Myanmar (28)
- ☐ REDD+ (54)
- ☐ Vietnam (42)

30 more

YEARS

- ☐ 2010 (1)
- ☐ 2011 (2)
- ☐ 2015 (1)
- ☐ 2016 (1)
- ☐ 2017 (6)

1 more

FORMATS

- ☐ ESRI Shapefile (3)
- ☐ GeoTIFF (14)
- ☐ Pdf (111)
- ☐ ShapeFile (8)
- ☐ Text/plain (2)

1 more

Sorted by popularity 21 - 40 on 139

Cambodia's national forest programme

The process towards the elaboration of a National Forest Programme (NFP) calls for a background document reviewing conditions of the forestry sector. This NFP Background Document aims to serve as a reference to the Strategic and Operational Frameworks by providing context, data, and analyses of forestry in Cambodia based on specific

Hansen tree cover 2000

A dataset visualising tree cover across the Greater Mekong Subregion at 30 x 30m resolution. For the purpose of this study, "tree cover" was defined as all vegetation taller than 5 meters in height. "Tree cover" is the biophysical presence of trees and may take the form of natural forests or plantations existing over a range of canopy densities. Dataset is encoded as

Yearly average precipitation

yearly average precipitation is map that illustrate the average precipitation for many years

Initial Forest Reference Level for Cambodia under the UNFCCC Framework

In accordance with decisions 4/CP.15, 1/CP.16, 12/CP.17, 13/CP.19, Cambodia is submitting on a voluntary basis for consideration by the UNFCCC its initial Forest Reference Level (FRL). In this report, we provide an overview of the data and methodologies used to develop Cambodia's initial FRL. The information presented is intended to be

Remote Sensing Tool for Monitoring of Conversion Areas in a future Timber...

Overview of presentation - Monitoring of conversion Areas - Evaluation of Monitoring Options - Pilongting of selected Options - Outlook on FLEGT VPA process

Forestry law in Myanmar


The basic principles underlying this Law include implementing the forestry and environmental conservation policies of the Government and developing the State's economy to provide food, and other needs. Under this Law, all standing teak trees, regardless of location, are owned by the State. The Minister may create or alter reserved and protected



MAP

Example

Information
Repository


Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)


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




Tree allometric equation development for estimation of forest above -ground biomass in Vietnam

Viet Nam is one of the few tropical countries, whose forests have shifted along the forest transition curve, to exhibit net forest increase. National efforts towards the establishment of a system for monitoring forests to assess emission reductions and removals include the implementation of specific allometric models for VietNam. Under the UN-REDD program in Viet Nam, six institutions have been working on the development of a database containing information such as existing allometric equations and wood densities, the identification of necessary and priority, the development of guidelines for the establishment of allometric models, collection of field data and the development of new allometric equations









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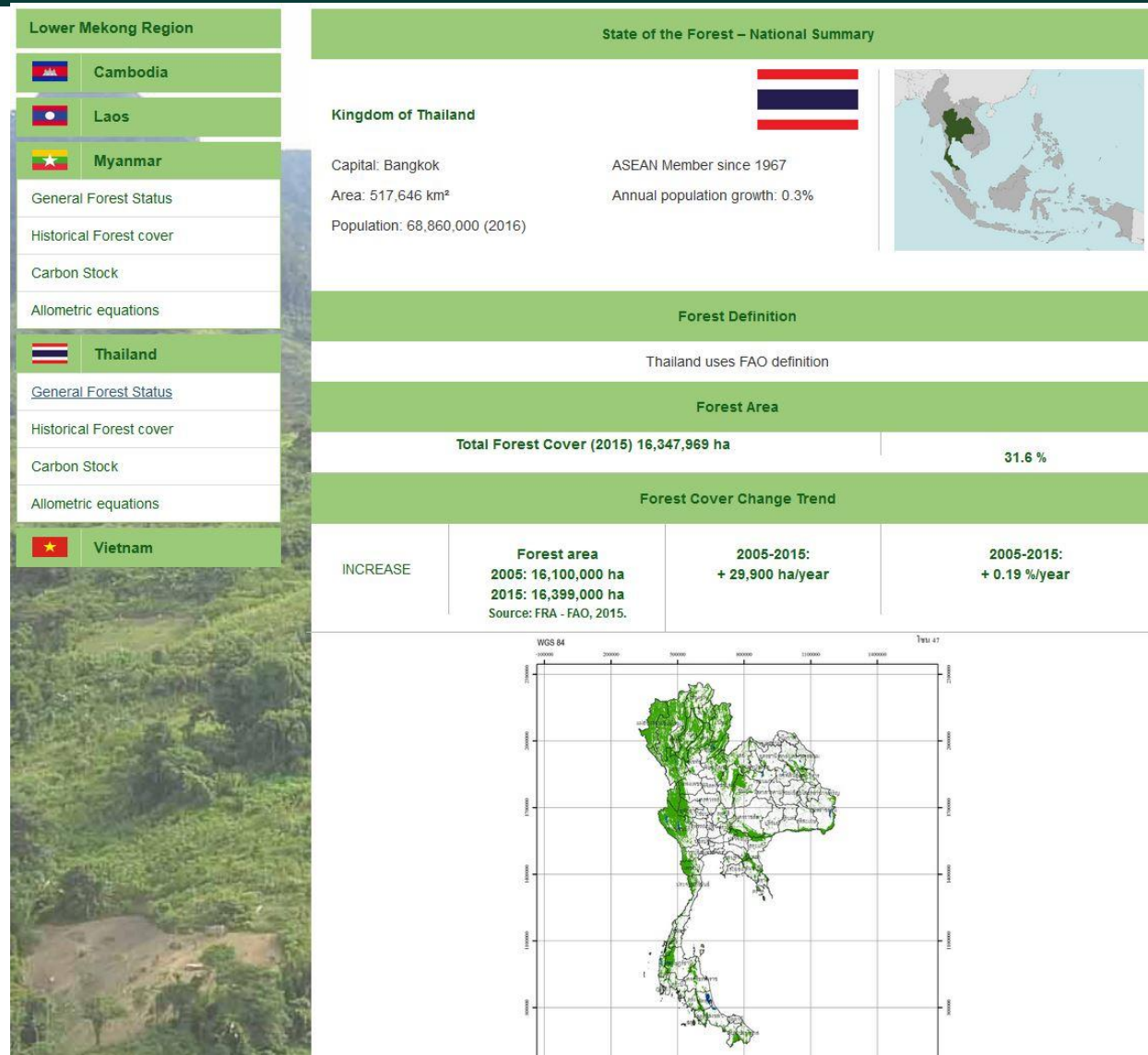
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 AE_PartB-6-RCFEE_CH_(EB_Bam_Dec)-finalwebsite_5007.pdf	Open link

Example

Information
Repository

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)



Example

National
Summaries

Prototype of 'Regional Forest Observatory – Southeast Asia (RFO-SEA)

Roadshow in June 2018: discussion with forestry organizations in 6 countries
Cambodia, Indonesia, Laos, Myanmar, Thailand & Vietnam

Feedback Target users:

- General interest increased since launch of project
- Stakeholders from national institutions still desire more tangible benefits

Interest in RFO-SEA:

- Great interest in geoportal, more practical functionalities for end-users desired
- Increasing interest in regional approach
- Some interest for the information repository

Implementation of RFO-SEA:

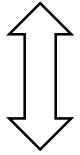
- Positive reaction to the potential expansion to “all” South-East Asia (potentially with ASEAN as an umbrella)

Potential users/stakeholders are looking forward further developments



RFO-SEA and COPERNICUS SERVICES

COPERNICUS Services



RFO-SEA

Delivering regional scale data layers related to tropical forests, forest change, forest degradation and REDD+

Potential role as regional platform for holding and sharing such data layers

- At the moment the RFO-SEA is a 'Prototype' - that could to be expanded at little effort
- Regional hosting institution and limited funding required
- Under umbrella of ASEAN as feasible option?