Mapping forest disturbances using Synthetic Aperture Radar (SAR) and Artificial intelligence (AI)

March 23, 2021

Ate Poortinga

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SERVIR MEKONG

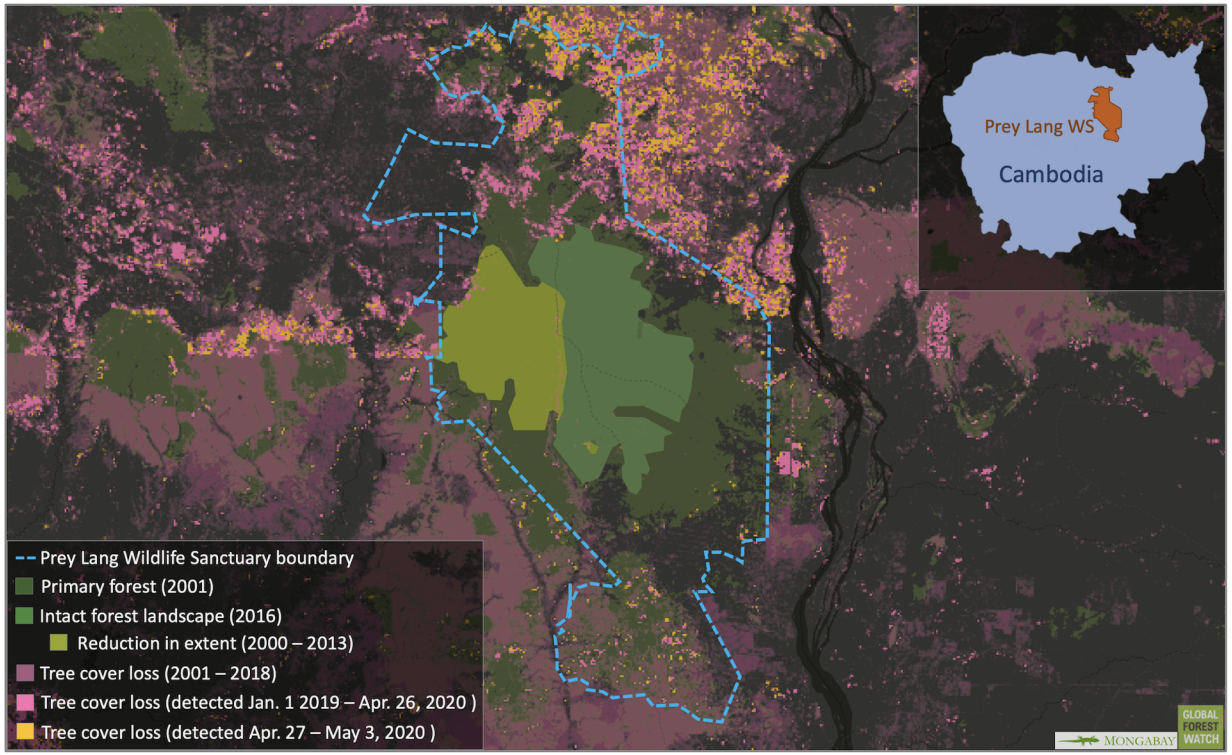
SERVIR is a network of geospatial hubs located strategically across five regions of the World. SERVIR aims to increase use of geospatial information and technology for better development decision making.

Deltares Enabling Delta Life

Spatial Informatics Group

SEI Stockholm Environment Institute

link



Cambodia: Widespread illegal logging in Prey Lang rainforest amid ban on community patrols

25 February 2021, 00:00 UTC

- ***Prey Lang at grave risk, one year after environmental defenders were banned from patrolling wildlife sanctuary***
- ***Authorities cancelled local communities’ planned ceremony in Prey Lang today***
- ***Proposed power line project threatens further deforestation***

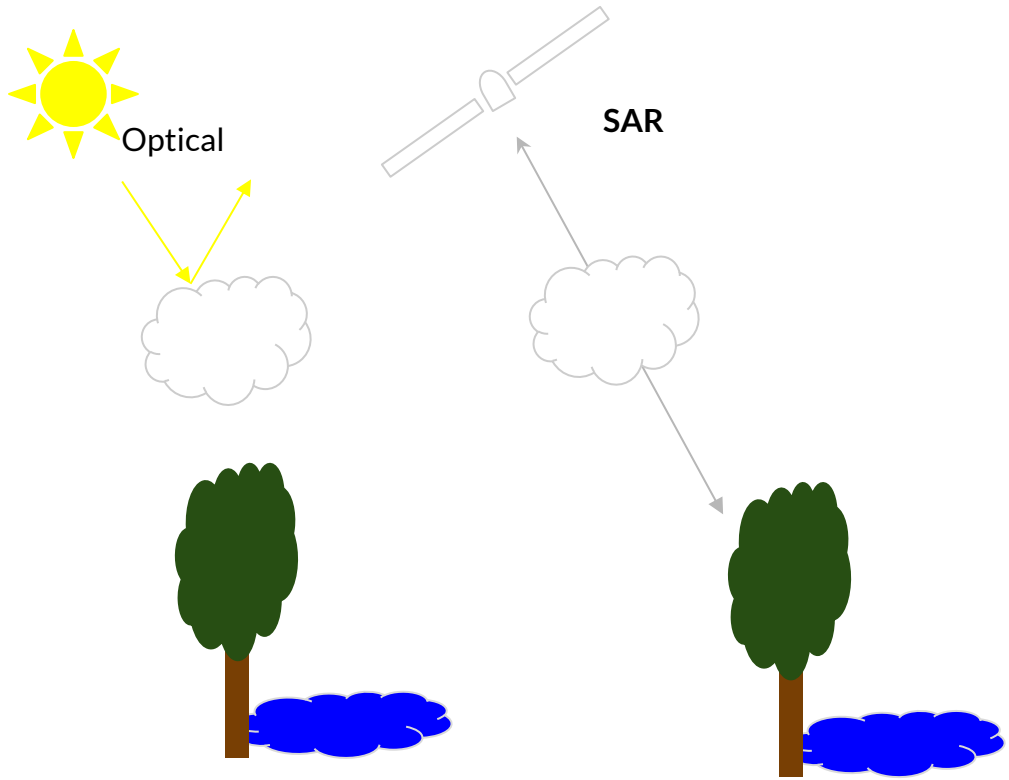
link

Problem:

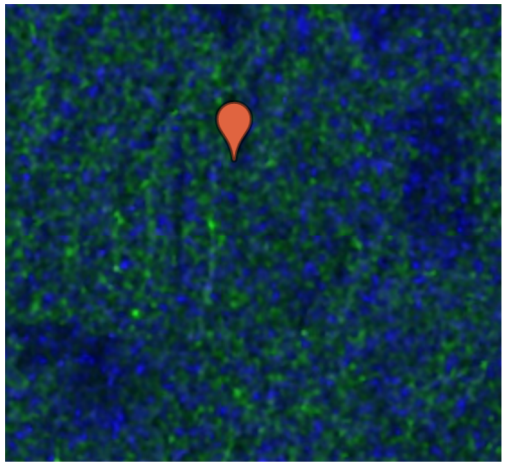
Satellite remote sensing can be extremely useful to map forest disturbances over fast areas. However, persistent cloud cover remains a major constraint in tropical regions.

Objective:

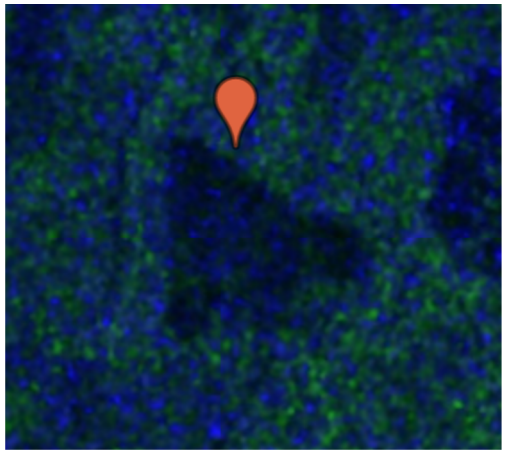
Determine forest disturbance hotspots using cloud penetrating radar technology in order to produce near real time information on forest loss.

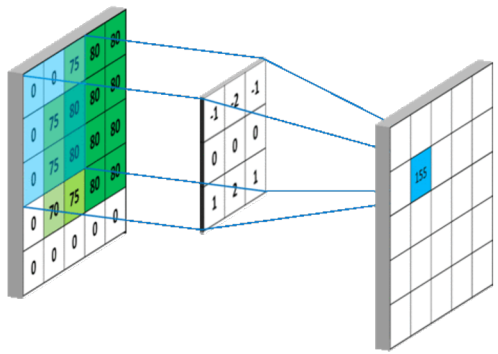

Optical
SAR

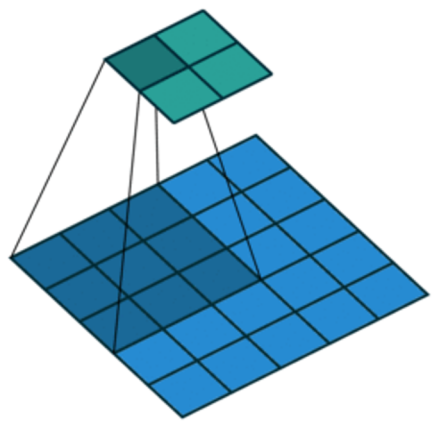
Before

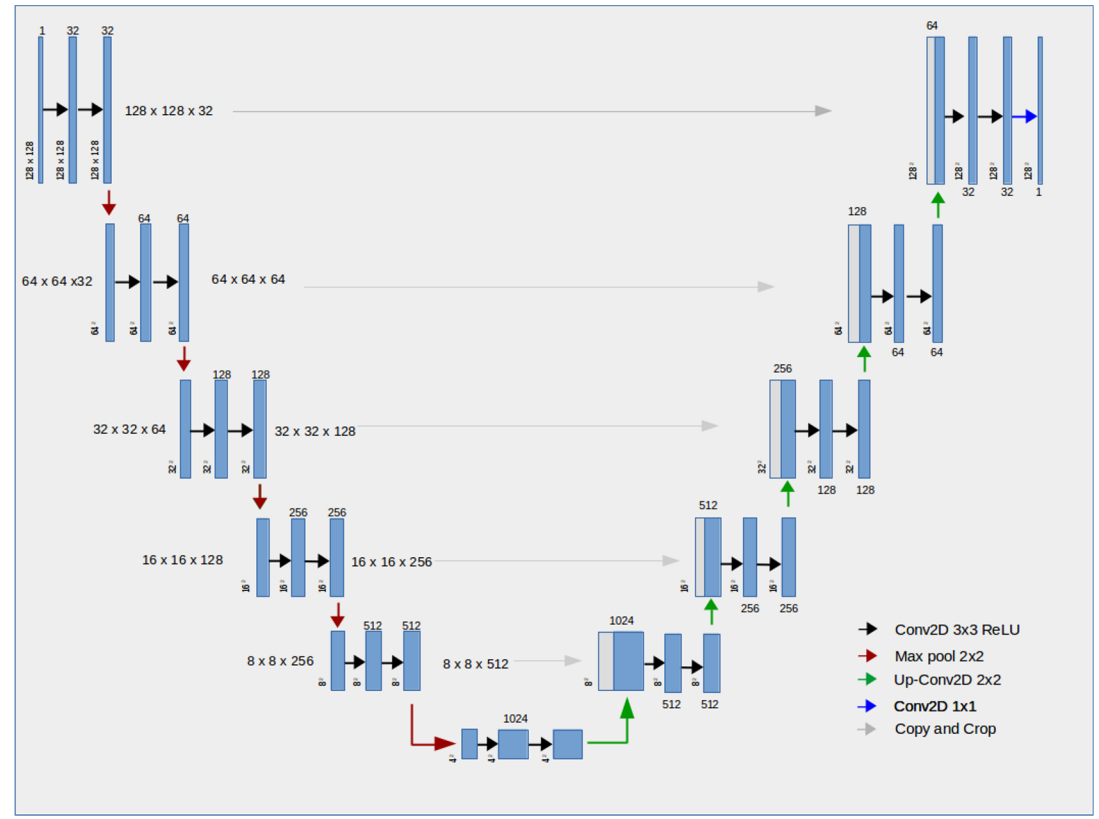


After





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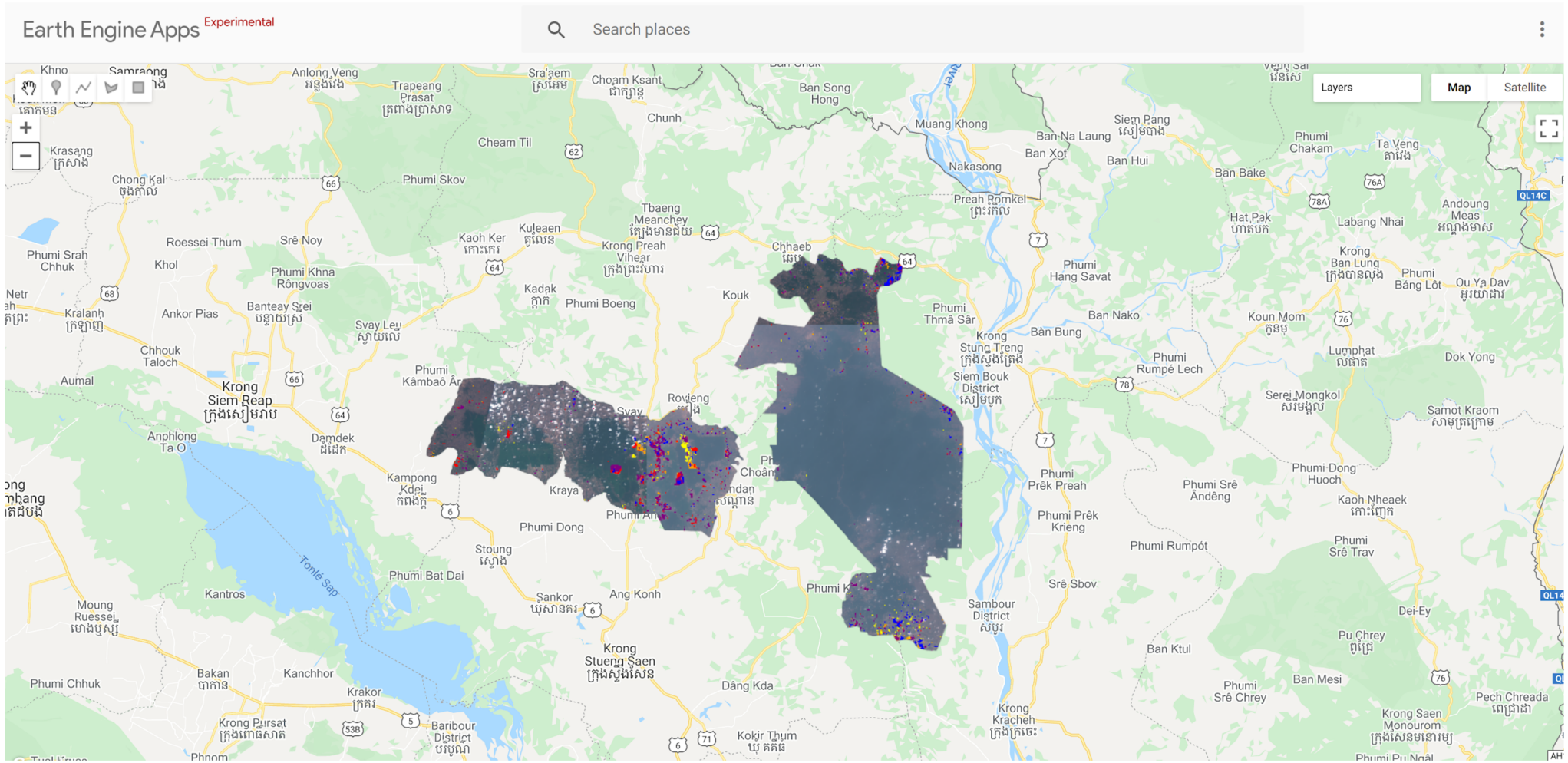
64 x 64 x32
64 x 64 x 64
32 x 32 x 64
32 x 32 x 128
16 x 16 x 128
16 x 16 x 256
8 x 8 x 256
8 x 8 x 512
Conv2D 3x3 ReLU
Max pool 2x2
Up-Conv2D 2x2
Conv2D 1x1
Copy and Crop



https://servir-mekong.earthengine.app/view/forestalert