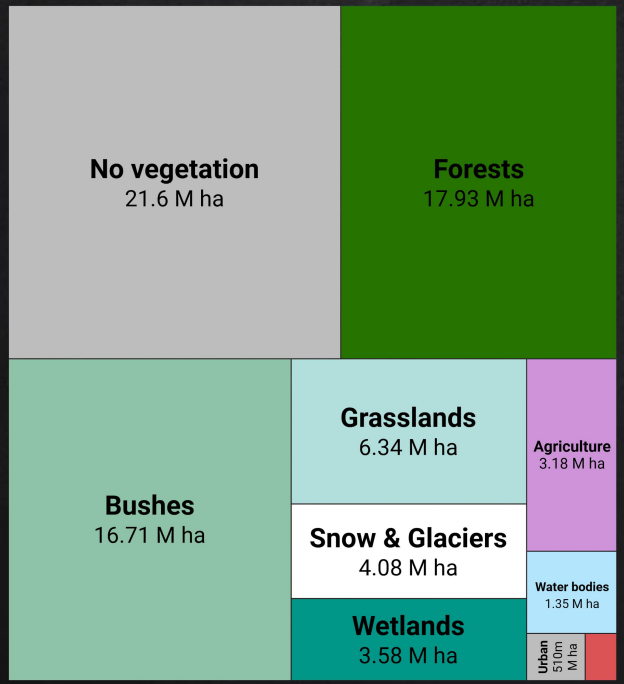
Logging and Extraction Monitoring Unit (LEMU)

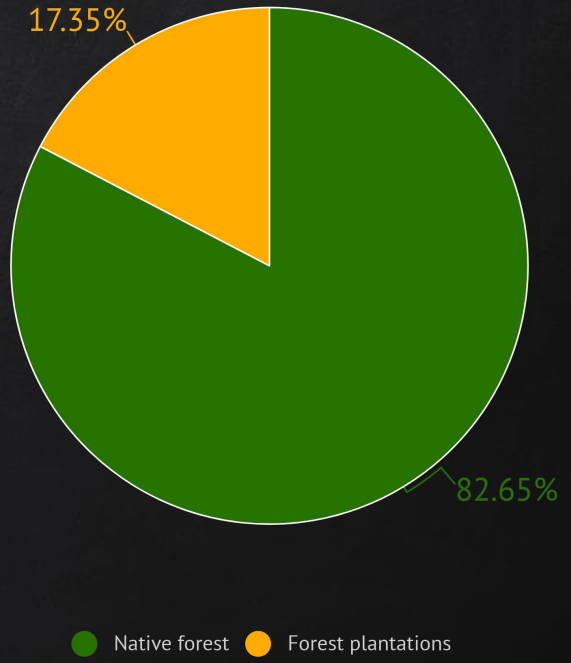
Gonzalo Tapia Koch

FOREST RESOURCES IN CHILE

75.6 M ha



17.9 M ha



KEY PROBLEMS

LOW SCALE OF ILAT ACTIVITIES

CLIMATIC CONDITIONS

GEOGRAPHICAL COVERAGE

RESTRICTED ACCESS

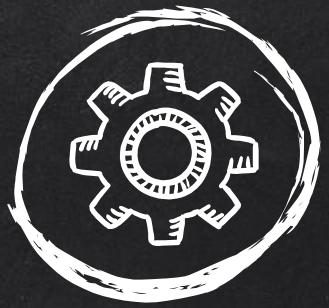
IT MEANS...

'FOREST' IN MAPUDUNGUN (INDIGENOUS LANGUAGE)

AND ALSO LOGGING AND EXTRACTION MONITORING UNIT

OBJECTIVES

Effectiveness
Detect Forest Cover Loss
Focus on-field activities
Optimize resources
Efficiency



How LEMU works?

GEE

Advantages

- Open access
- Internet based
- Cloud computing

Disadvantages

- Requires programming skills

Cover Changes (losses)

SEARCH

Date 1

Date 2

Satellite

Bands combination

Location

Cloud cover

PROCESSING

Image 1

Image 2

Land use

Vegetation index

Threshold

Min area

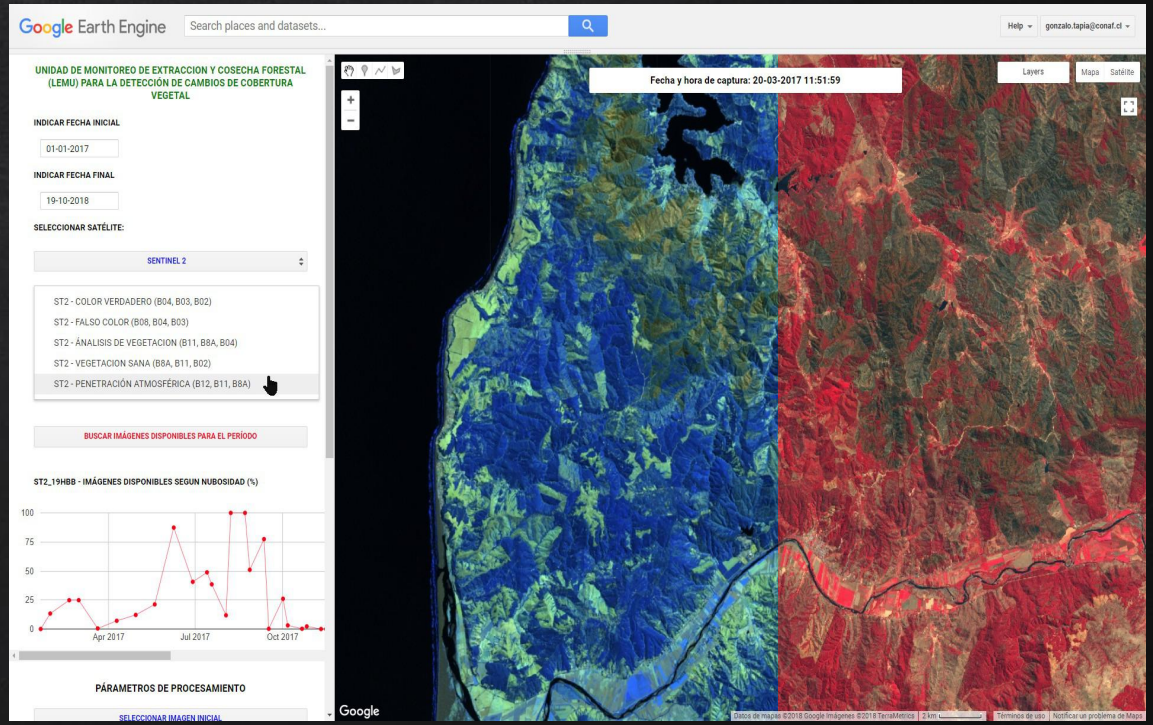
PRODUCTS

Polygons of change

Trend graph

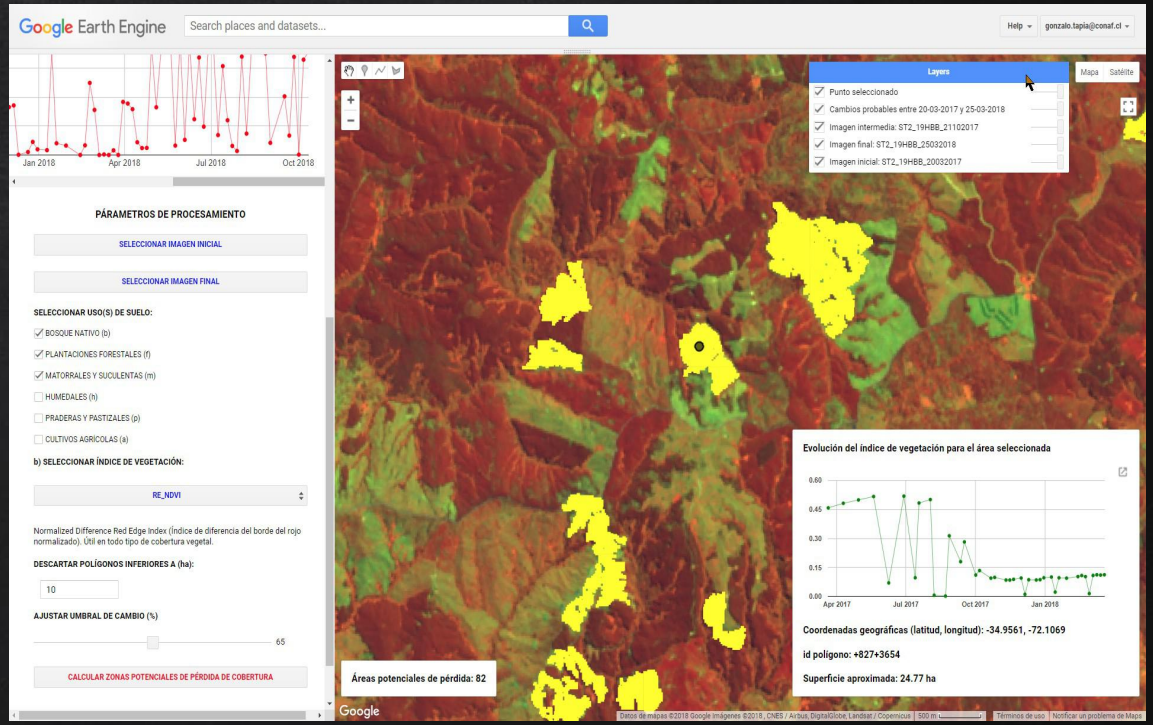
SEARCH

- Dates
- Satellite
- Location
- RGB
- Cloud cover

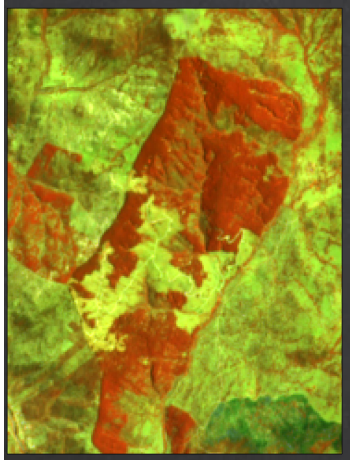


PROCESSING

- Images
- Land Use
- Veg Index
- Min area
- Threshold

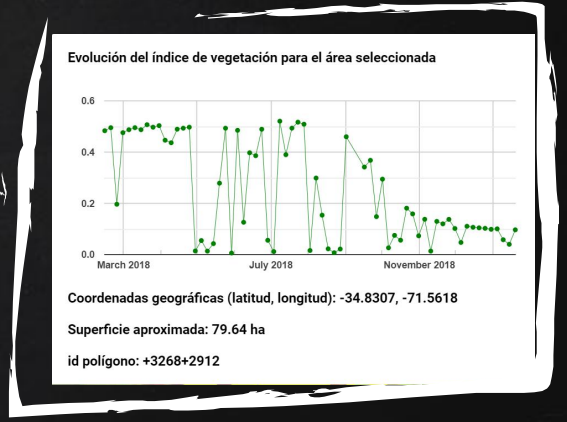


PRODUCTS

BEFORE	AFTER
	

.GEOTIFF

.KMZ, .KML
.SHP, .GEOJSON



.CSV, .SVG
.PNG

CHALLENGES

- ✘ CLOUD COVER
- ✘ USABILITY
- ✘ ENGAGEMENT
- ✘ WORKFLOW

CLOUD COVER

Jul 2018

Winter

Feb 2019

Summer

- ✗ 5 day mosaics
- ✗ N – months mosaics

USABILITY

- ✘ User centered design
- ✘ Fast processing and results

Less than 1 min

ENGAGEMENT

- ✘ Users got involved since start
- ✘ One instructor on each region
- ✘ Training sessions And User Manual

120 Users

WORKFLOW

- ✘ Fits with procedures on planning stage
- ✘ It's Complementary with UAV

2018 RESULTS

100% REGIONS – 66% PROVINCES

2,990 HA – 305 AREAS

93%
EFFECTIVENESS

THANKS!

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