Using Earth Observation Data Cube to Mapping Burned Areas

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Introduction

Burned Areas

Food and Agriculture Organization of the United Nations

INPE Programa Queimadas

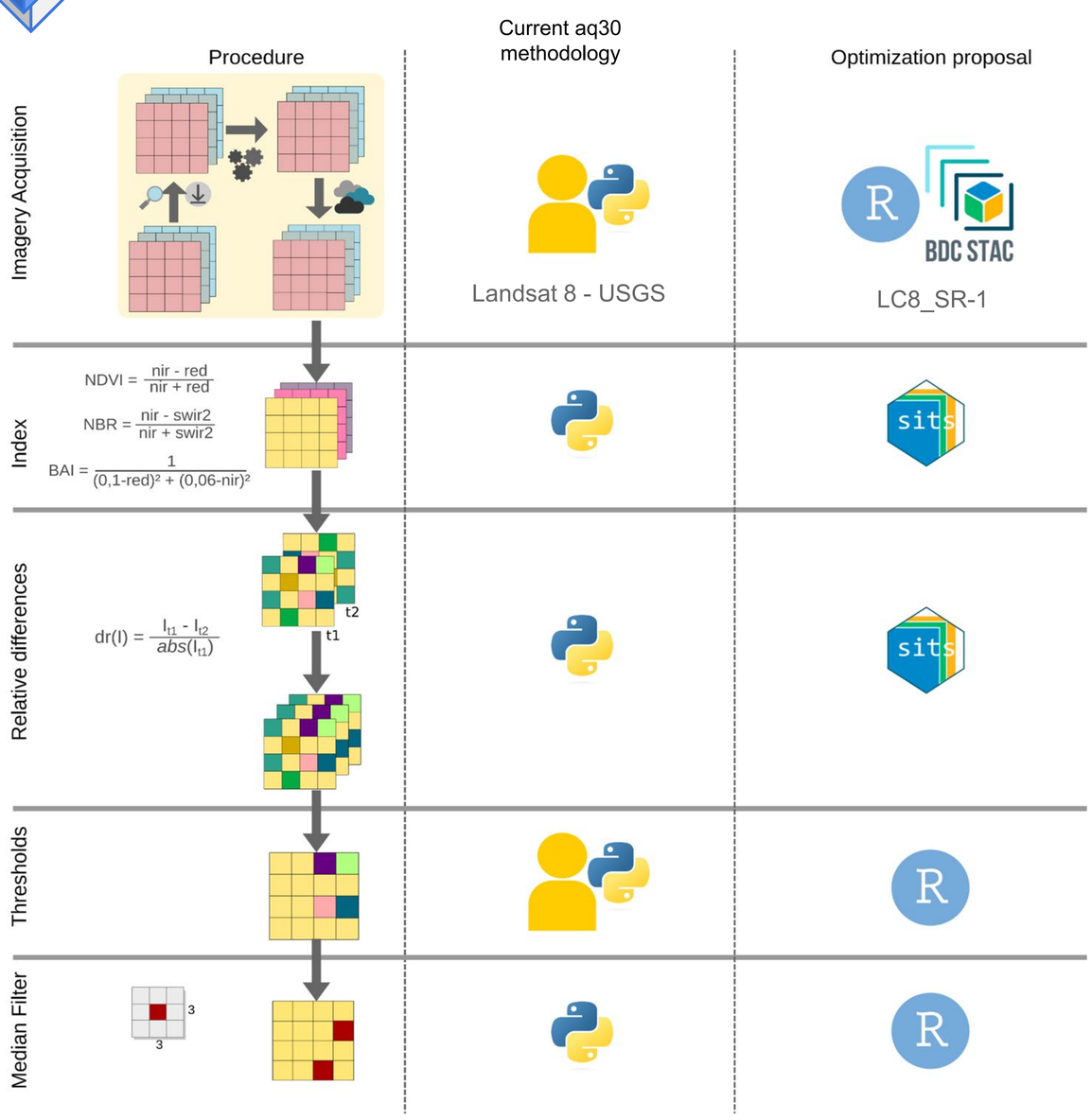
Create guidelines: resolution: 30m, 24h

Monitoring is very important to address Climate Changes

Monitoring fire since 1994. Aq30m starts 2015

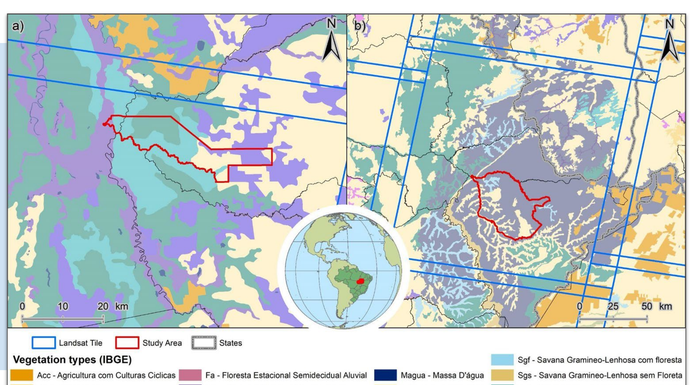
This work aims to evaluate the process of improving the mapping of the burned area used by the INPE's Queimadas Program using Earth Observation (EO) data cubes, developed by the Brazil Data Cube (BDC) project.

Optimization Proposal



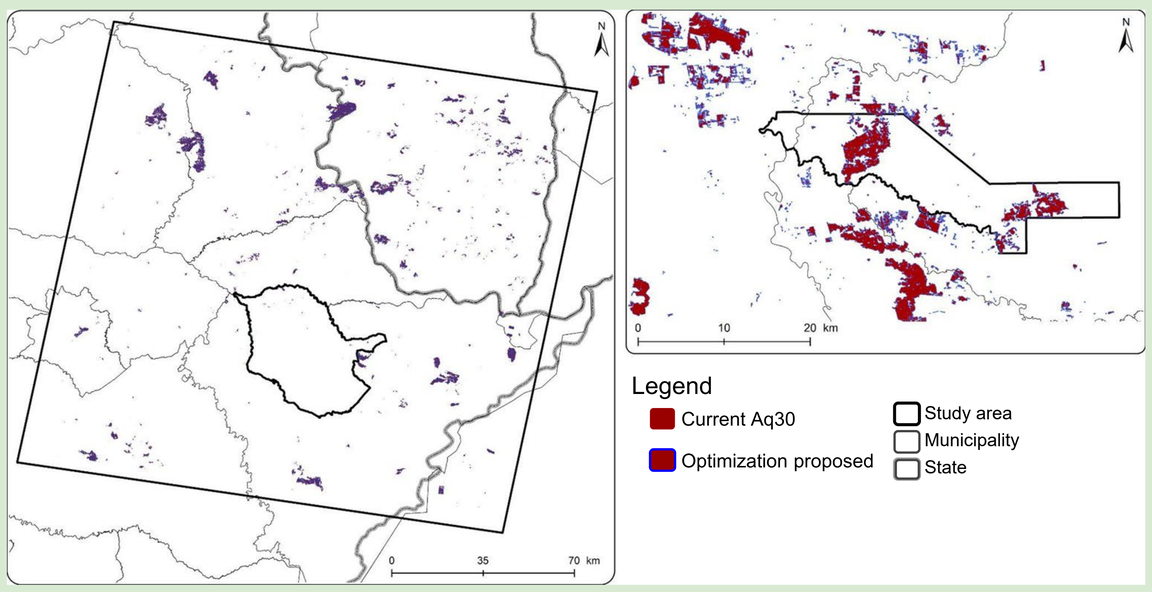
Two areas were chosen in the Cerrado biome.

- Small scale: rural settlement São Judas Tadeu;
- Large scale: Landsat Tile covered by the Jalapão State Park.



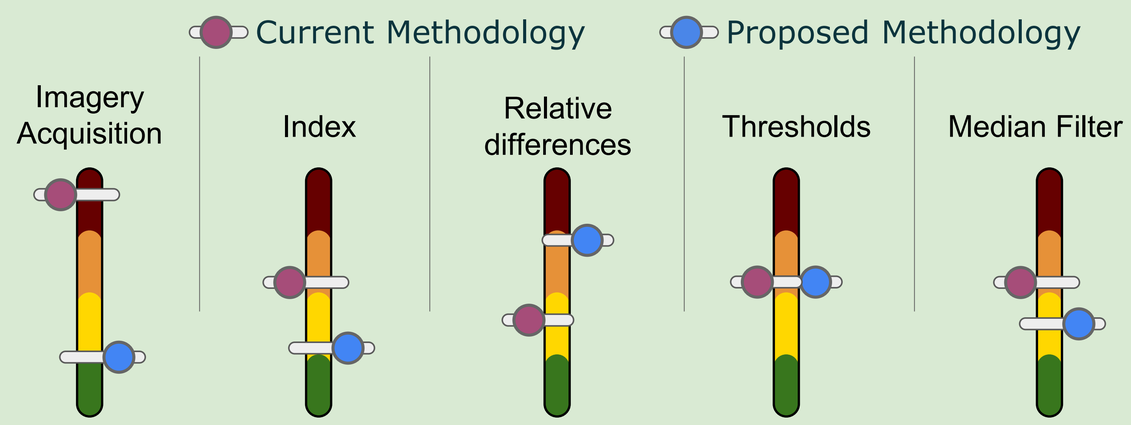
Results

Burned area mapped by each methodology



Methodology	São Judas Tadeu Settlement (A)		Tile Landsat 227_061 (B)	
	%	km²	%	km²
Current Aq30m	0,72	1,00	0,68	3,54
Optimization proposed	1,68	2,32	0,74	3,86
Concordance	97,60	134,69	98,59	516,65
Total	100	138,00	100	524,05

Average time processing the burned area by each step.



Final considerations

- Application of EO data cubes and technologies developed by the BDC project to improve burned areas mapping.
- Compatibility evidence of the technologies between the BDC and the INPE's Queimadas Program.
- BDC technology allows access to a large amount of data without the need for downloads and pre-processing.
- Future application: test new improvements, such as the use of Sentinel data.