



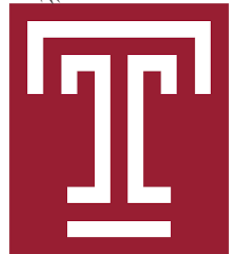
Gutierrez–Integrating Earth Observations for biodiversity decisions



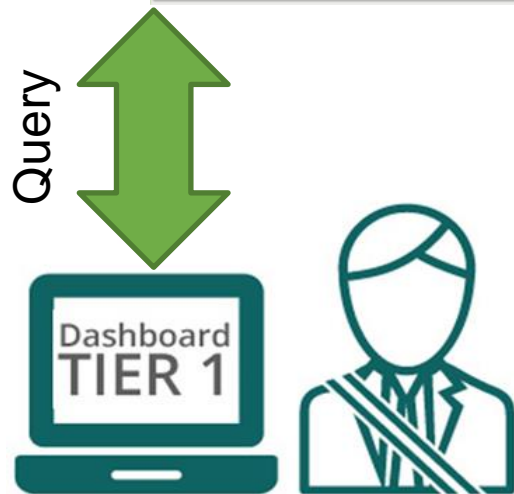
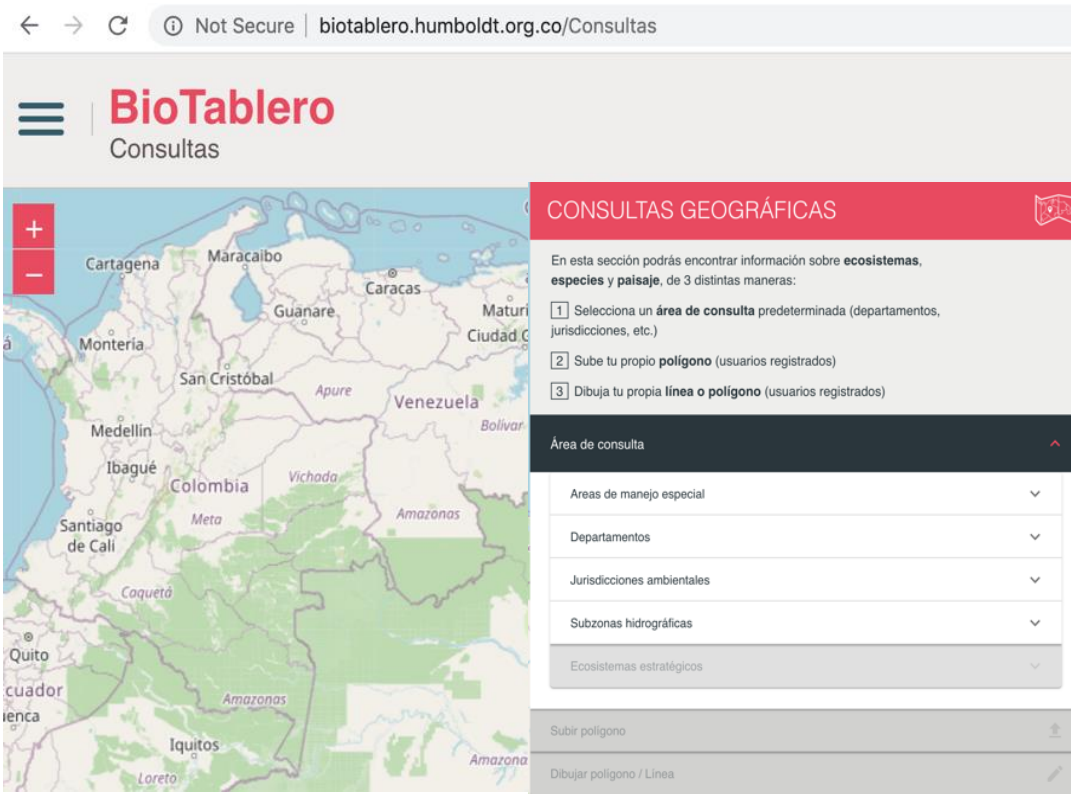
Victor Hugo Gutierrez-Velez¹, Maria C. Londoño², Wilson Lara¹, Ivan Gonzalez, Daniel Lopez², Erica Suarez², Jeronimo Rodriguez¹

¹ Temple University · ² Institute von Humboldt

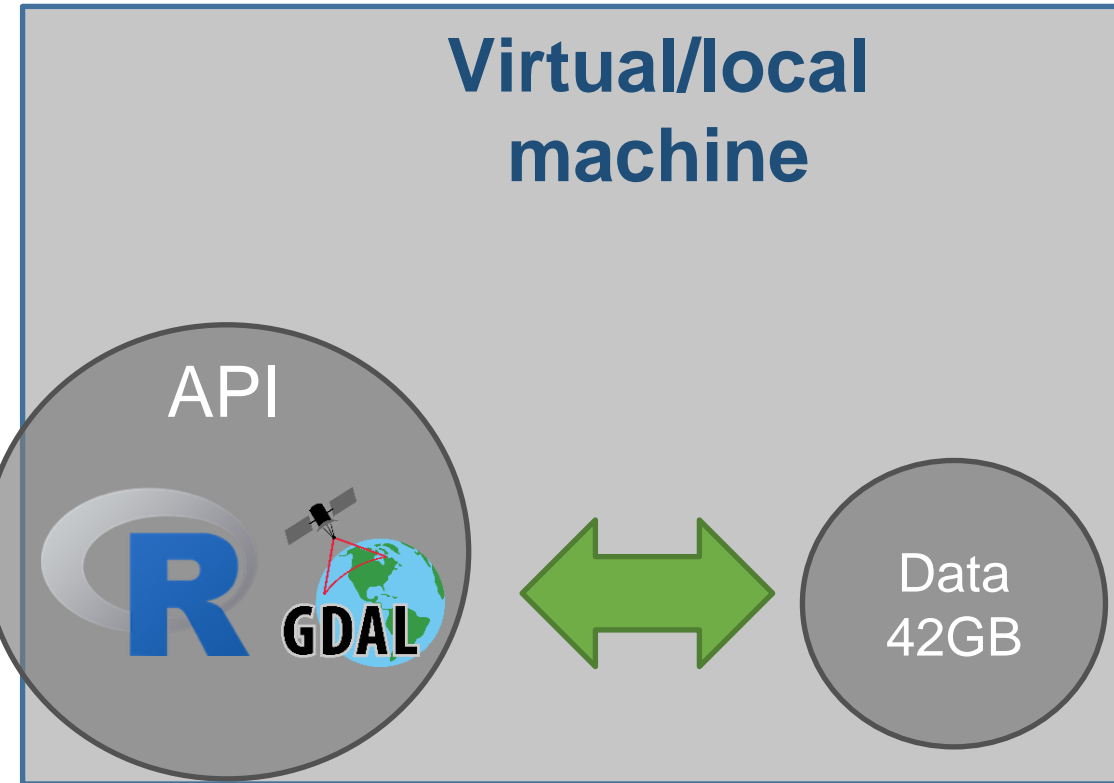
1. We present an integrated system that harnesses the potential of national and global Earth Observation products to inform decisions on biodiversity management and planning in Colombia.
2. The system combines:
 - a **cloud data catalog and processing infrastructure** that harmonizes both national and global products to produce SBI derived from EBVs.
 - a user-friendly **graphical interface** that assists decision-makers and other relevant stakeholders to retrieve spatial EBV products and indicators.
 - a suite of **software applications** that streamlines the production of workflows and new spatial data **products** with the potential to further expand the functionality of the system.
3. The system allows for scalability as new data and applications are developed and also portability that makes it adaptable to other other BONs worldwide.



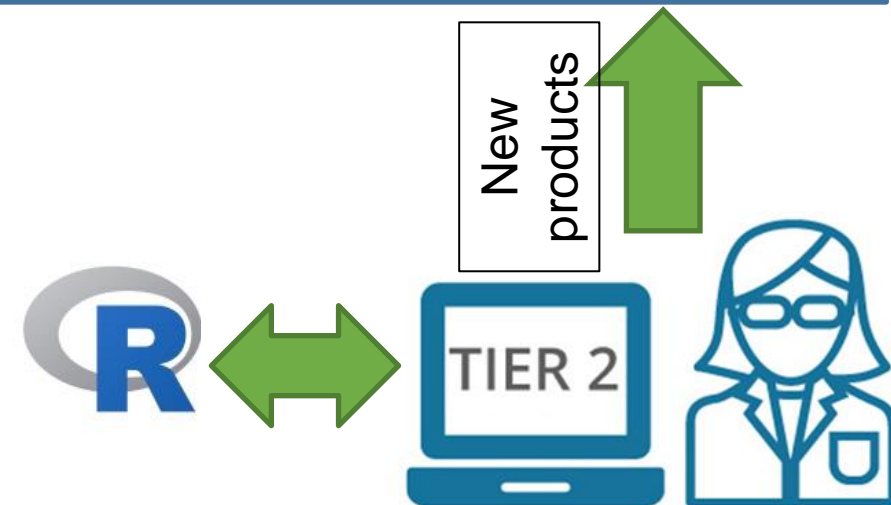
1. Front-end



2. Back-end



3. Software



Integrating Ecological Remote Sensing Data to Derive EBV Metrics



Documentation for package
'ecochange' version 1.3

[https://cran.r-project.org/web/packages/ecochange/ecochange.](https://cran.r-project.org/web/packages/ecochange/ecochange)

Methods in Ecology and Evolution



Editors: Aaron Ellison, Bob O'Hara, Natalie Cooper and Nicolas Lecomte

Impact factor 2021: 8.33

2022 Journal Citation Reports (Clarivate Analytics):

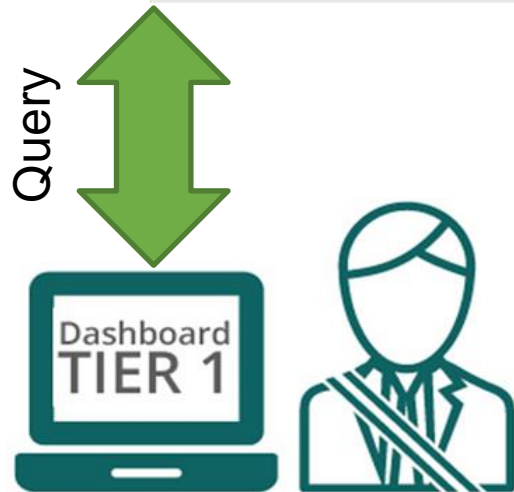
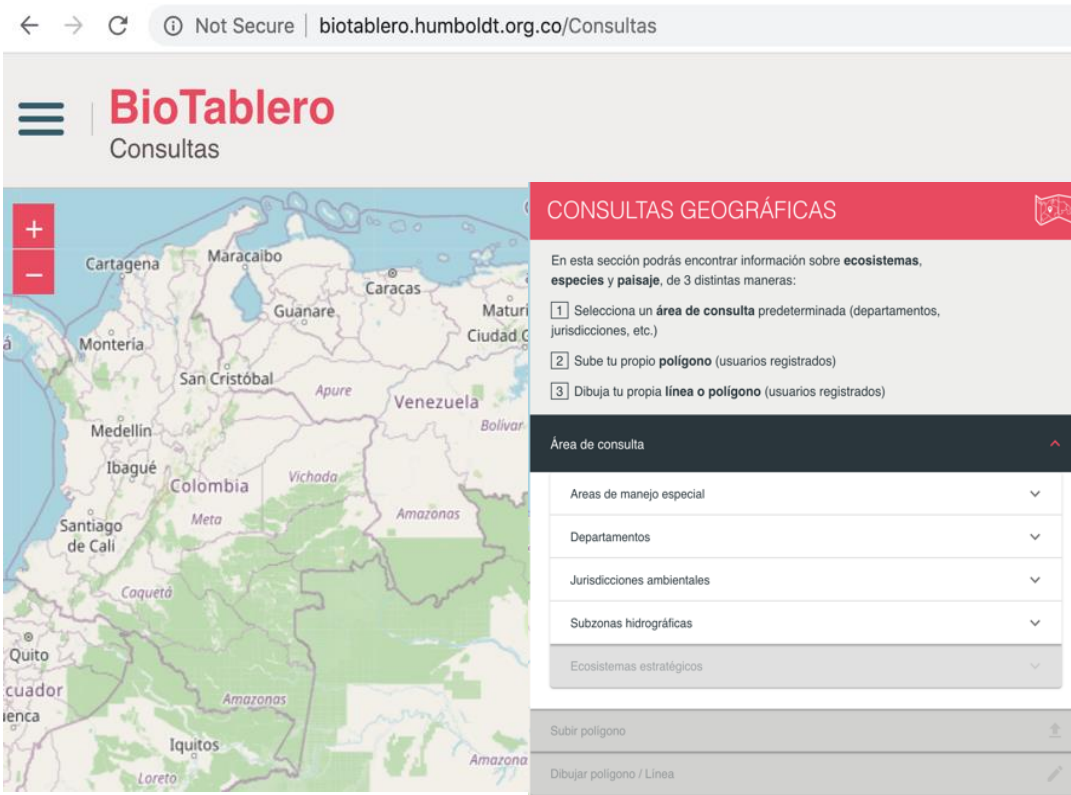
10/174 (Ecology)

ecochange: An R-package to derive ecosystem change indicators from freely available Earth Observation products

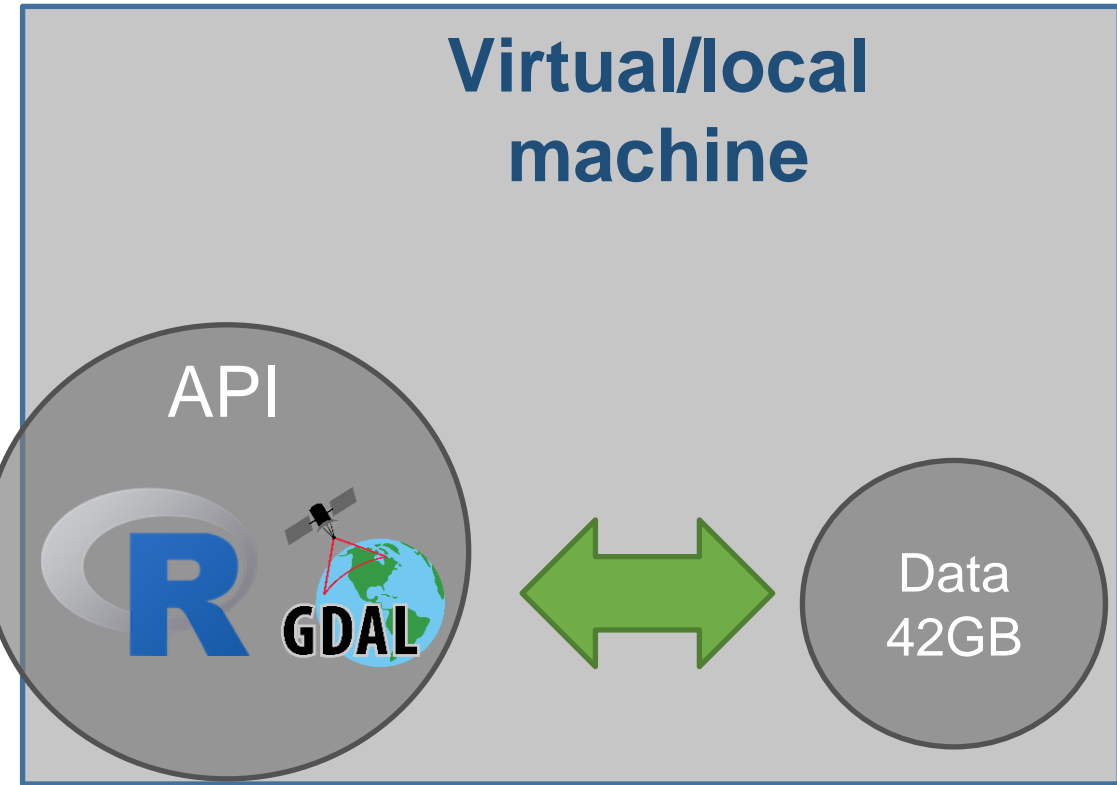
Lara et al (in press)

Layer	Dataset	Author
occurrence change seasonality recurrence transition extent	Global Surface Water	Pekel et.al., 2016
treecover2000 lossyear gain datamask first last	Global Forest Change	Hansen et.al., 2013
TC_2000 TC_2005 TC_2010 TC_2015	Global Continuous Tree Cover data	Sexton et.al., 2013

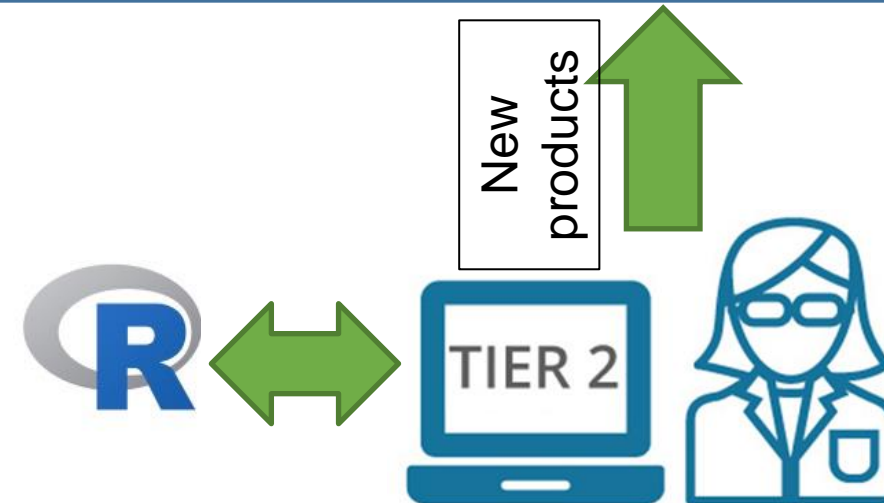
1. Front-end



2. Back-end



3. Software



High-Resolution Global Maps of 21st-Century Forest Cover Change

Science

High-resolution mapping of global surface water and its long-term changes

nature

Annual maps of global artificial impervious area (GAIA) between 1985 and 2018

Remote Sensing
of
Environment

High-spatiotemporal-resolution mapping of global urban change from 1985 to 2015

nature
sustainability

Mapping and sampling to characterize global inland water dynamics from 1999 to 2018 with full Landsat time-series

Remote Sensing
of
Environment

Global Food Security-Support Analysis Data at 30 m (GFSAD)



MAPPING TREE PLANTATIONS WITH
MULTISPECTRAL IMAGERY: PRELIMINARY
RESULTS FOR SEVEN TROPICAL COUNTRIES



WORLD
RESOURCES
INSTITUTE

Análisis de tendencias y patrones espaciales de deforestación en Colombia



ECOSISTEMAS CONTINENTALES, COSTEROS Y MARINOS DE COLOMBIA



Identificación espacial de los sistemas de humedales continentales de Colombia



BioModelos



MEJORES MODELOS CON EL APOYO DE EXPERTOS

Evaluación de tierras: zonificación



METODOLOGÍA CORINE LAND COVER



Mapa Indicativo de Factores de Compensación



MINAMBIENTE

Regiones bióticas delimitadas para los grupos taxonómicos de aves, mamíferos y herpetos.

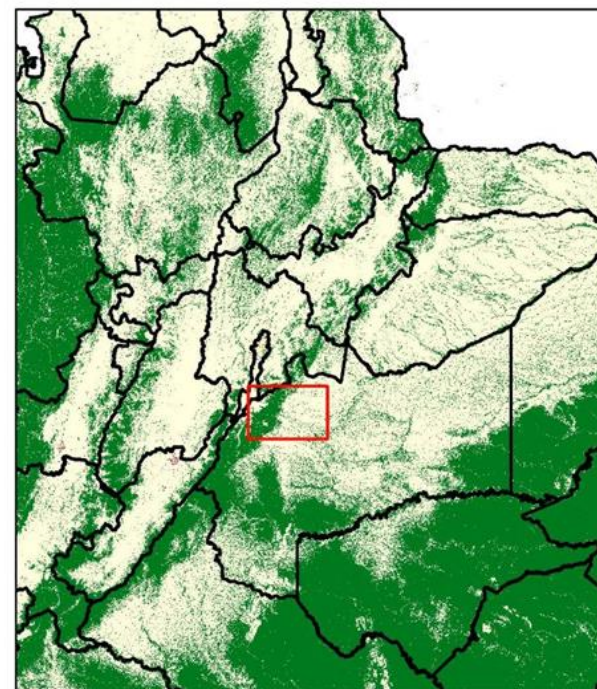
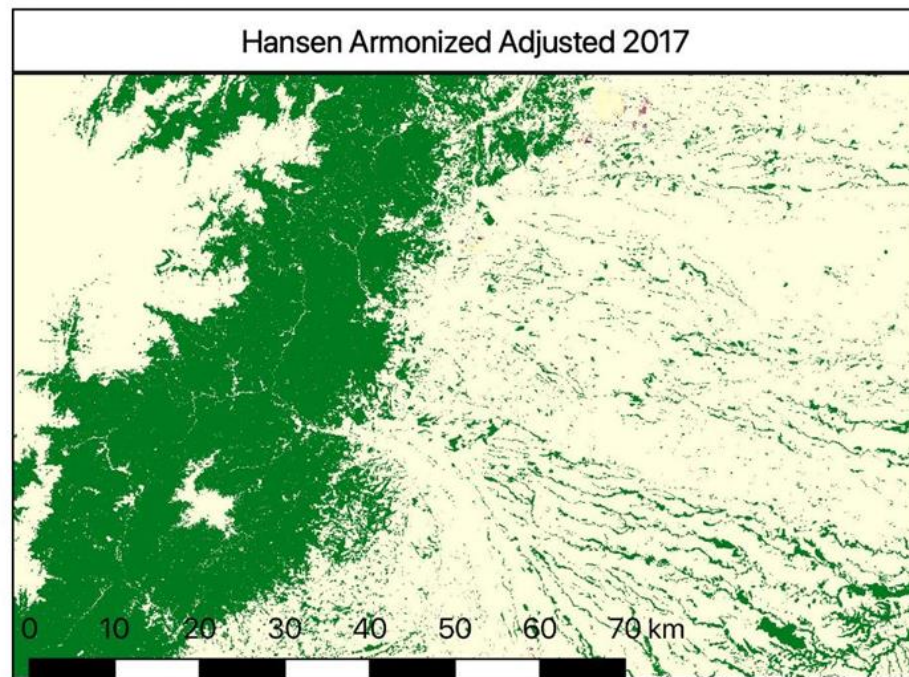
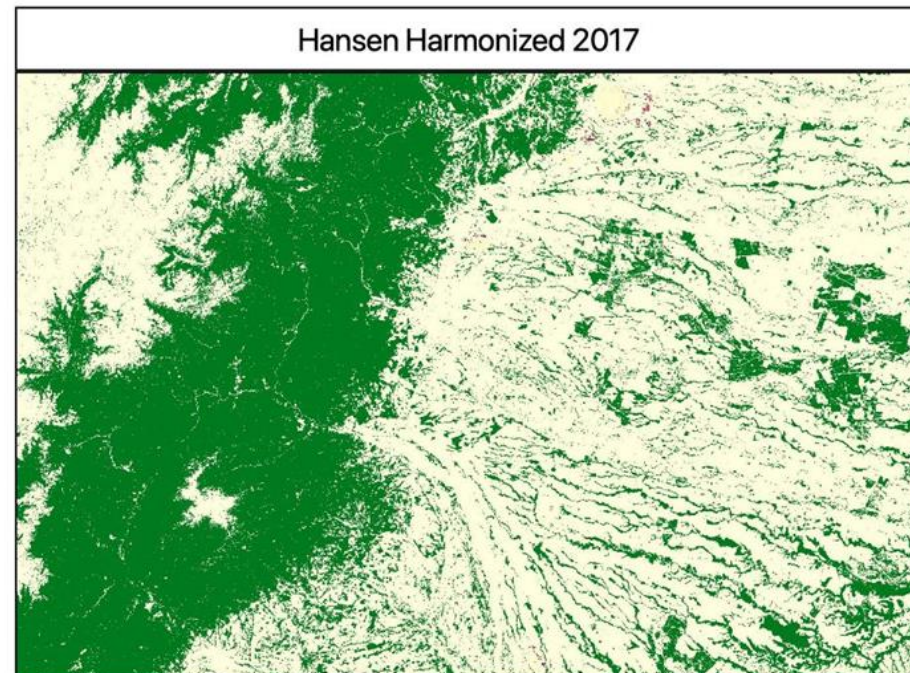
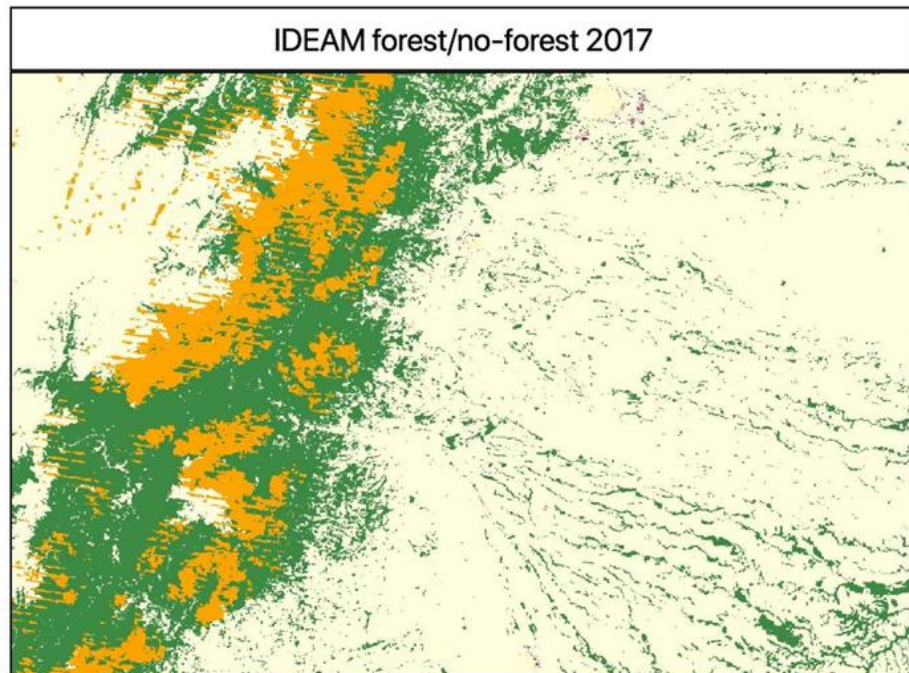


Year available

2021
2020
2019
2018
2017
2016
2015
2014
2013
2012
2011
2010
2009
2008
2007
2006
2005
2004
2003
2002
2001
2000

IDEAM

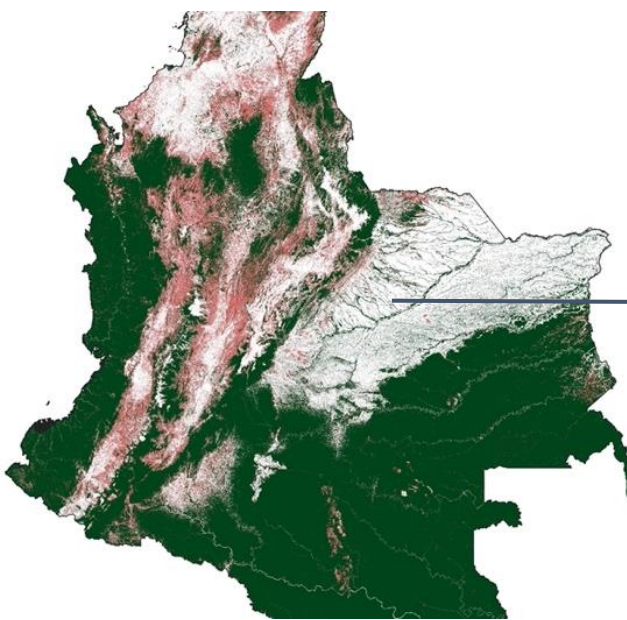
Hansen



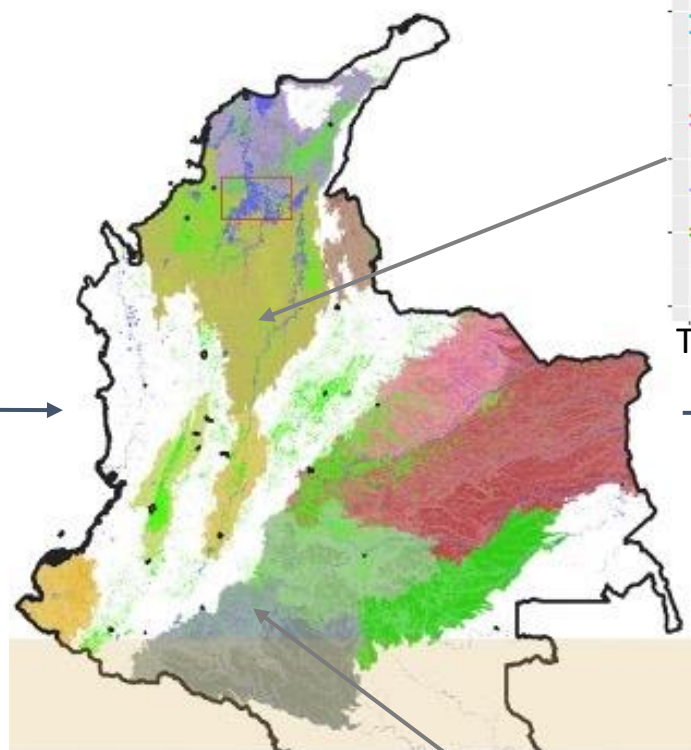
Classes

- Forest
- No-forest
- no Information

Maximum common extent IDEAM-HANSEN



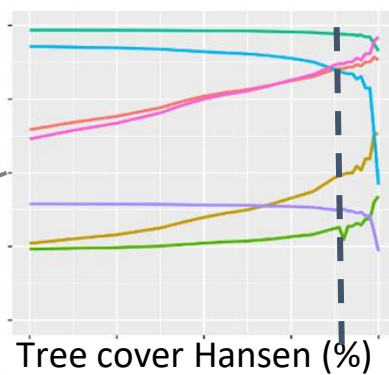
National biotic units



Londoño et al 2015

- Diferencia agregada
- Comisión bosque
- Comisión pérdida
- Comisión no bosque
- Omisión bosque
- Omisión pérdida
- Omisión bosque

Optimal agreement per unit



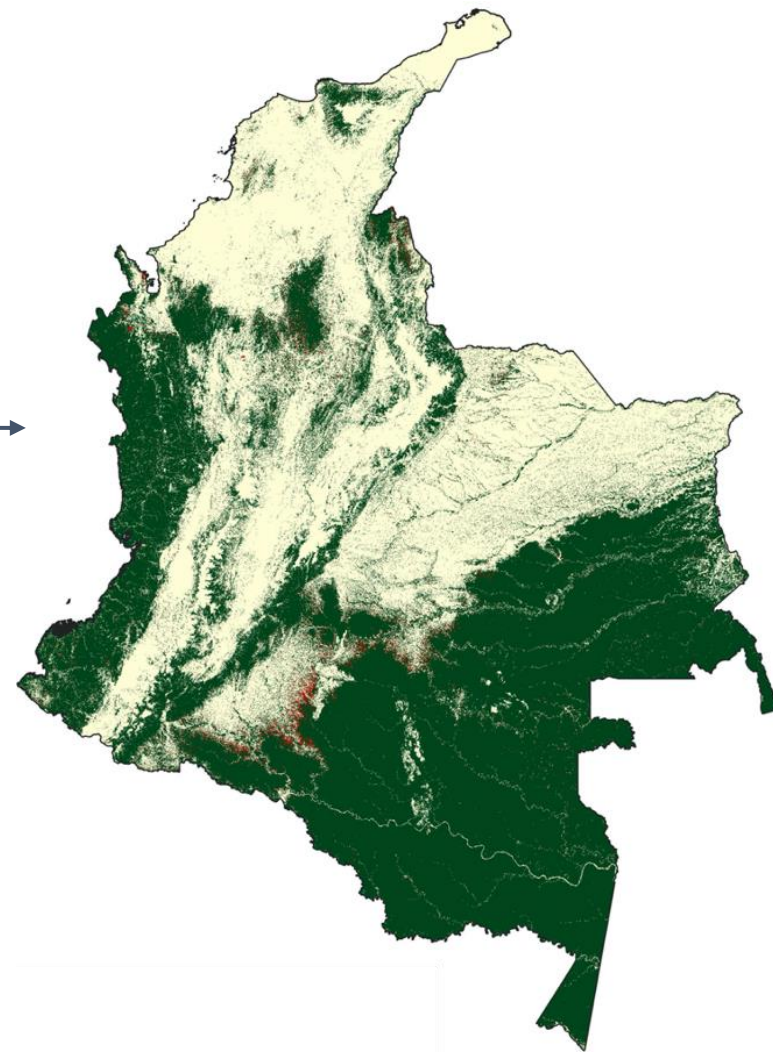
Map agreement (%)

Tree cover Hansen (%)

Map agreement (%)

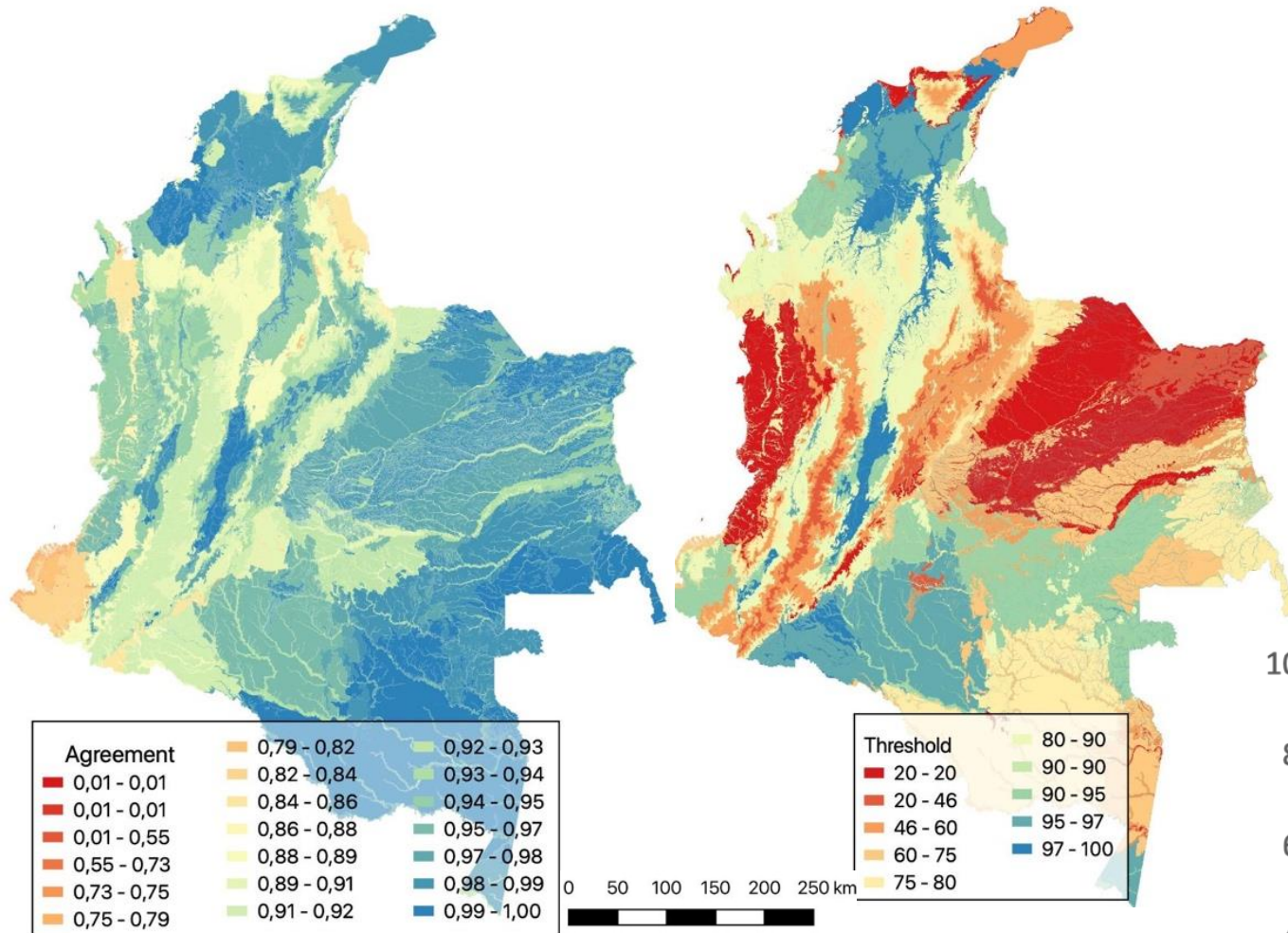
Tree cover Hansen (%)

Harmonized map

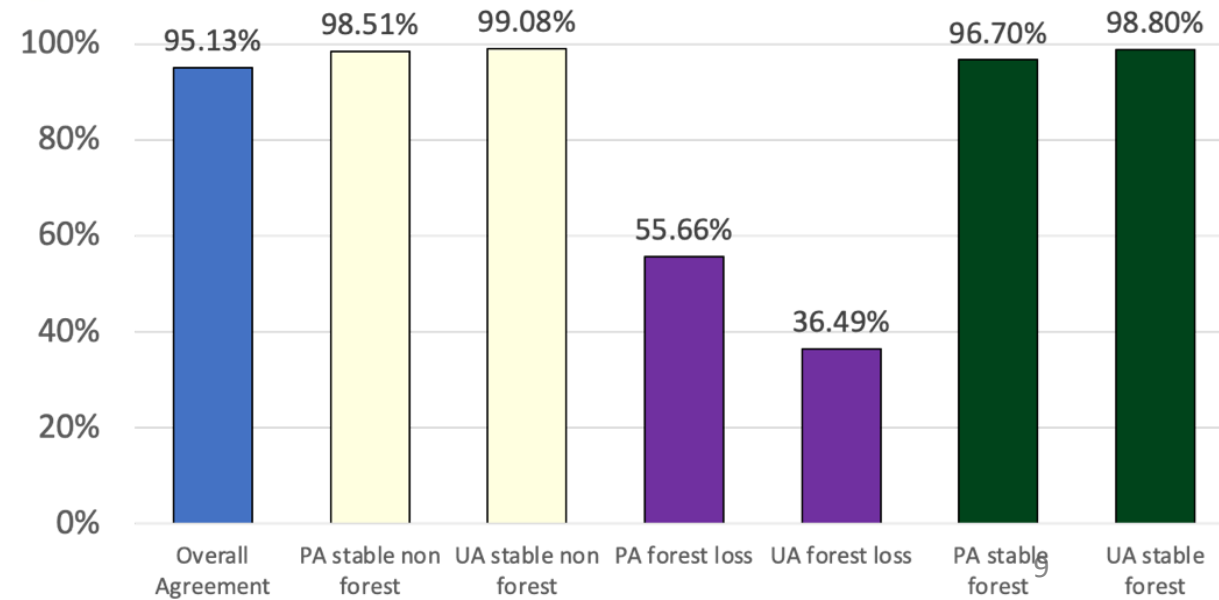


Overall agreement

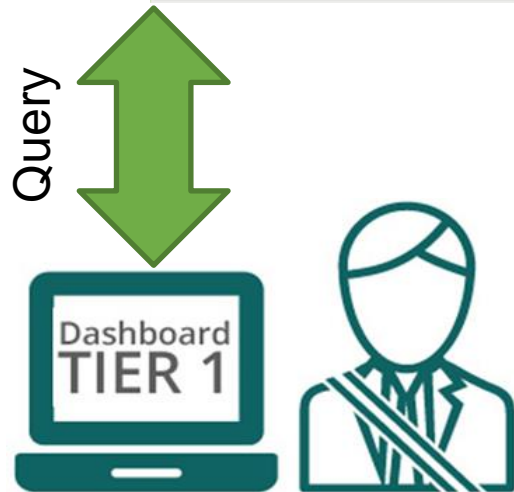
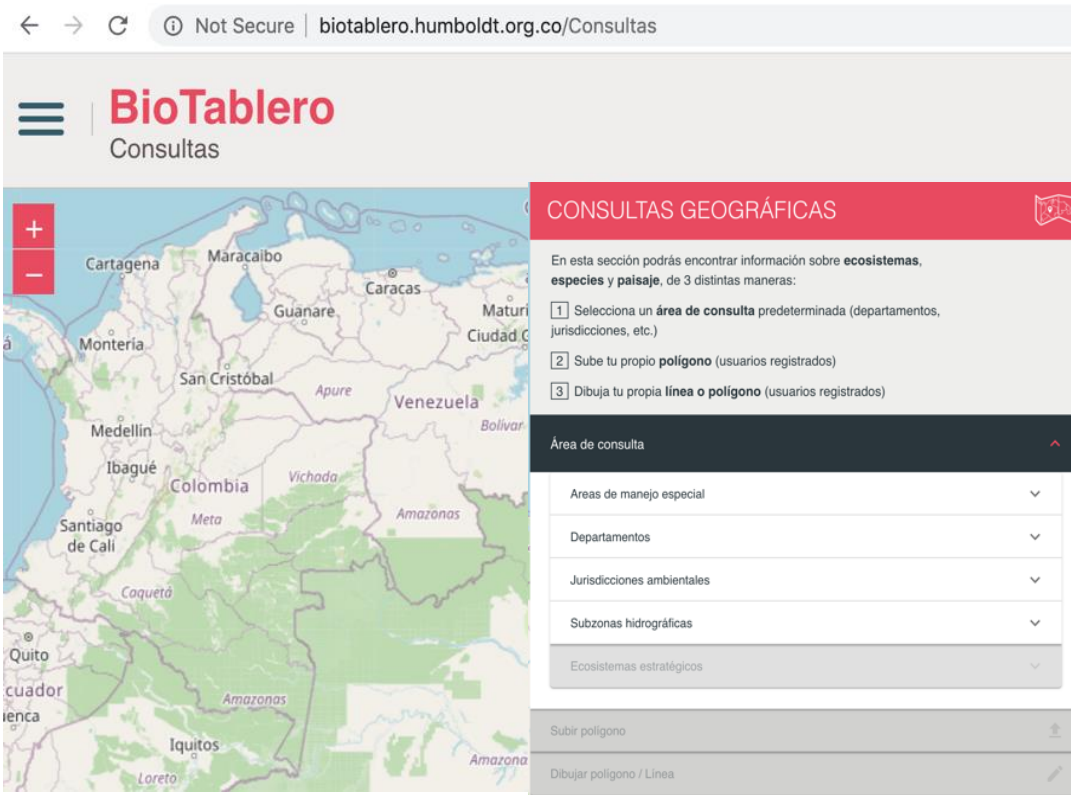
Optimum threshold



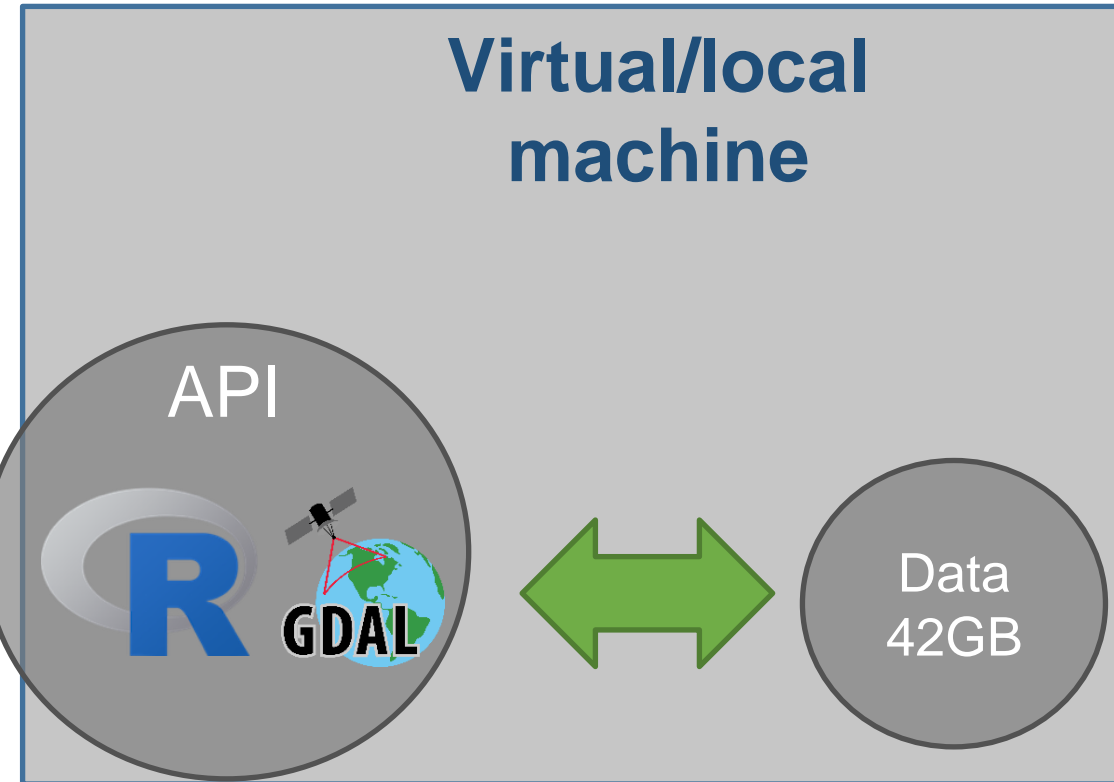
Country wide weighted agreement



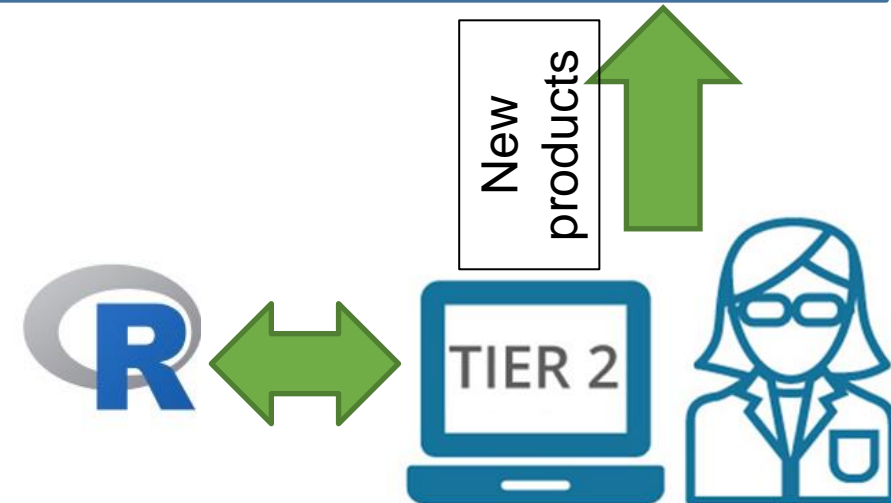
1. Front-end



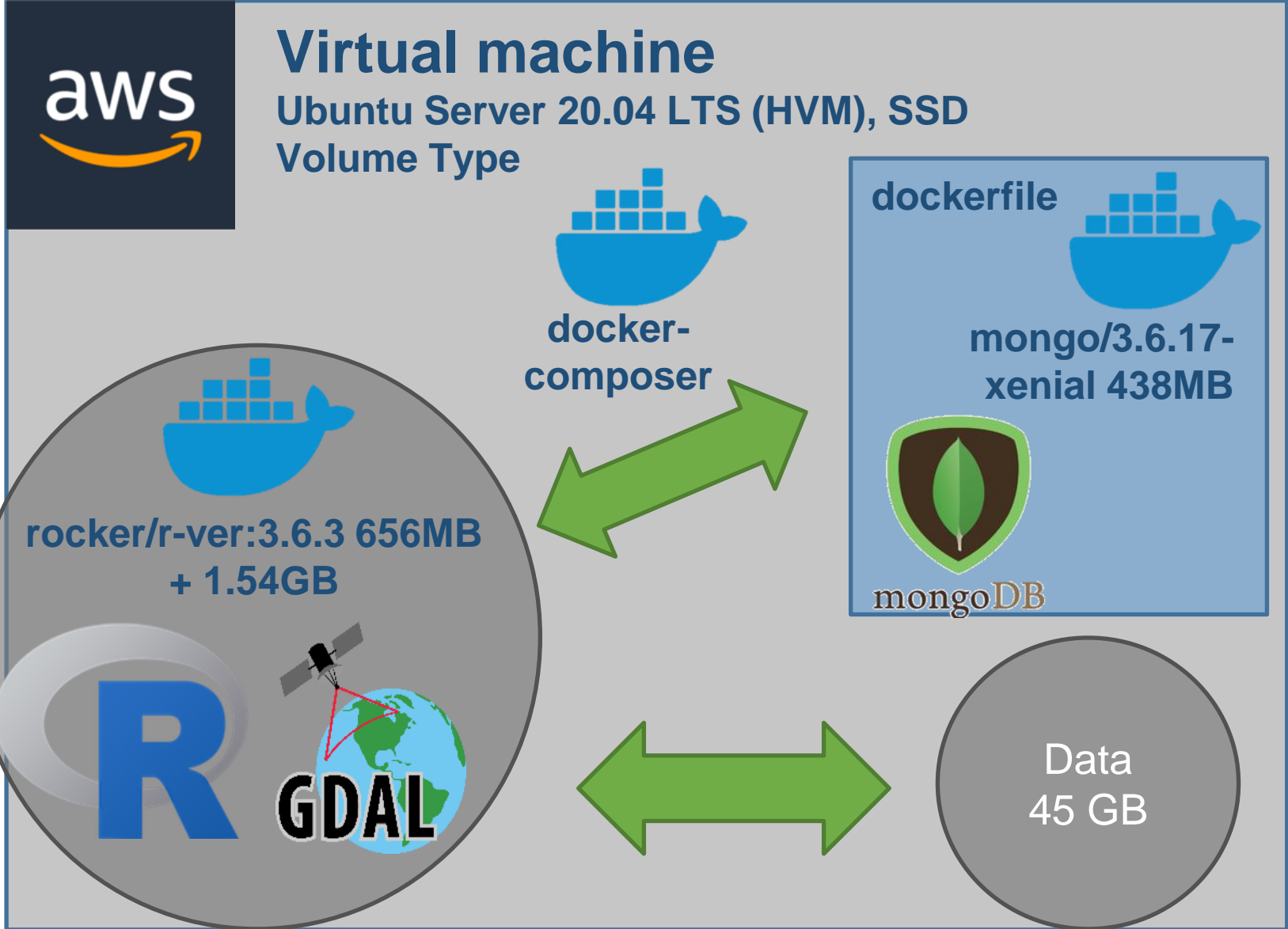
2. Back-end



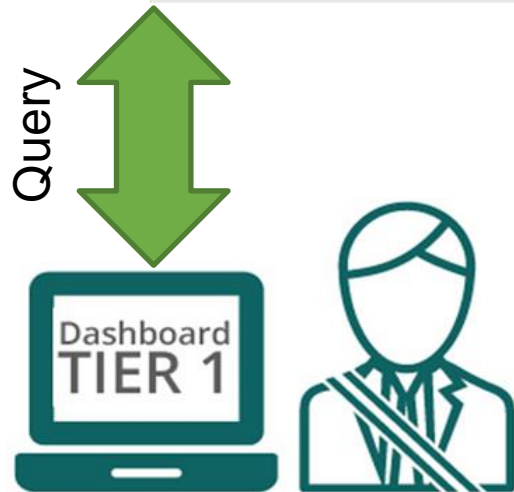
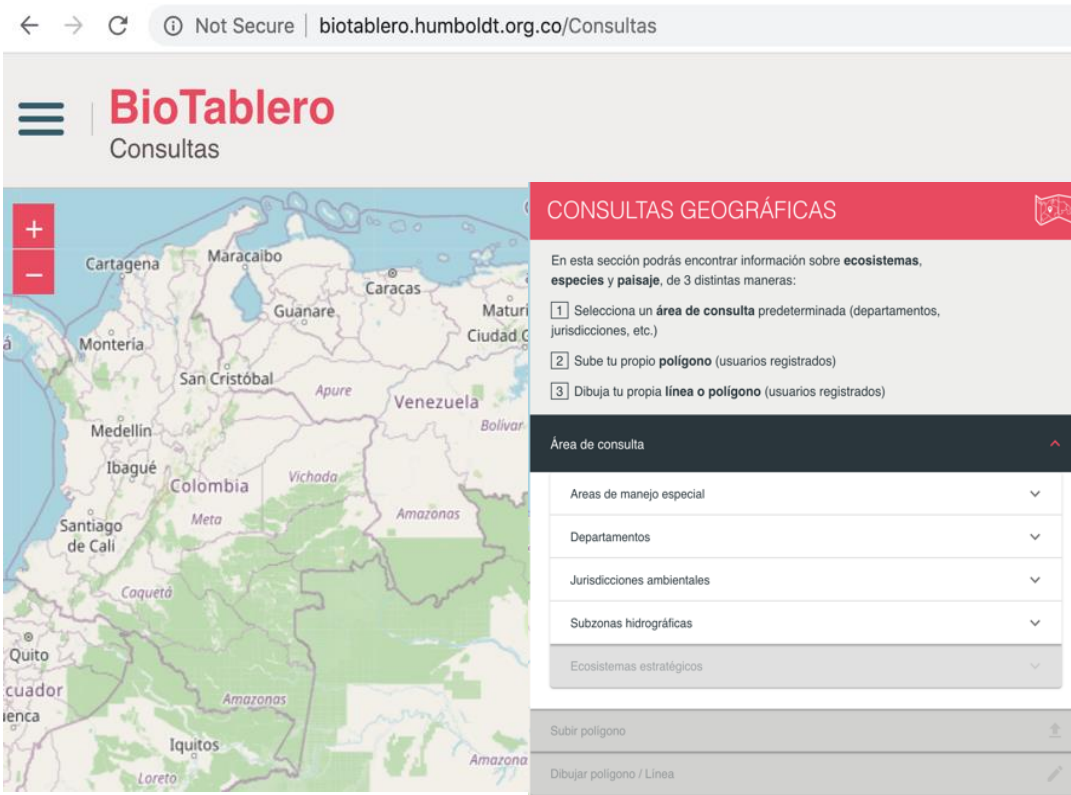
3. Software



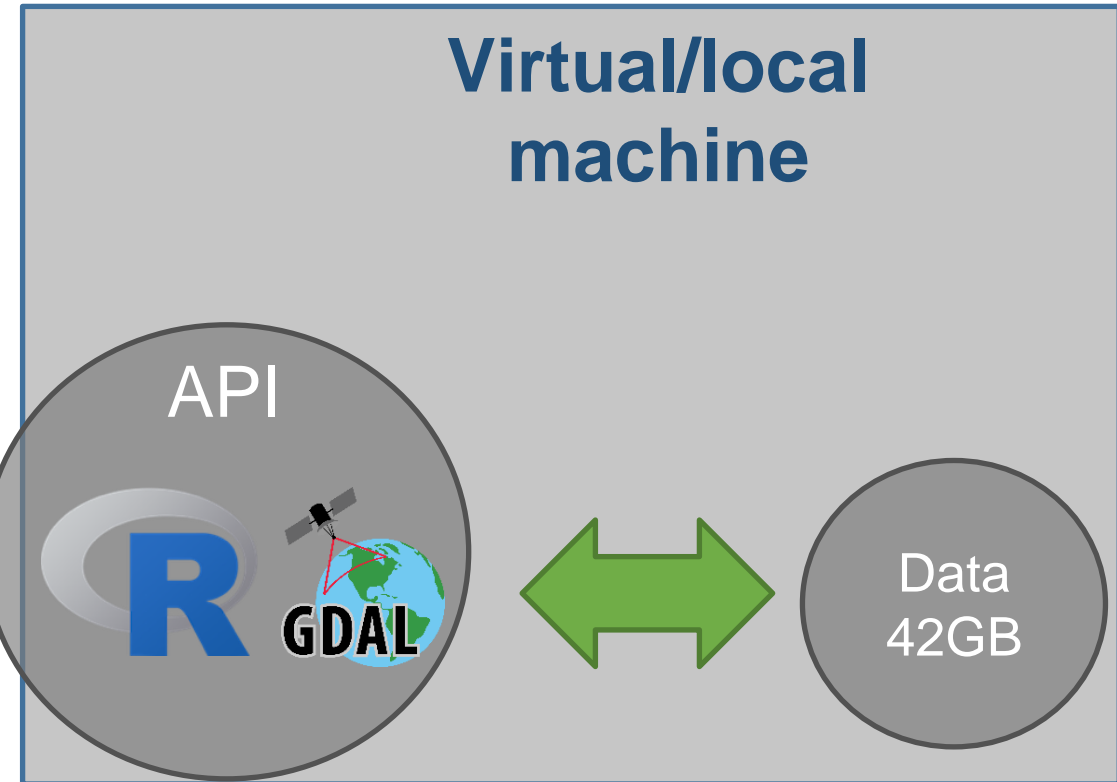
Back-end



1. Front-end



2. Back-end



3. Software

