



ecometrica

EO Labs: improving earth
observation applications



EO Challenges – and answers

1 Fragmented EO activities, limited scale and consistency

Continuous data collection and processing to produce relevant data layers for wall-to-wall time series

2 Data stored on unconnected devices, sharing difficult

Data managed on connected cloud storage, defined access protocols and controls

3 Analysis requires download to GIS

Queries sent to data sets to extract results. Ability to query across multiple data layers and time-series

4 Answers sought on a project by project basis

Investment in continuity and quality of strategic content and services for end-users

EO Lab functions

- Develop regional strategy and demand for EO derived products to address needs in areas such as forests, agriculture, coastal ecosystems, archaeology, security and more
- Develop region specific EO derived content streams through a combination of data products from international research centres, local data and expertise
- Calibrate and validate data products in test sites
- Support local application nodes within the region

EO Labs serve local nodes with relevant content

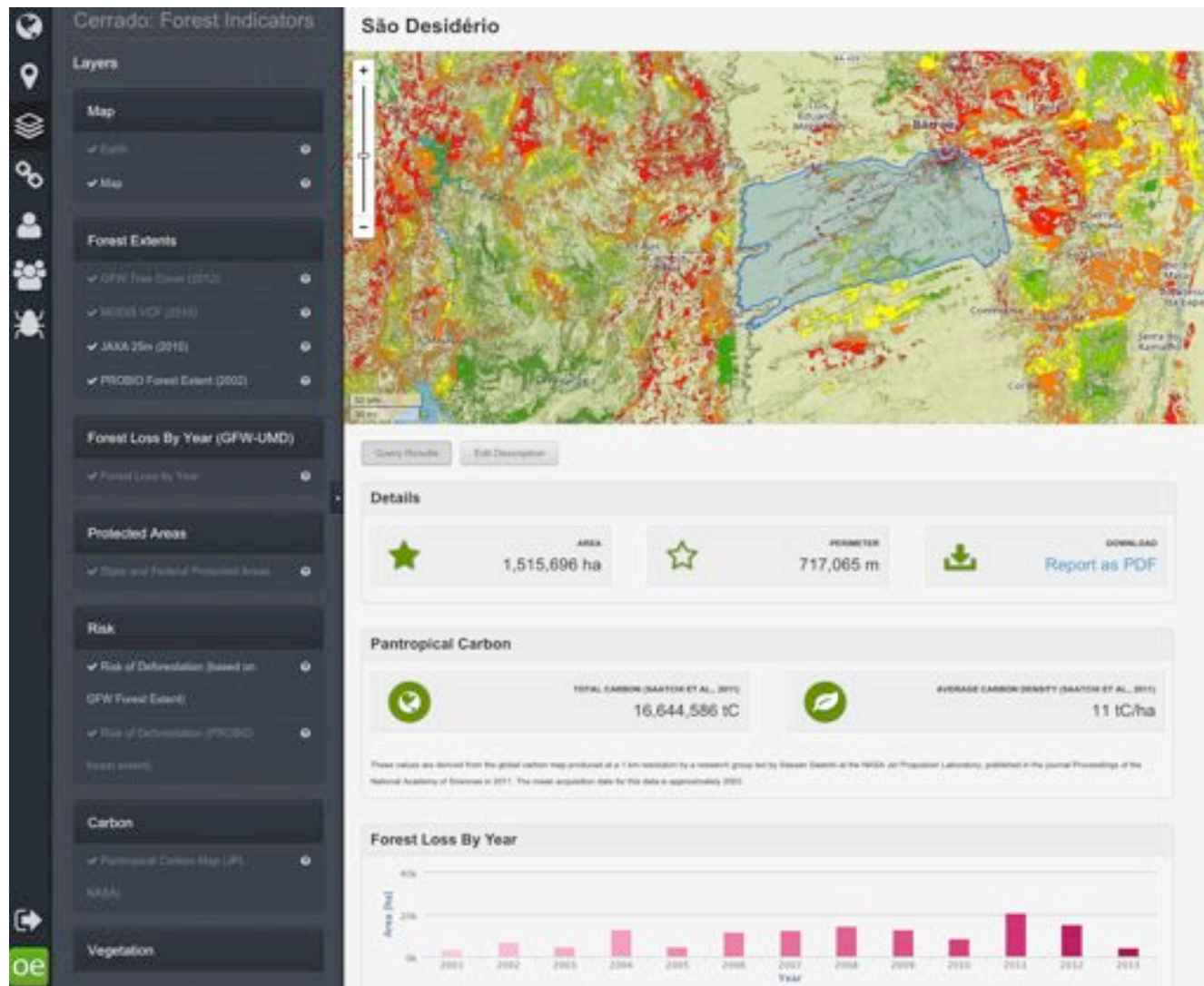


Ecometrica Mapping Technology

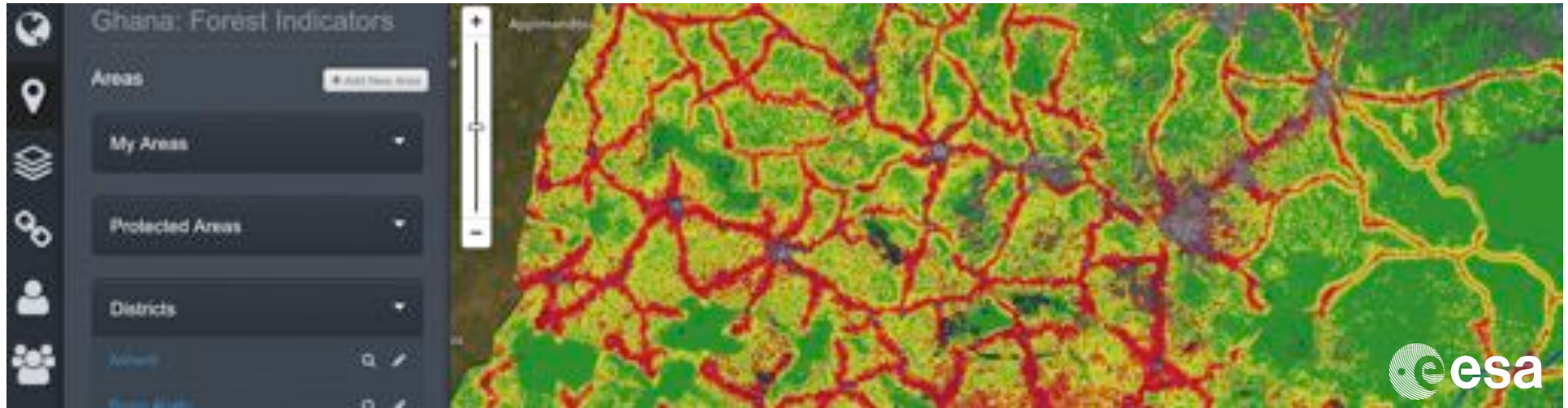
Efficient management of data on multiple servers and rapid querying of compressed data stores across time-series

Administration interface to set up applications bringing together users with data, queries and areas of interest

Simple end-user interface




Example: monitoring impact of donor programmes on forests



Nepal
Brazil
Ghana



Example: Monitoring water scarcity and impact on plant growth - Australia




0 100 km
0 100 mi

Coffs Harbour

Description Query Results Edit Description

Gwydir River Catchment

The Gwydir catchment in New South Wales covers about 2.7% of the Murray Darling Basin. The Gwydir river (as seen in the left photo) flows west to the Barwon river. The river is regulated by several weirs, most notable the Copeton dam (seen on the right photo). The Gwydir area has a high cultural value because of the history, culture, and livelihoods of the aboriginals that are intertwined with the river system. Since European settlement the river system has been changed a lot, resulting into environmental problems. The wetlands in this area are a home for many rare, endangered, and threatened plant and animal species (MDSB, 2013).



Example: near-real time soil saturation, drought and flood extent

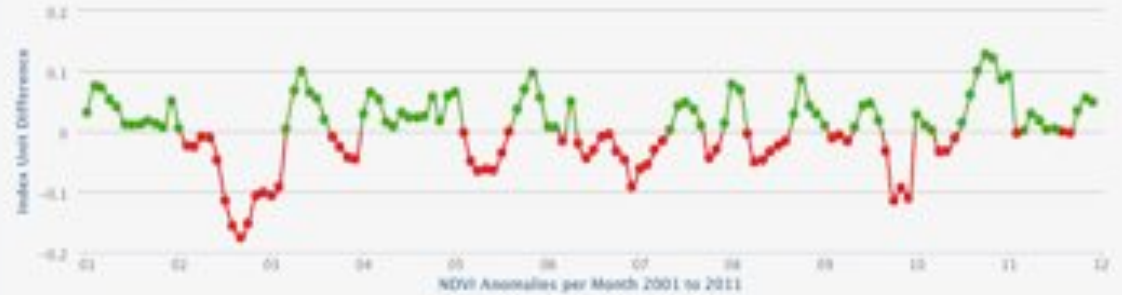


Analysis of Drought Indices - Murray Darling Basin

Layers

- Map
 - ✓ Earth
 - ✓ Map
- NDVI
 - ✓ NDVI September 2002
 - ✓ NDVI September 2010
- EVI
 - ✓ EVI September 2002
 - ✓ EVI September 2010
- VOD
 - ✓ VOD September 2002
 - ✓ VOD September 2010

NDVI Anomalies per Month 2001 to 2011



The Normalized Difference Vegetation Index (NDVI) measures the greenness of vegetation. NDVI values range from -1 to +1. Values that are near zero mean no green vegetation and values near +1 mean the highest possible density of vegetation.

For this analysis, NDVI anomalies were calculated using the average NDVI values for each month over eleven years. The anomaly is then calculated by each month minus the average, and shows deviations from the 11 year average for the month.

To view a time series animation for monthly NDVI values between 2001 and 2011, [click here](#).

For more information on the methodology and datasets used for these results please see the the "Science" tab on the left of the interface.

EVI Anomalies per Month 2001 to 2011

