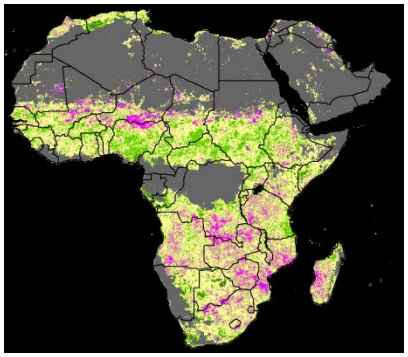
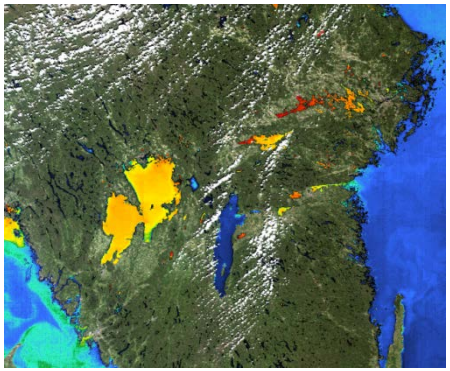
diversity drylands

diversity inland waters

esa



Diversity II Project



Workshop on Land Productivity Indicators

07.-09.07.2014

Carsten Brockmann, Project Manager





DIVERSITYII - Team & Key People

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International Environmental Conventions

- Dramatic environmental problems affecting our planet have mobilised governments, scientists and environmental organisations over the world.

- As a result, several **Multilateral Environmental Agreements (MEAs)** have been signed that aim at reducing environmental degradation.

The United Nations Conference on Environment and Development (UNCED), also known as the 'Earth Summit', held in Rio in 1992.
It resulted in the definition of the 'Agenda 21' plan of actions
and the subsequent signature of different multilateral agreements such as

- the UN Convention to Combat Desertification (**UNCCD**),
- the UN Convention on Biodiversity (**CBD**)
- the UN Framework Convention on Climate Change (**UNFCCC**).

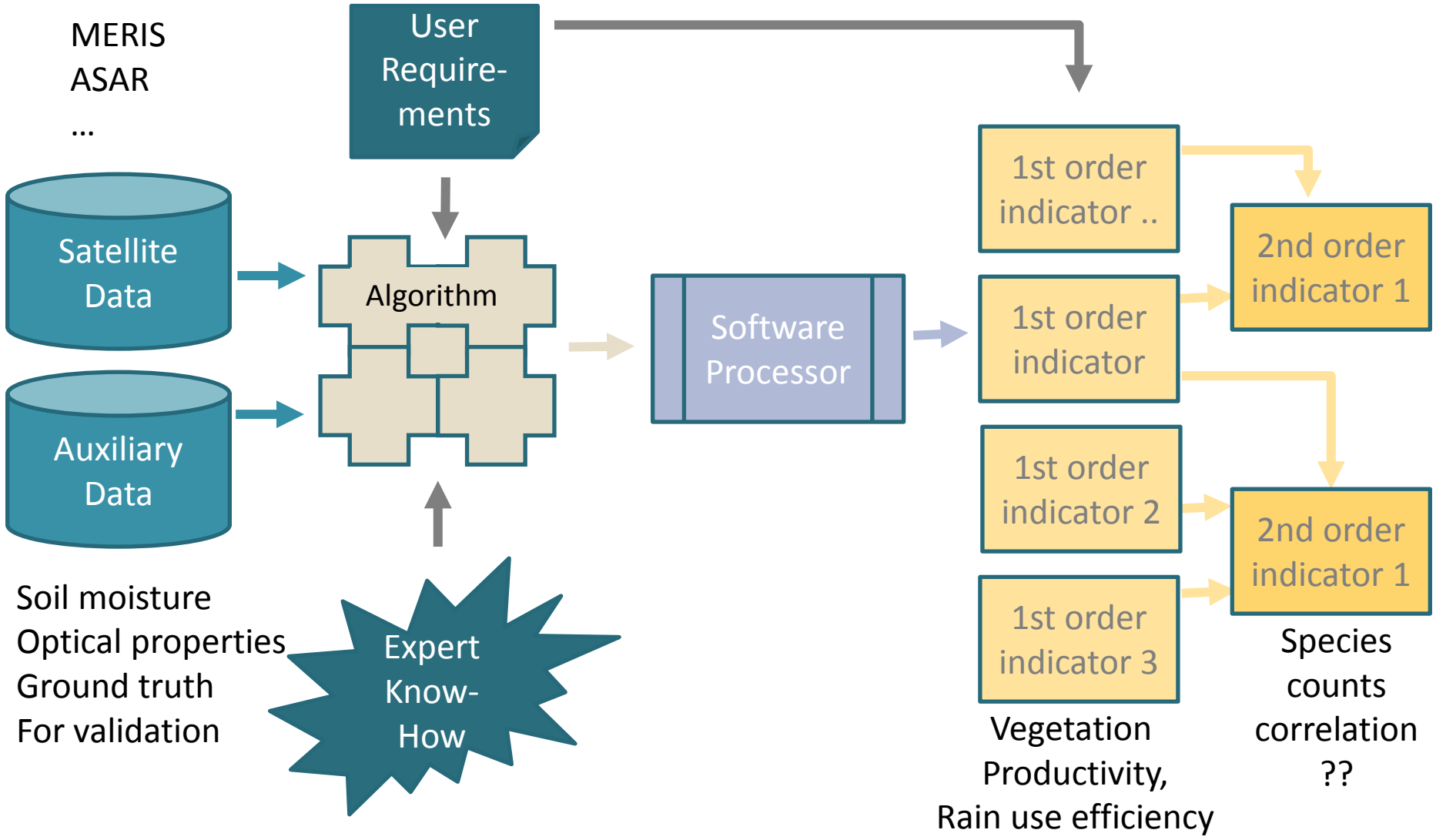
Diversity II

- Contribute to the Convention on Biological Diversity (CBD) and also UNCCD, of respectively inland water and drylands ecosystems,

- global assessment of the availability of freshwater and of its quality with the provision of key observations over large perennial inland waters (lakes and reservoirs)

- assessment of the status and trends of the biological diversity in drylands.

From Satellite Observations to Information for CBD and UNCCD



diversity drylands

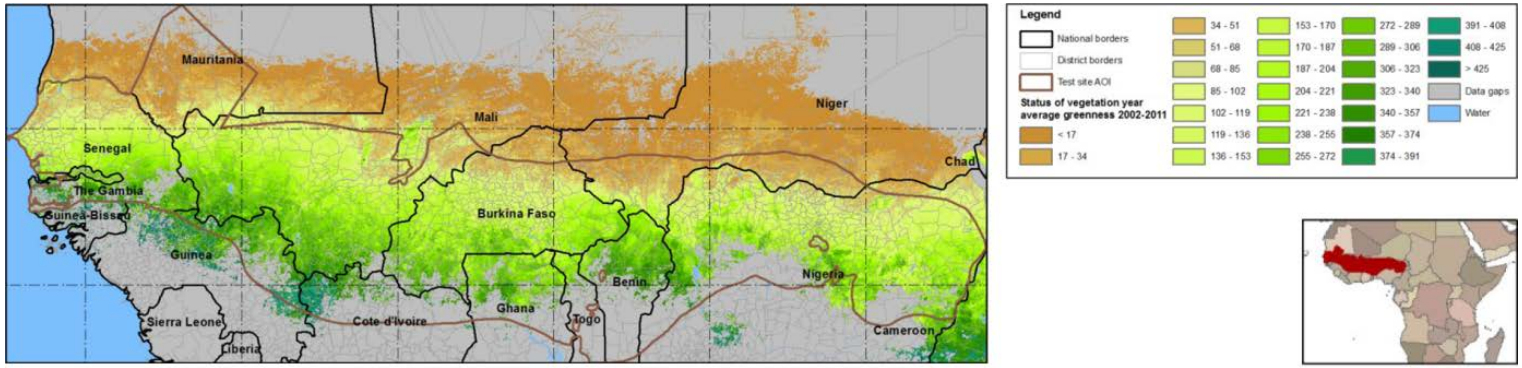
Geographical Coverage

First Order Indicators – NPP proxies

Product	Content
Vegetation year fAPAR	
Average Vegetation Year Greenness fapar_vegyear_average_mean_classes	Vegetation year fAPAR average 2002 - 2011, aggregated to 28 classes.
Vegetation Year Variability fapar_vegyear_average_coeffvar_classes	Vegetation year fAPAR coefficient of variation 2002 - 2011, aggregated to 28 classes.
Vegetation Year Greenness Trend fapar_vegyear_mean_abs_trend_classes, fapar_vegyear_mean_rel_trend_classes	Absolute and relative trend of Vegetation Year fAPAR 2002 - 2011, aggregated to 15 classes.
Cyclic vegetation fAPAR	
Cyclic Vegetation Greenness fapar_cyclic_fraction_mean_classes	Cyclic vegetation fAPAR average 2002 - 2011, aggregated to 28 classes.
Cyclic Vegetation Variability fapar_cyclic_fraction_coeffvar_classes	Cyclic Vegetation fAPAR coefficient of variation 2002 - 2011, aggregated to 28 classes.
Cyclic Vegetation Greenness Trend fapar_cyclic_fraction_abs_trend_classes, fapar_cyclic_fraction_rel_trend_classes	Absolute and relative trend of Cyclic Vegetation fAPAR 2002 - 2011, aggregated to 15 classes.
Dry season fAPAR	
Dry Season Greenness fapar_dry_season_mean_classes	Dry season fAPAR average 2002 - 2011, aggregated to 28 classes.
Dry Season Variability fapar_dry_season_coeffvar_classes	Dry season fAPAR coefficient of variation 2002 - 2011, aggregated to 28 classes.
Dry Season Greenness Trend fapar_dry_season_mean_abs_trend_classes, fapar_dry_season_mean_rel_trend_classes	Absolute and relative trend of Dry Season fAPAR 2002 - 2011, aggregated to 15 classes.

Product Example
Vegetation Year Greeness

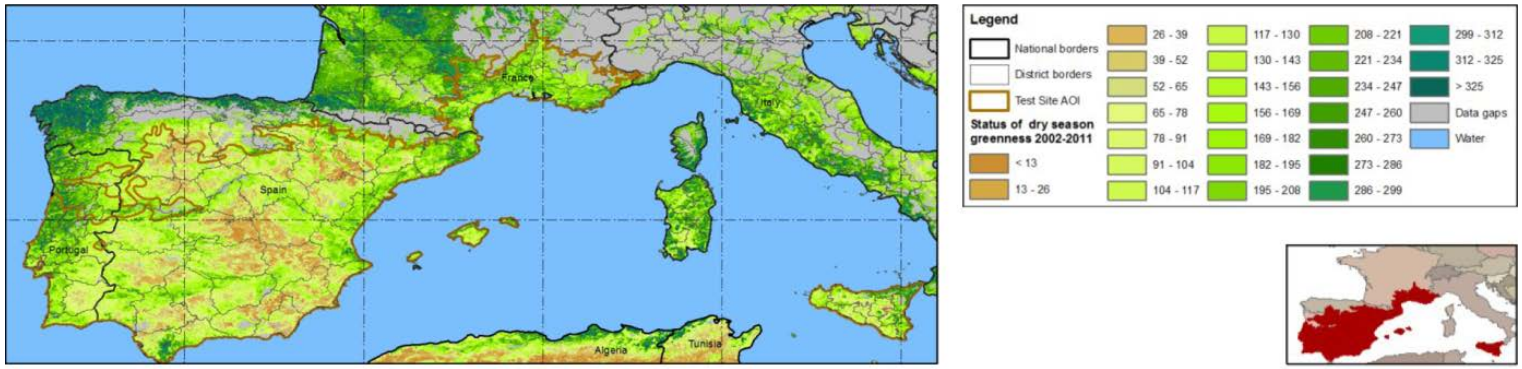
Average Vegetation Year Greeness **Status**
Mean fAPAR 2002 - 2011

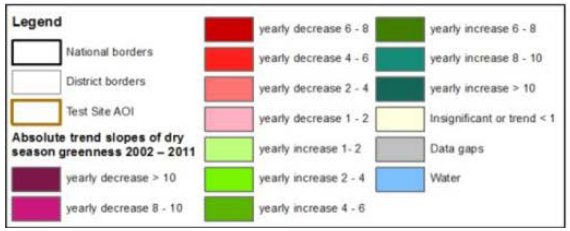


Vegetation Year Greeness **Trend**
Trend slopes of fAPAR 2002 - 2011

Product Example Dry Season Greeness

Dry Season Greeness **Status**
Mean fAPAR 2002 - 2011





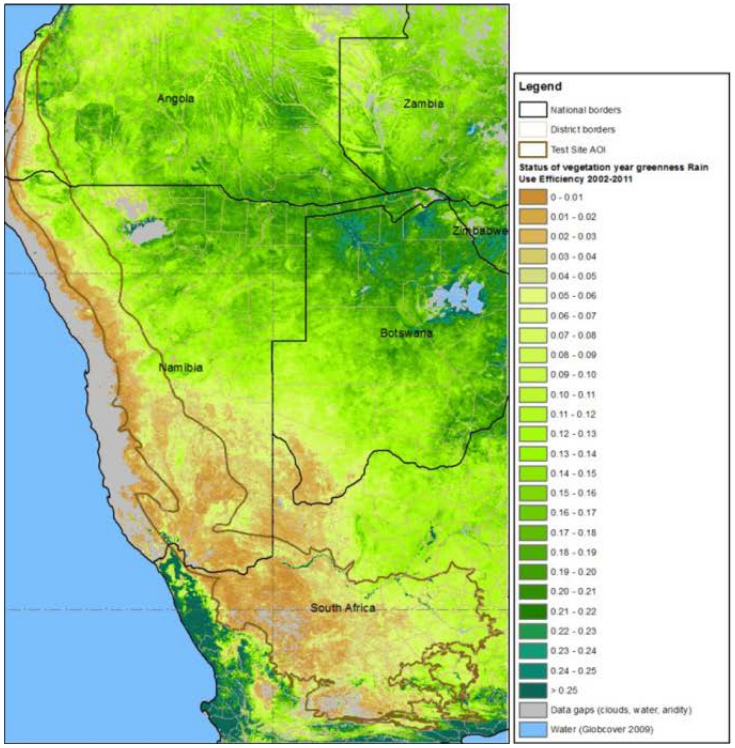
Dry Season Greeness **Trend**
Trend slopes of fAPAR 2002 - 2011

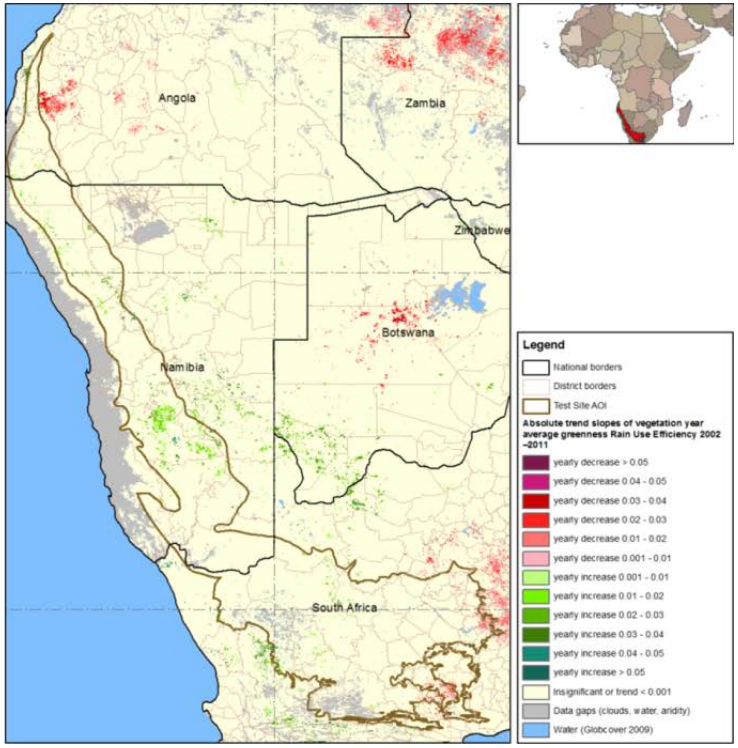
First Order Indicator: Rain Use Efficiency

Product	Content
Vegetation Year Rain Use Efficiency	
Average Vegetation Year Rain Use Efficiency Status fapar_rue_vegyear_trmm_mean_classes	Vegetation Year Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Vegetation Year Rain Use Efficiency Variability fapar_rue_vegyear_trmm_coeffvar_classes	Coefficient of variation of vegetation Year Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Vegetation Year Rain Use Efficiency Trend fapar_rue_vegyear_trmm_abs_trend_classes, fapar_rue_vegyear_trmm_rel_trend_classes	Absolute and relative trend of Vegetation Year Rain Use Efficiency 2002 - 2011, aggregated to 15 classes.
Cyclic Vegetation Rain Use Efficiency	
Cyclic Vegetation Rain Use Efficiency Status fapar_rue_cyclic_fraction_trmm_mean_classes	Cyclic Vegetation Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Cyclic Vegetation Rain Use Efficiency Variability fapar_rue_cyclic_fraction_trmm_coeffvar_classes	Coefficient of variation of cyclic Vegetation Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Cyclic Vegetation Rain Use Efficiency Trend fapar_rue_cyclic_fraction_trmm_abs_trend_classes, fapar_rue_cyclic_fraction_trmm_rel_trend_classes	Absolute and relative trend of Cyclic Vegetation Rain Use Efficiency 2002 - 2011, aggregated to 15 classes.
Dry Season Rain Use Efficiency	
Dry Season Rain Use Efficiency Status fapar_rue_dry_season_trmm_mean_classes	Dry Season Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Dry Season Rain Use Efficiency Variability fapar_rue_dry_season_trmm_coeffvar_classes	Coefficient of variation of dry Season Rain Use Efficiency 2002 - 2011, aggregated to 28 classes.
Dry Season Rain Use Efficiency Trend fapar_rue_dry_season_trmm_abs_trend_classes, fapar_rue_dry_season_trmm_rel_trend_classes	Absolute and relative trend of Dry Season Rain Use Efficiency 2002 - 2011, aggregated to 15 classes.

Product Example:
Rain Use Efficiency of Vegetation Year

RUE Vegetation Year **Status**
Derived from fAPAR
Average 2002 - 2011



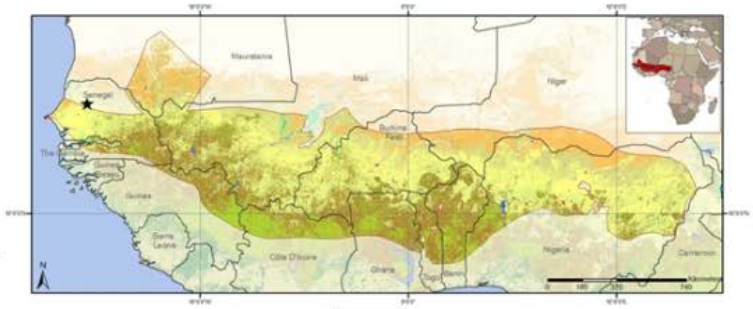


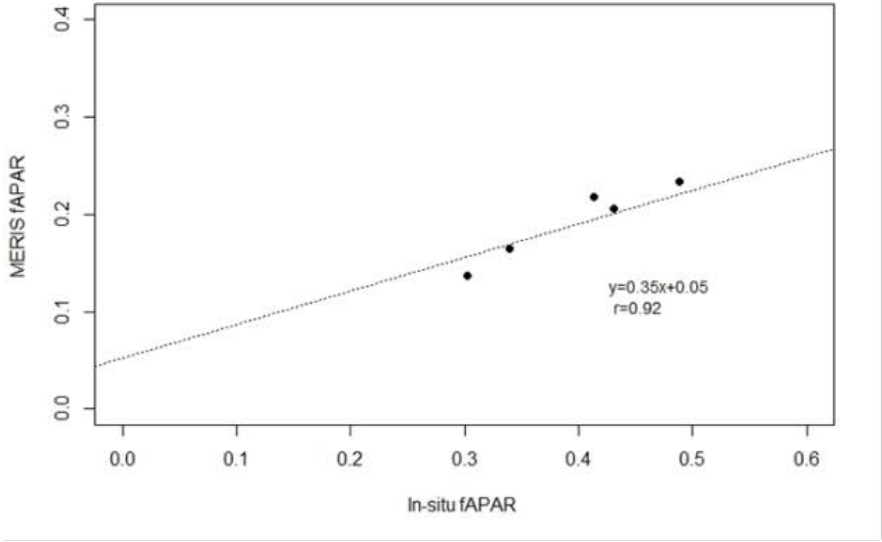
RUE Vegetation Year **Trend**
Trend slopes of RUE 2002 - 2011

Precipitation

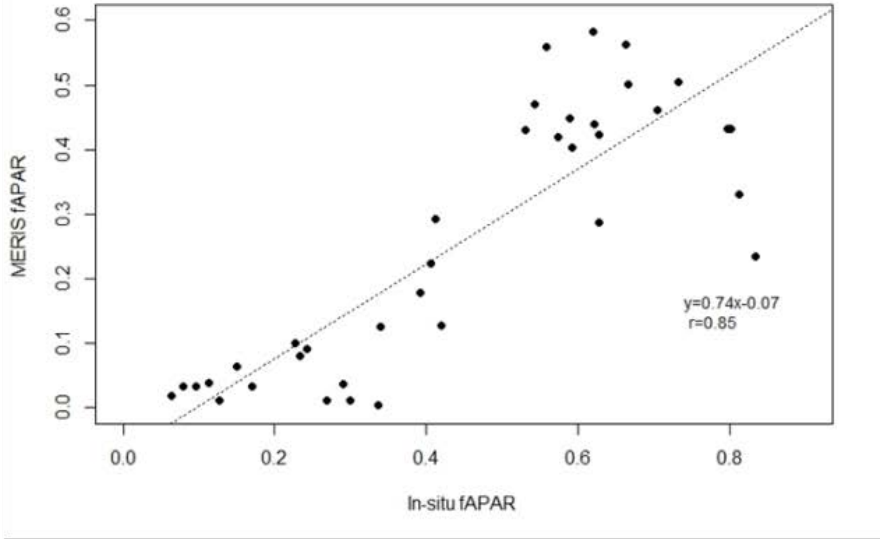
Product	Content
Vegetation Year Precipitation	
Vegetation Year Precipitation Status trmm_rainfall_vegyear_average_classes	Vegetation Year Precipitation average 2002 - 2011, aggregated to 28 classes.
Vegetation Year Precipitation Variability trmm_rainfall_vegyear_coeffvar_classes	Coefficient of variation of vegetation Year Precipitation 2002 - 2011, aggregated to 28 classes.
Vegetation Year Precipitation Trend (abs.) trmm_rainfall_vegyear_mean_abs_trend_classes	Absolute trend of Vegetation Year Precipitation 2002 - 2011, aggregated to 15 classes.
Vegetation Year Precipitation Change trmm_rainfall_vegyear_classes	Vegetation Year Precipitation Change between the two 4- year epochs ('2002 - 2006' / '2007 - 2011'), aggregated to 14 classes.

Validation - fAPAR





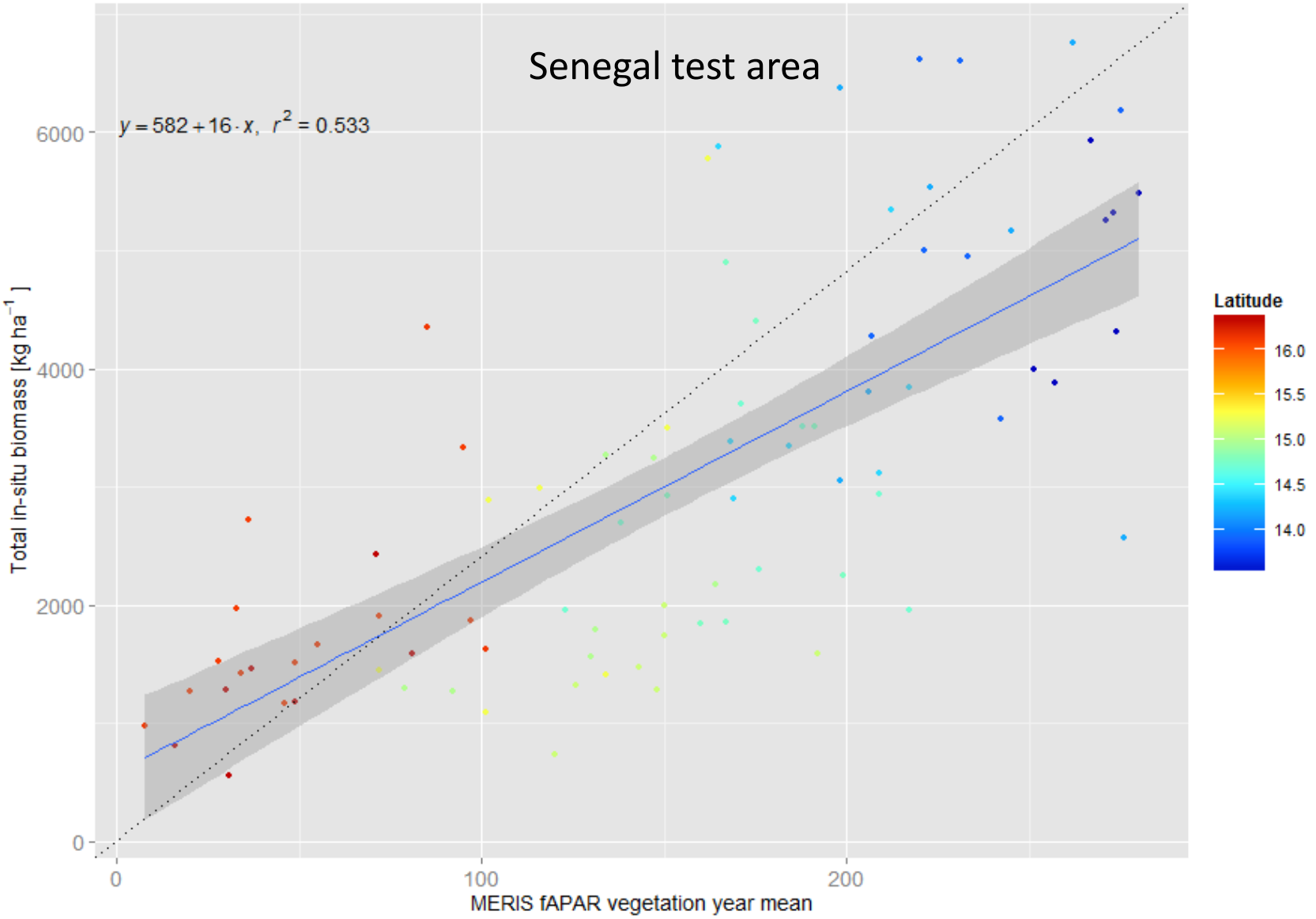
fAPAR integrated over growing season June-November, 2005-2009, 2011



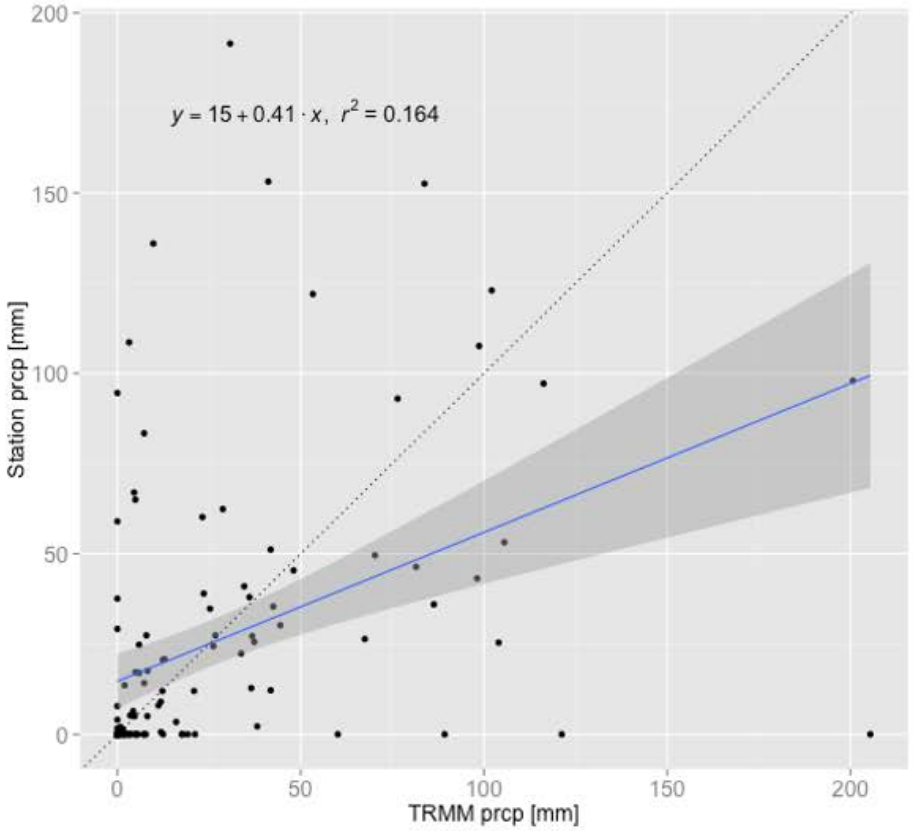
Increasing fAPAR values in the growing season, 2005-2011

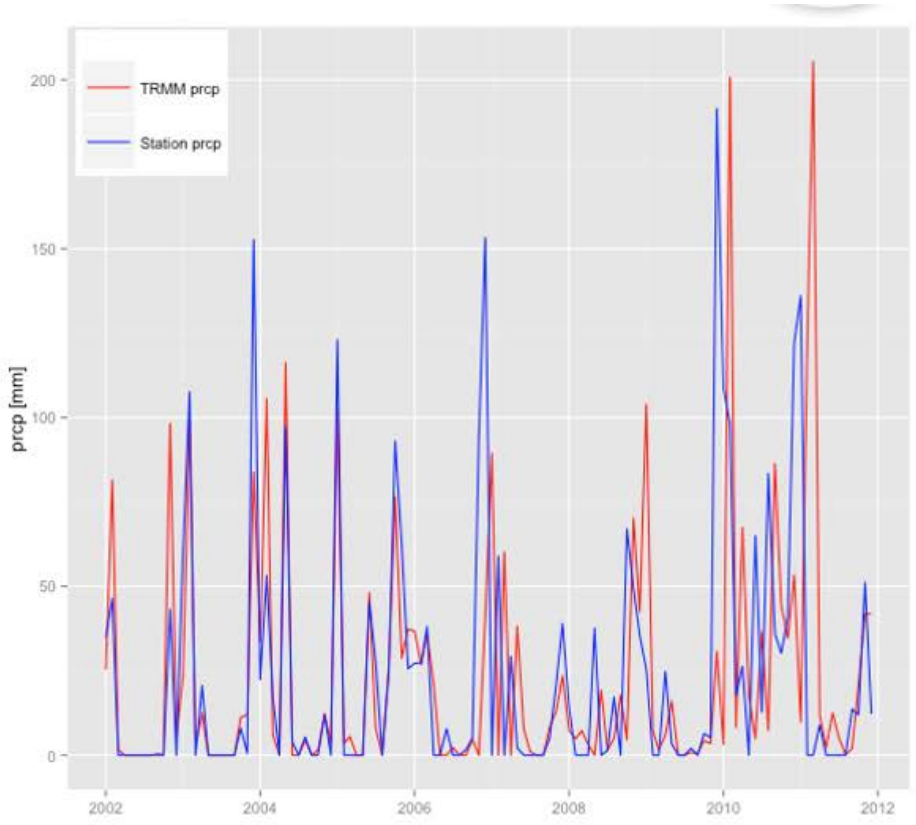
Figure 43: MERIS fAPAR versus ground measured fAPAR in Senegal (black star in upper image indicates location).

Validation fAPAR as NPP Proxy



Validation Rain Use Efficiency

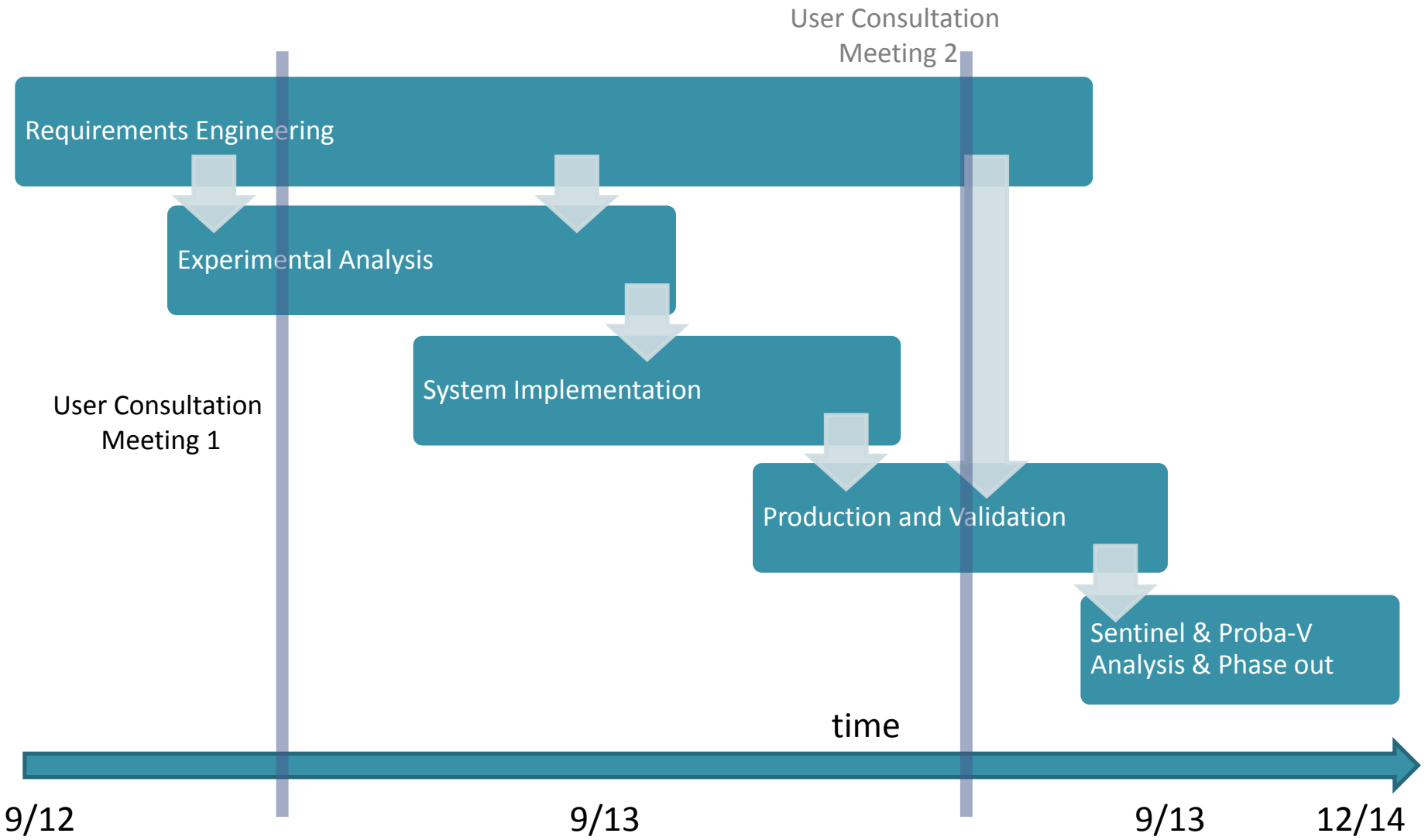




The 6 cornerstones of our Approach

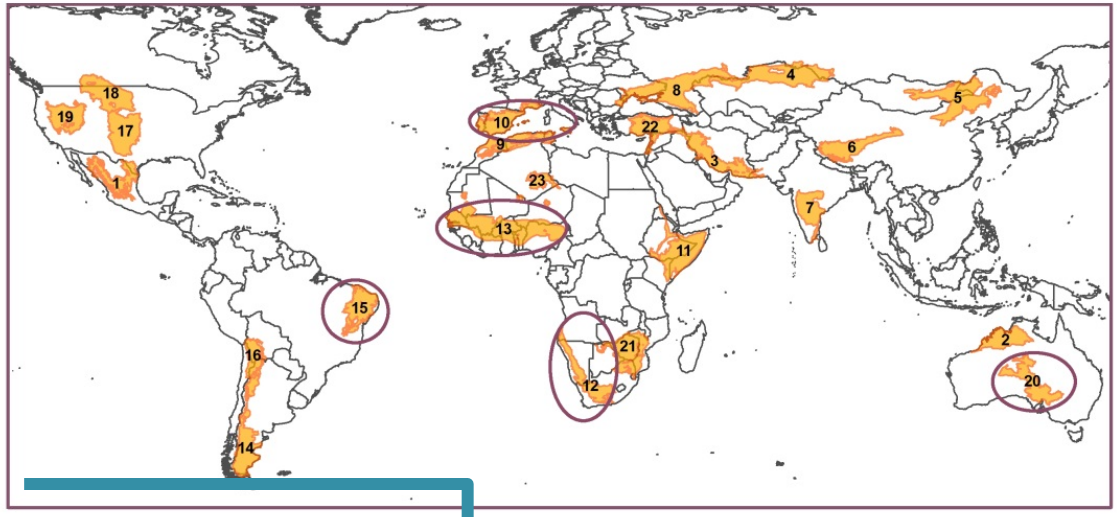
1. Link biodiversity users and EO experts
2. Selection of best algorithms
3. Software and production
4. Validation
5. Communication and product dissemination
6. Preparing the future

Project Calendar



What can you get today?

For 5 Dryland Sites



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- 20_australia

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- Site 10_Southern_Europe_prelim_booklet

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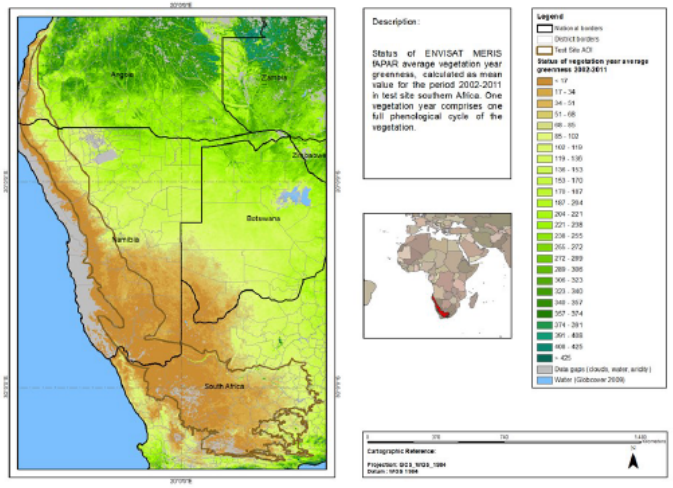
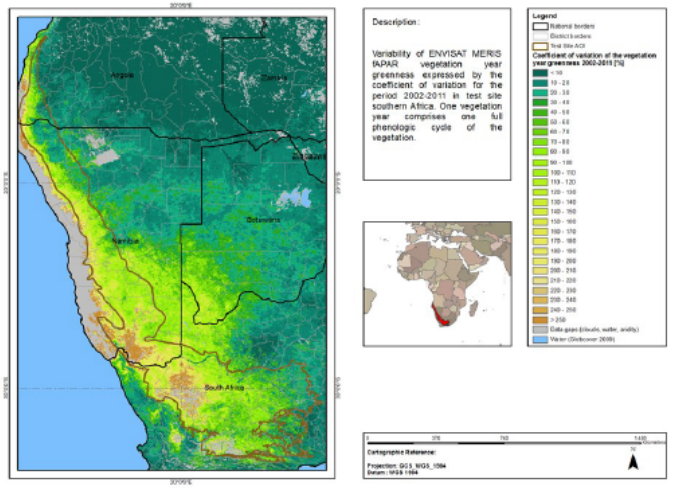
Booklets

Introduction

Average Vegetation Year Greenness



Vegetation Year Variability



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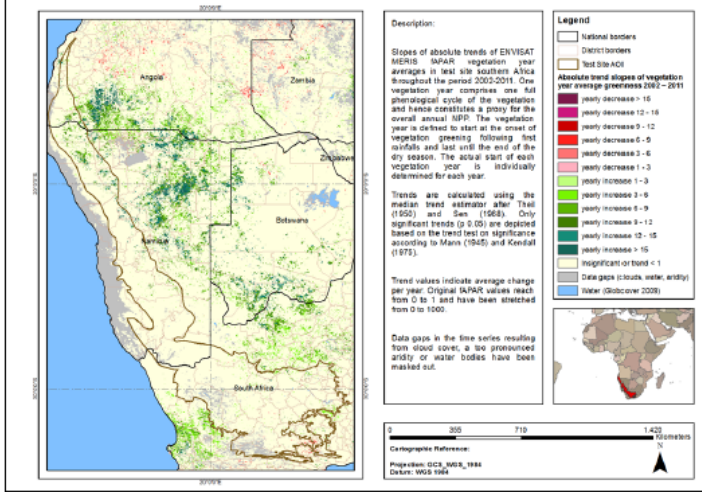
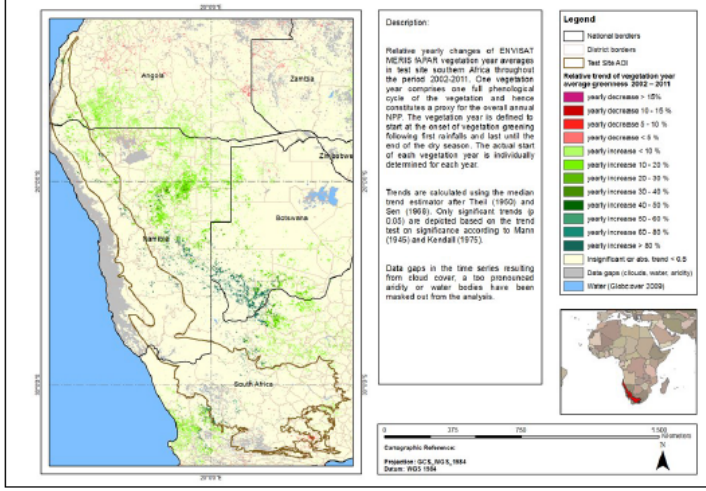
Overview of Test Site

Vegetation Year Greenness Trend (abs.)



Vegetation Year Greenness Trend (rel.)



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diversity drylands

Thanks!