



Detecting changes in essential ecosystem and biodiversity properties- towards a Biosphere Atmosphere Change Index: BACI

Deliverable 9.1: Press release 1



Project title:	Detecting changes in essential ecosystem and biodiversity properties- towards a Biosphere Atmosphere Change Index
Project Acronym:	BACI
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Main pillar:	Industrial Leadership
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Dissemination level:	Public
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1. Introduction

The first press releases of the BACI project was published the 19th of May 2015 in the context of the preparation of the project Kick off meeting, which was organized and hosted by the Max Plank Institute for Biogeochemistry in Jena.

The press releases, titled *Linking space observations to ecosystem functions* was published in English and German. These are some of the website where it was posted.

2. Publications

a. Max Plank Institute

- English: <https://www.bgc-jena.mpg.de/pmwiki.php/PublicRelations/Single?userlang=en&id=1432051627>
- German: <https://www.bgc-jena.mpg.de/index.php/PublicRelations/Single?userlang=de&id=1432051627>

b. Idw- Informationsdienst Wissenschaft

- English: <https://idw-online.de/de/news631309>
- German: <https://idw-online.de/de/news631403>

c. Friedrich-Schiller-Universität Jena

- German: https://www.uni-jena.de/Forschungsmeldungen/FM150521_BACI.html

d. UCL Department of Geography

- English: <http://www.geog.ucl.ac.uk/about-the-department/news/biodiversity-and-change-new-eu-project-kicks-off-in-jena>

e. Aarhus University- Department of Bioscience

- English: <http://bios.au.dk/en/about-bioscience/organisation/eoinformatics-and-biodiversity/baci/>

f. iDiv

- English: http://www.idiv-biodiversity.de/en/idiv/news?q=%3Cmark%3Ebaci%3C/mark%3E#content_item_17052

3. Other articles about BACI
 - a. Innovations report- Forum for Science, Industry and Business
 - English: <http://www.innovations-report.com/html/reports/earth-sciences/linking-space-observations-to-ecosystem-functions.html>
 - b. Horizon 2020 projects
 - English: <http://horizon2020projects.com/sc-bioeconomy/new-satellite-data-analysis-linked-to-eco-insight/>
4. Annex- Press releases



Linking space observations to ecosystem functions

Satellite observations play an increasingly important role in monitoring changes of terrestrial ecosystems at multiple spatial and temporal scales. The new EU funded project “BACI” translates satellite data streams into novel “essential biodiversity variables” by integrating ground-based observations. The trans-disciplinary project will offer new insights into the functioning and state of ecosystems and biodiversity. BACI enables the user community to detect abrupt and transient changes of ecosystems and quantify the implications for regional biodiversity. Other key elements are, firstly attributing ecosystem transformations to societal transformations, and secondly developing a prototype early warning system for detecting disturbances at the interface of land ecosystems and atmosphere.

The continuous transformation of ecosystems, induced by land use change or resulting from climate change may put at risk the maintenance of regional ecosystem functioning and biodiversity. As promoted by GEO-BON (“The Group On Earth Observations Biodiversity Observation Network”, <http://geobon.org/>) scientists, land managers, NGOs and policy makers amongst others would benefit tremendously from an easy-to-access system for detecting these changes at an early stage in order to develop mitigation and management strategies.

The new EU-funded BACI project “Detecting changes in essential ecosystem and biodiversity properties – towards a Biosphere Atmosphere Change Index” takes up this challenge and exploits current and future European space data archives, including optical and radar data, to this end. One component of the international consortium is integration of space and ground data to unravel new and fundamental relationships between space observations and ecosystem status. Modern machine-learning tools will be key to this effort allowing for an effective exploitation of European data and deriving new essential ecosystem variables – in particular, novel “Essential Biodiversity Variables”. These variables will in turn enable users to more easily interpret observed ecosystem and biodiversity changes. A second component of BACI consists of building a system that automatically detects critical transitions in ecosystems and attributes these to transitions in the societal system. One of the goals is identifying hotspots of change within selected key regions in Europe and Africa, all of which are undergoing different societal-ecological transformations that might itself be attributable to environmental change.

The European Horizon 2020 research and innovation programme funds the BACI project which brings together ten leading research and data processing institutions with the intention of contributing to international efforts to advance the monitoring of key properties required to an improved understanding of biodiversity patterns and transformations, as well as to ecosystem functional properties. The consortium includes the Max Planck Institute for Biogeochemistry (Germany, coordinator), University degli studi della Toscana (Italy), Eidgenoessische Forschungsanstalt (Switzerland), Friedrich-Schiller-Universität Jena (Germany), Wageningen University (Netherlands), University Col-

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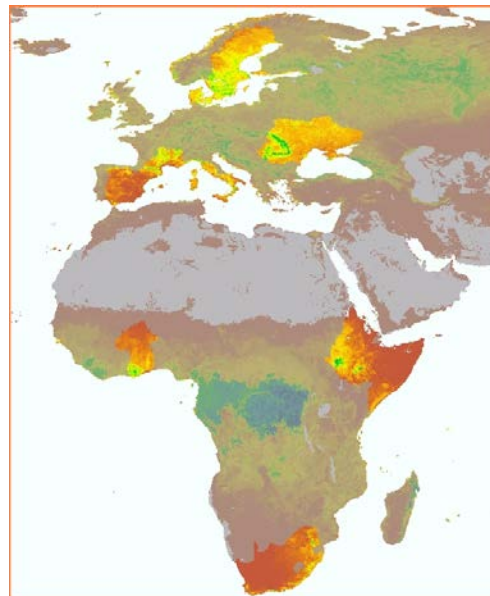
lege London (United Kingdom), Universität Klagenfurt (Austria), Aarhus Universitet (Denmark), Re-zatec (United Kingdom) and Science and Technology Facilities Council (United Kingdom).

From May 19 to May 21, 2015 the ten European partners will come together to officially kick off their new project. Besides organizing and hosting the meeting in Jena, the Max Plank Institute for Biogeochemistry is responsible for coordinating, managing, and disseminating the outcome of the project. Within the next four years the scientists will join forces to deliver the first version of an early warning system for ecosystem changes.

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Focus areas in Europe and Africa (©BACI)