

GHG-CCI QSR January-March 2017

1. Overall progress

During the reporting period the project proceeded as planned. No major issues have been identified. Focus during the reporting period was on finalizing a new data set and its documentation covering the time period 2003 – 2015: Climate Research Data Package No. 4, CRDP4. The new data set CRDP4 and its documentation is available on the GHG-CCI website (<http://www.esa-ghg-cci.org/> -> CRDP (Data)). The data quality is described in version 5 of the Product Validation and Intercomparison Report (PVIR, http://www.esa-ghg-cci.org/?q=webfm_send/352). The user assessment of this data set as conducted by the GHG-CCI Climate Research Group (CRG) is described in version 4 of the Climate Assessment Report (CAR, http://www.esa-ghg-cci.org/?q=webfm_send/385). End of February 2017 the final GHG-CCI review meeting (Annual Review Meeting 3, ARM3) had been held at ESRIN. The successful ARM3 meeting was the last meeting of the current GHG-CCI Phase 2 baseline contract. However, some specific “optional” work packages are still ongoing (until mid December 2017) to address specific research aspects such as scientific applications using the existing data products and preparation for processing of data from new sensors.

Some GHG-CCI team members are since 1st of November 2016 part of C3S (<https://climate.copernicus.eu/>) via project “Production of Essential Climate Variable Datasets based on Earth Observations: Greenhouse Gases (carbon dioxide and methane) (C3S_312a_Lot6)” led by Univ. of Bremen. This C3S project is essentially the operational continuation of GHG-CCI and the GHG-CCI data set will be extended in time via this C3S project. Not covered are R&D aspects, which will hopefully be covered in the future via CCI+.

2. Outreach to the scientific community

Overall, the GHG-CCI project was very successful. All deliverables have been delivered with good quality and always on time and the data products have been presented at various conferences and have been used for several peer-reviewed publications. The publication list is given on <http://www.esa-ghg-cci.org/> -> Publications (where publications with GHG-CCI funding explicitly acknowledged are marked with (*)).

3. Technical information

3.1 Publications since last QSR:

Heymann, J., M. Reuter, M. Buchwitz, O. Schneising, H. Bovensmann, J. P. Burrows, S. Massart, J. W. Kaiser, D. Crisp, CO₂ emission of Indonesian fires in 2015 estimated from satellite-derived atmospheric CO₂ concentrations, *Geophys. Res. Lett.*, DOI: 10.1002/2016GL072042, pp. 18, 2017.

Lauer, A., V. Eyring, M. Righi, M. Buchwitz, P. Defourny, M. Evaldsson, P. Friedlingstein, R. de Jeu, G. de Leeuw, A. Loew, C. J. Merchant, B. Müller, T. Popp, M. Reuter, S. Sandven, D. Senfleben, M. Stengel, M. Van Roozendaal, S. Wenzel, U. Willén, Benchmarking CMIP5 models with a subset of ESA CCI Phase 2 data using the ESMValTool, *Remote Sensing of Environment*, DOI: 10.1016/j.rse.2016.12.027, in press, pp. 31, 2017.

Scholze, M., M. Buchwitz, W. Dorigo, L. Guanter, S. Quegan, Reviews and syntheses: Systematic Earth observations for use in terrestrial carbon cycle data assimilation systems, *Biogeosciences Discuss.*, pp. 49, doi:10.5194/bg-2016-557, 2017.

3.2 Number of users

Number of users (mid 2011 to 31-March-2017): 561 (45 during reporting period).

*** End of Report ***