Table A1. Studies comparing NASA/NOAA and ESA (Copernicus) Remote Sensing Bio-Geophysical Products (RS-BGP). Italic are NASA/NOAA and Bold are ESA products. Underlined are mixed (NASA/NOAA+ESA) products.

| **Product** | **Comparison** | **Results** | **Reference** |
| --- | --- | --- | --- |
| **Albedo** | *MODIS* and **PROBA -V** albedo and direct validation using ground observations | * PROBA-V and MODIS C6 achieved a good agreement (RMSE ca. 0.03) | Roujean et al. (2018) |
| **FAPAR** | *MODIS*, **CYCLOPES (SPOT-VGT), JRC** *(SeaWifs)***, and GLOBCARBON (SPOT-VGT)** over Northern eurasia for the year 2000. | * Products achieved similar results in deciduous broadleaf forests and croplands. * Low agreement found in needleleaf and mixed forests and grassland/shrublands. * MODIS and CYCLOPES reached high FAPAR values. * JRC and GLOBCARBON results were similarly low. | McCallum et al. (2010) |
| *MODIS*, **MERIS**, *SeaWIFS*, *MODIS-TIP*, **SPOT-VEG**, *AVHRR* across Australia | * High agreement among products was found in savanna/ grassland, shrubland and managed land (agricultural land) biomes. * Low agreement was found in forest biomes. | Pickett-Heaps et al. (2014) |
| **LAI/ FAPAR** | *MODIS*, Formosat, **GEOLAND-2(SPOT-VGT)** and in situ measurementsover crops in southwest France | * Results from all products were in good agreement with a significant positive correlation. * Uncertainty LAI: 0.35 * Uncertainty FAPAR: 0.07 | Claverie et al. (2013) |
| **FCOVER/ LAI/ FAPAR** | The spatial and temporal consistencies of GEOV1 products (**FCOVER, LAI, FAPAR using SPOT-VGT**: GEOLAND2 project) were assessed by intercomparison with reference global products (*MODIS c5***, CYCLOPES v3.1 (SPOT-VGT)**, GLOBCARBON v2 LAI **(SPOT-VGT, ENVISAT/AATSR**), and JRC *SeaWIFS* FAPAR) | * GEOV1 products presented good performances. * GEOV1 products achieved higher quality in comparison with the reference products used in the study. * GEOV1 products had a lack of spatio-temporal continuity (e.g. over high latitudes and equatorial regions). | Camacho, Cernicharo, Lacaze, Baret, & Weiss, (2013) |
| **FCOVER** | **GEOV1 Fractional Vegetation Cover, FVC (SPOT-VGT)** | * FVC was overestimated in croplands (0.20). | Mu et al., (2015) |
| **LAI** | *ECOCLIMAP (NOAA/AVHRR)*, **GLOBCARBON (SPOT-VEG**), **CYCLOPES (SPOT-VEG**), and *MODIS*. | * Results were more similar over croplands and grasslands than forests. * ECOCLIMAP was the only product with no spatiotemporal gaps. | Garrigues et al. (2008) |
| **NDVI** | *GIMMS (from AVHRR)* and *MODIS NDVI* | * The trends of GIMMS NDVI were in overall agreement with MODIS NDVI data except for artic areas in Northern Hemisphere and South America and Australia in Southern Hemisphere. | Fensholt & Proud, (2012) |
| **LST** | *EOS-MODIS MOD11\_L2/MYD11\_L2 LS* | * The M\*D11\_L2 product achieved lower uncertainty. * Underestimation of ca. −0.15 K was observed with uncertainty values ± 2K in a rice crop and a Mediterranean shrubland. | Niclòs, Valiente, Barberà, & Coll (2015) |
| **Land Cover** | **ESA CCI (ENVISAT MERIS, ASAR/ SPOT-VGT)**, **GLC2000 (SPOT-VGT),** **GlobCover (ENVISAT MERIS),** GlobeLand30 (*Landsat* and HJ-A1/B: Chinese), *MCD12Q1*, GLC SHARE (global land cover products FAO, LCCS) IIASA IFPRI Cropland Maps (global land cover products and national statistics), GFSAD Crop Extent for Africa (Landsat 8 and Sentinel 2) in five Sahelian countries | * ESA CCI 2013, MODIS 2013 and GlobCover 2009 outperformed GLC2000. * GFSAD30 and GLOBELand30 obtained the best accuracy in croplands. (GFSAD30: 64.19% and GlobeLand30: 68.89%). * ESA CCI and MODIS achieved best accuracies in mixed crops. * All products reported accuracies lower than 75%. * All products overestimated cultivated areas (i.e. 170% on average). | Samasse et al. (2018) |
| FAO-GLCshare (FAO Global Land Cover Network), Geowiki Hybrid-1 IIASA (MODIS, SPOT4, MERIS), **GLC2000-JRC (SPOT-4/VGT**), *GLCNMO v2-ISCGM (MODIS)*, GlobeLand30 (*Landsat TM/ETM7*, and HJ-A1/B: Chinese), **GlobCover 2009 (MERIS)**, **LC-CCI 2010** **(MERIS, SPOT-VGT),** **LC-CCI 2015-ESA(MERIS, PROBA-V, SPOT-VGT, AVHRR),** and *MODISLC* *2010* (*MOD12Q1 v051*). | * Results were substantially different among products. * FAO-GLCshare and GlobeLand30 were the most suitable datasets to monitor croplands, * LC-CCI2010 overestimated cropland areas in Africa. * GLC2000 reported low accuracy. | Pérez-Hoyos, Rembold, Kerdiles, & Gallego, (2017) |
| **Corine Land Cover (CLC) and ESA CCI (LUCAS Land use dataset as ground truth)** implications for fire modelling | * CCI-LC reached a higher agreement with LUCAS than CLC: 59% and 56%, respectively. * In terms of wildfire occurrence estimation:   - Both datasets performed similarly at European scale.  - CLC provided better results at local scale. | Vilar, Garrido, Echavarría, Martínez-Vega, & Martín, (2019) |
| **BA** | *FireCCI50* (MODIS) and **FireCCI41 (MERIS),** *GFED4* and *MCD64A1* | * Temporal and spatial trends were consistent among compared products. * FireCCI50 detected small fire patches better than previous versions. | Chuvieco et al. (2016) |
| **Hybrid product using MERIS and MODIS product (ESA FIRE\_CCI project)** compared with existing *MODIS Burned Area (BA) products* | * MERIS BA accuracy was in line with MODIS BA products (MCD45 and MCD64) (overall accuracy higher than 0.99). * MERIS, GEFD v4 and MCD45 achieved high agreement (r2 > 0.99). * Seasonal trends between BA MERIS and existing products were similar (e.g. magnitude through temporal series). | Alonso-Canas & Chuvieco, (2015) |

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