**List of abbreviations**

The following table describes the significance of abbreviations used throughout the manuscript, along with the page on which each one is defined or used for the first time. The most commonly used abbreviations for unit measure or chemical elements were not listed, but they are defined in the manuscript.

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| **No.****crt.** | **Abbreviation** | **Definition** | **Page** |
|  | VI | vegetation index | 1 |
|  | CICES | Common International Classification of Ecosystem Services | 2 |
|  | UAV | unmanned aerial vehicle | 3 |
|  | SAR | synthetic-aperture radar | 4 |
|  | ARVI | Vegetation Indices con-sidering Atmospheric Effects | 5 |
|  | CCC(I) | Canopy Chlorophyll Con-tent Index | 5 |
|  | EVI | Enhanced VegetationIndex | 5 |
|  | GNDVI | Green Normalized Dif-ference Vegetation Index | 5 |
|  | LAI | Leaf Area VegetationIndex | 5 |
|  | MCARI | Modified Chlorophyll and Reflectance Index | 5 |
|  | NDVI | NDVI (Normalized Difference Vegetation Index) | 6 |
|  | NDWI | Normalized Difference Water Content | 6 |
|  | OSAVI | Optimized Soil Adjusted Vegetation Index | 6 |
|  | PSRI | Plant Senescence Reflectance Index | 6 |
|  | RECI | Red Edge ChlorophyllIndex | 6 |
|  | RDVI | Renormalized difference vegetation index | 6 |
|  | SAVI | Soil Adjusted Vegetation Index | 6 |
|  | SR | Simple Ratio Index | 6 |
|  | TCARI | Transformed chlorophyll absorption ratio | 6 |
|  | NIR | near-infrared | 6 |
|  | REIP | Red edge inflection point | 8 |
|  | CRI550 | Carotenoid Reflectance Index 550 nm | 8 |

Continuation List of abbreviation

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| **No.****crt.** | **Abbreviation** | **Definition** | **Page** |
| 23 | CRI700 | Carotenoid Reflectance Index 700 | 8 |
| 24 | MSBI | Misra Soil Brightness Index | 8 |
| 25 | CVI | Chlorophyll vegetation index | 8 |
| 26 | fAPAR | quantifies the fraction of the solar radiation absorbed by live leaves for the photosynthesis activity | 10 |
| 27 | fCover | Fraction of Vegetation Cover | 10 |
| 28 | freshAGB | aboveground fresh biomass | 10 |
| 29 | ARI2 | Anthocyanin Reflectance Index 2 | 10 |
| 30 | NDRE | normalized difference red edge index | 10 |
| 31 | CIre7 | Chlorophyll Index - Red-Edge | 10 |
| 32 | DVI | Difference Vegetation Index | 10 |
| 33 | SAR |  Synthetic aperture radar | 14 |
| 34 | VV | a mode that transmits vertical waves and receives vertical waves to create the SAR image | 14 |
| 35 | VH | a mode that transmits vertical waves and receives horizontal waves to create the SAR image | 14 |
| 36 | GAI | green area index | 14 |
| 37 | S2RP | Sentinel-2 Red Edge Position | 15 |
| 38 | NDYI | Normalized Difference Yellowness Index | 15 |