Vegetation Indices

A Timeline of Protocol Development

- Formed a small group of VI experts to review the outline (November 2022)
  - Carolien Toté (VITO, Belgium)
  - Kamel Didan (University of Arizona, USA)
  - Molly Brown (University of Maryland, USA)
  - ~~Michele Meroni (JRC, Italy)~~
  - Kazuhito Ichii (Chiba University, Japan)
- Held a kick-off meeting with the expert group (December 15, 2022)
- Held a 2nd meeting to the group's review comments/suggestions (January 31, 2023)
- Revised the outline and shared the revised outline with the expert group (March 15, 2023)
- Completed the first complete draft (December 3, 2023)
- Had the expert group review the first draft (December 2023 - January 2024)
- Reviewed and updated the VI listserv list (May 2024)
- Sent the draft protocol document for the community feedback via the VI listserv (17 September 2024) *- Feedback due 31 October 2024*
- Presented a poster about the revised protocol at AGU Fall 2024, Washington, DC, USA (9 December 2024)
- Revised the draft based upon the feedback (June 2025)
- Sharing the revised draft and obtaining the community approval (TBD)

B13G-1626

CEOS WGCV LPV Validation Best Practices for Vegetation Index Products

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Requirements for VIs

The CEOS LPV subgroup held a workshop in 2016 and the following set of general requirements for VIs were formulated among the participants.

1) Estimation of VI uncertainty in VI units
2) Characterization of VI changes with respect to changes in the actual vegetation conditions (biophysical and/or physiological)
3) Evaluation of long-term stability of VI time series datasets

Recommended Content of a VI Product Validation Document

The VI focus area of the CEOS LPV subgroup recommends that the following set of information be made available for VI products:

1) Product QA information
2) Product uncertainty information obtained via validation.
3) Product intercomparison results

Recommended Approaches for VI Product Validation

Validation of the input reflectance along with VIs

Correlative analysis (cross- and intercomparison) with other or similar datasets

Time series validation, where validation focuses on the quality of VI time series data as to how well VI products capture seasonal evolution of vegetation for multiple years. In the 2nd workshop held in 2018 (Washington, D.C., USA), participants agreed to the recommendation of a "time series validation" as one standard VI validation approach.

Recommended Approaches for VI Product Intercomparison

Intercomparison of two or more VI datasets is preferably done on an entire year of data to have a representative sample of all possible surface conditions. The evaluation should verify the following criteria:

Product completeness (e.g., the number of cloud-free dates sampled)

Spatial consistency (e.g., coefficient of variation)

Difference evaluation or statistical consistency (e.g., bias and correlation)

Temporal consistency (e.g., stability)

*Presented at AGU24, Washington, D.C., 9-13 December. *This slide includes additional updates since the presentation.*

Vegetation Indices – FA Web Status

Home Page	Checked, to be updated upon approval of the protocol document
Product Table	Being updated
Collaboration Page	Checked: October 2024
References	To be updated upon approval of the protocol document
Listserv	Updated: September 2024
Letters to Community	Invitation Email: September 2024