P02: Crop type and acreage mapping

Maturity score	
Mean: 2.5	**STD:** 0.5

Constraints and limitations

- Cloud presence

- The lack of local in-situ data to train the machine learning models.

- Machine learning model uncertainty

Relevant user needs

UN18: Need to monitor crop productivity.

UN19: Identifying types of crops being grown is essential.

UN28: Need to classify the types of crops being grown to assess the sustainability and environmental impact of agricultural investments.

UN29: Need to accurately measure the planted area for crops.

R&D gaps

- Limitations in discrimination of crop types with similar spectral signatures. As the crop type maps are often group classifications where crops with similar spectral signatures are grouped together.

- Smallholder farming remains an issue because of the small size of farms where intercropping happens very often. (This comment may not apply in the case of large commercial farms).

Potential improvements drivers

The main limitations are due to the input data rather than the methodology, so the improvements include:

- More field data worldwide.

- Increased spatial and temporal resolution of the input EO data.

- Increasing spectral resolution by using hyperspectral data to better discriminate between crop types.

- Crop-type predictions using multiple datasets may allow you to differentiate between those crops that are similar spectrally.

Utilisation level review

Utilisation score	
Mean: 2.6	**STD:** 1.02

No utilisation:

Low utilisation

Medium utilisation

Unawareness of the existence of the best available commercial EO product with better specifications.

High utilisation

Only this product satisfies the technical and usability requirements.
Critical gaps related to relevant user needs
Guideline gap UN18: Need to monitor crop productivity