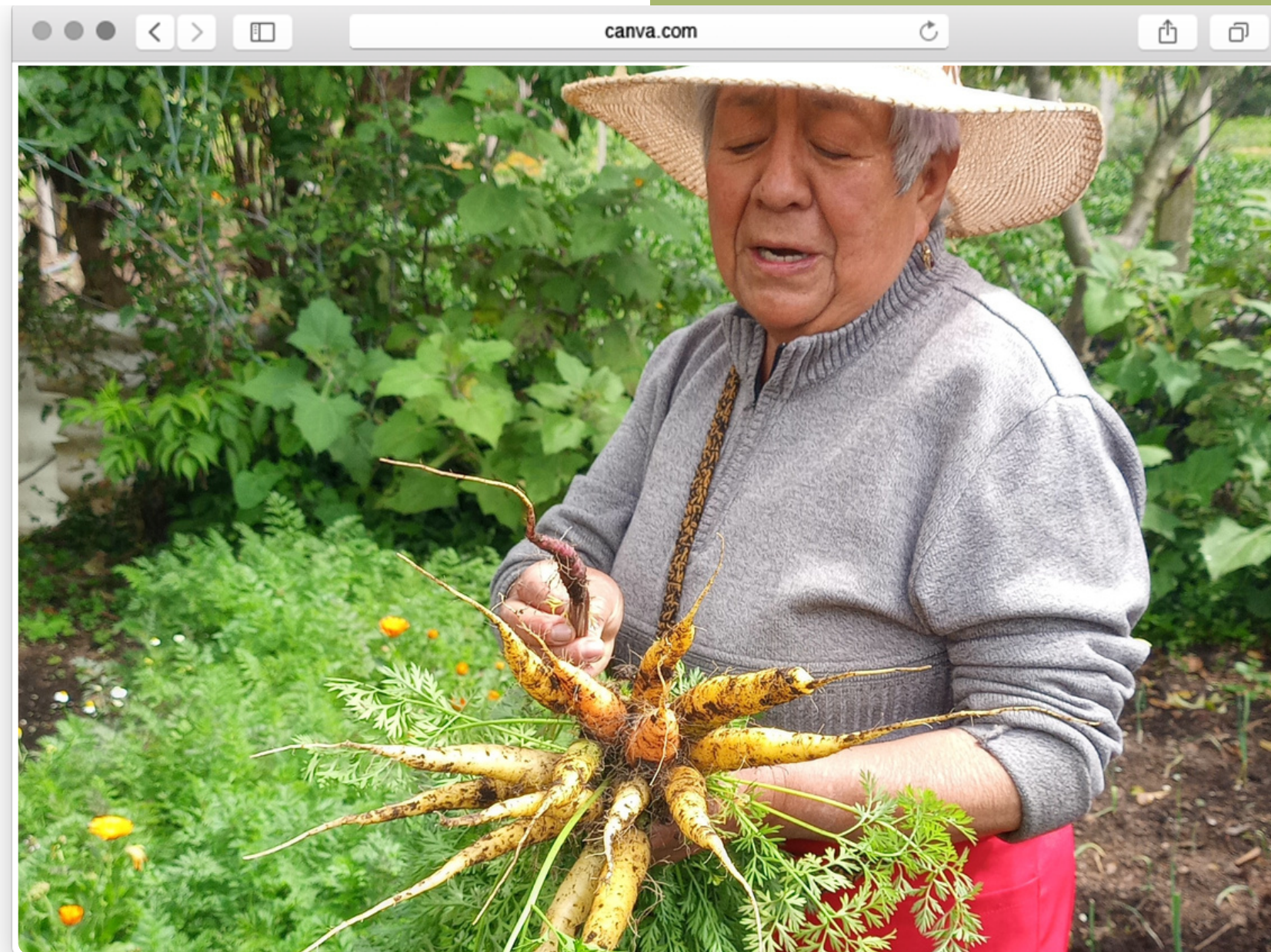




DIFFERENTIATE
ORGANIC/AGROECOLOGICAL/CONVENTIONAL
PRODUCTION AREAS OF SMALL COLOMBIAN
FARMERS, USING MULTISPECTRAL IMAGES

Carolina Rincón
MSc Applied Biology
CEO FromNativo

PORPOUSE



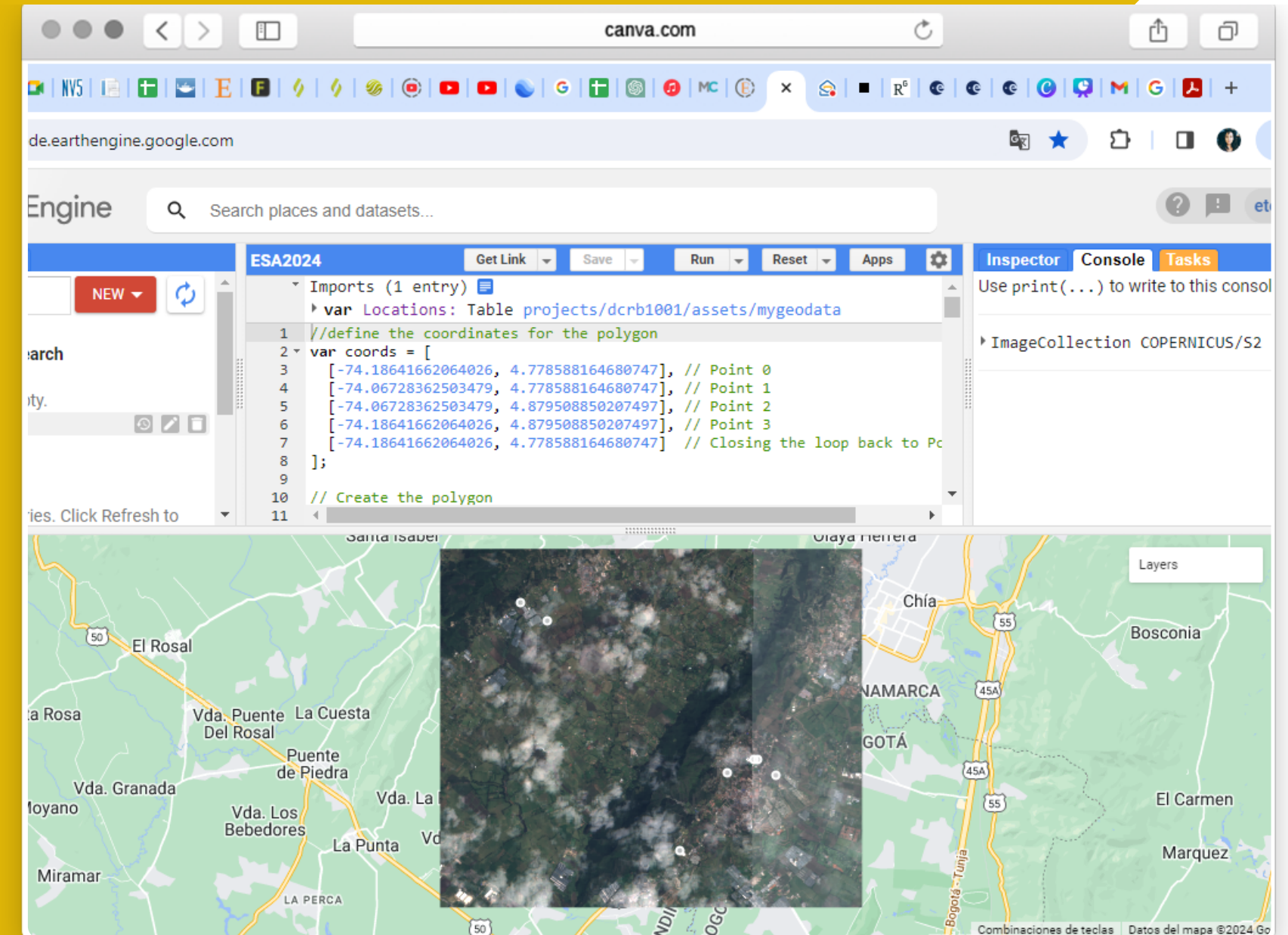
*Know alternative and reliable methods to identify conventional and organic/agroecological agricultural production lands, through multispectral satellite technology.

*Verify alternatives or complement organic certification with new technologies, so that it is simple, more economically accessible and constantly monitorable.

*By introducing crop type evaluation technology, this information can be monitored by producers, distributors and consumers.

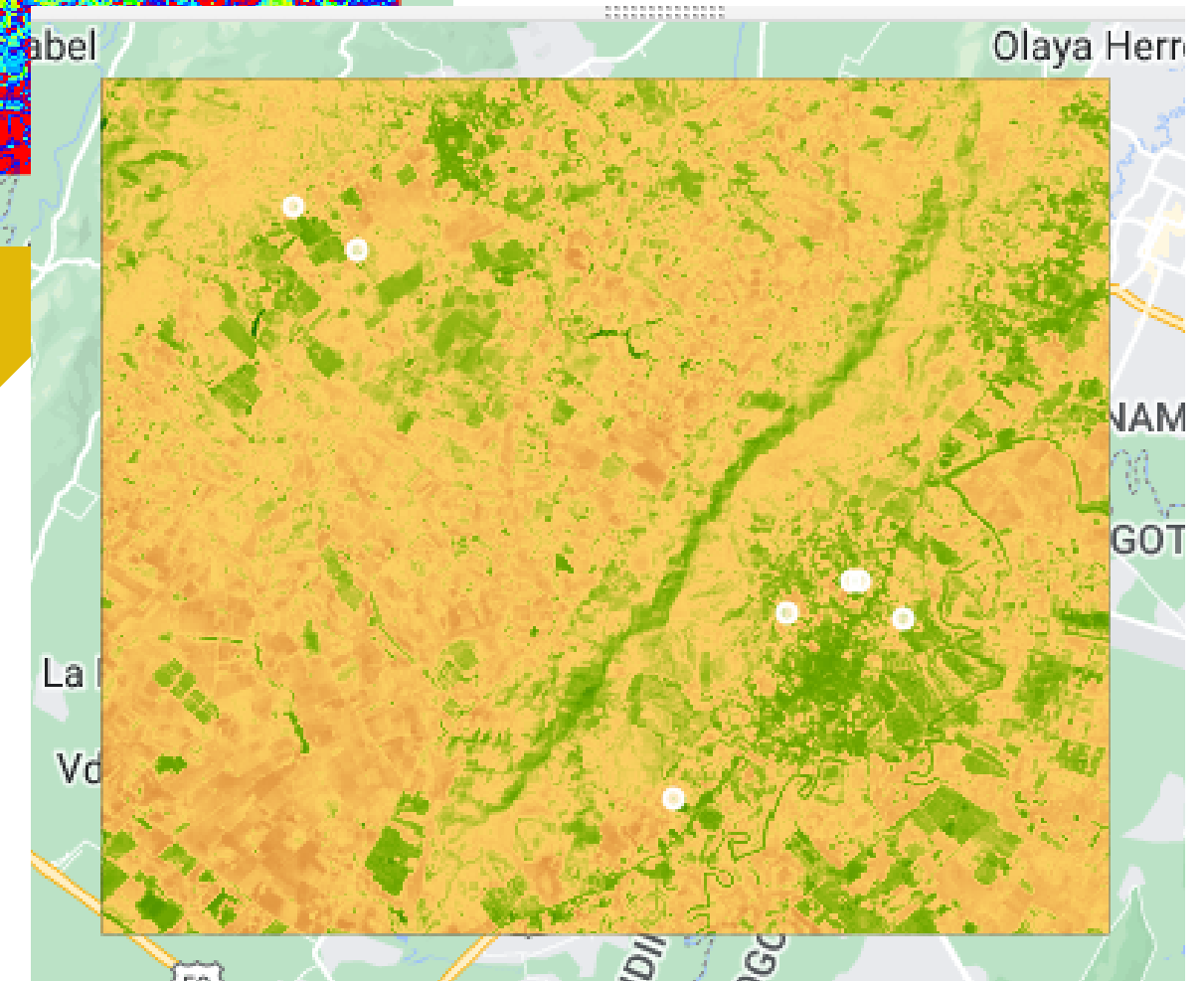
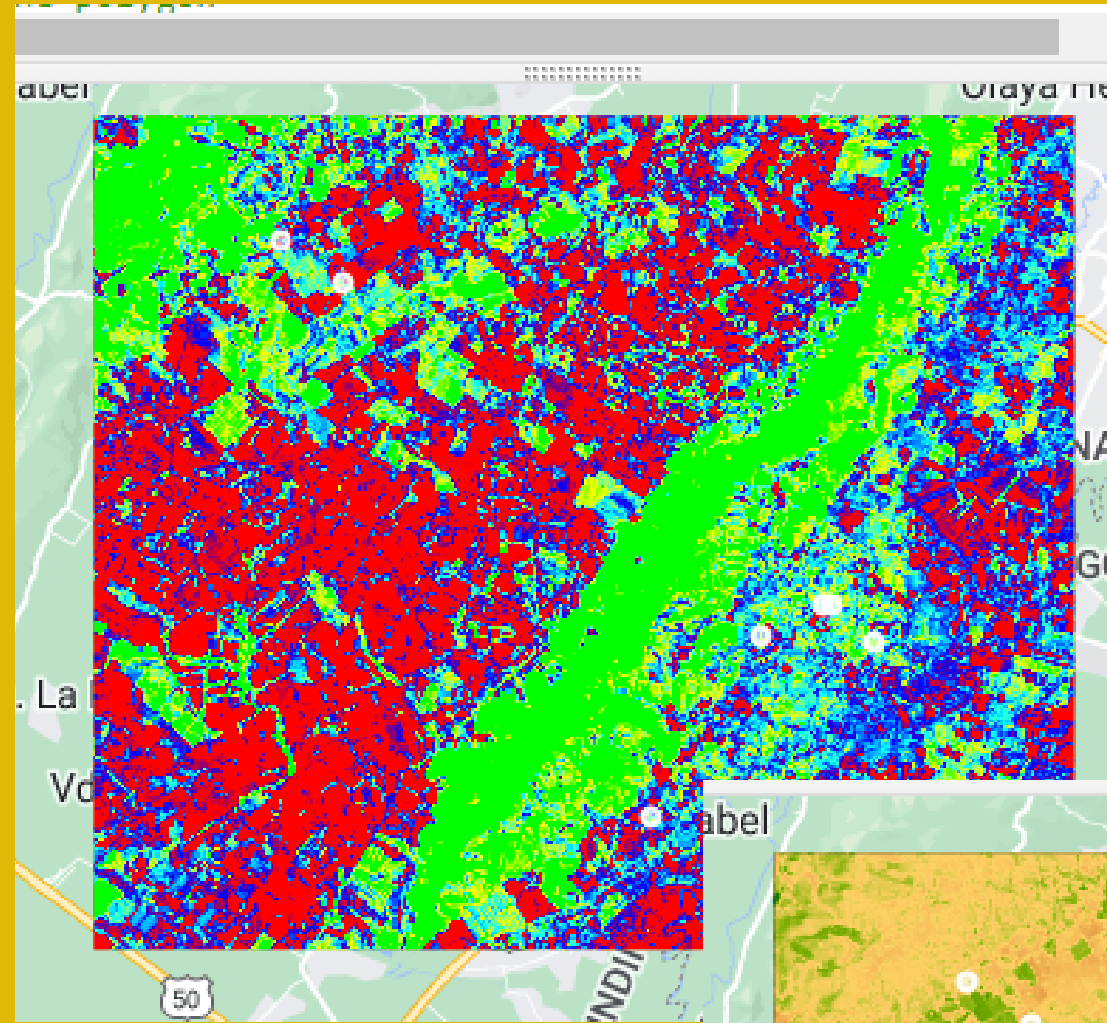
METHODOLOGY

- Select 6 spinach production systems from Cota and Tenjo (Cundinamarca), 3 production organic/agroecological and 3 conventional.
- Locate these properties through images sentinel satellites.
- Upload and analyze information on Google engine, the polygon was defined to locate the different places, both in code and in the map.
- Bring the sentinel 2 image collection, with 10 meters resolution, with coverage of 10% cloudiness, since 2020.

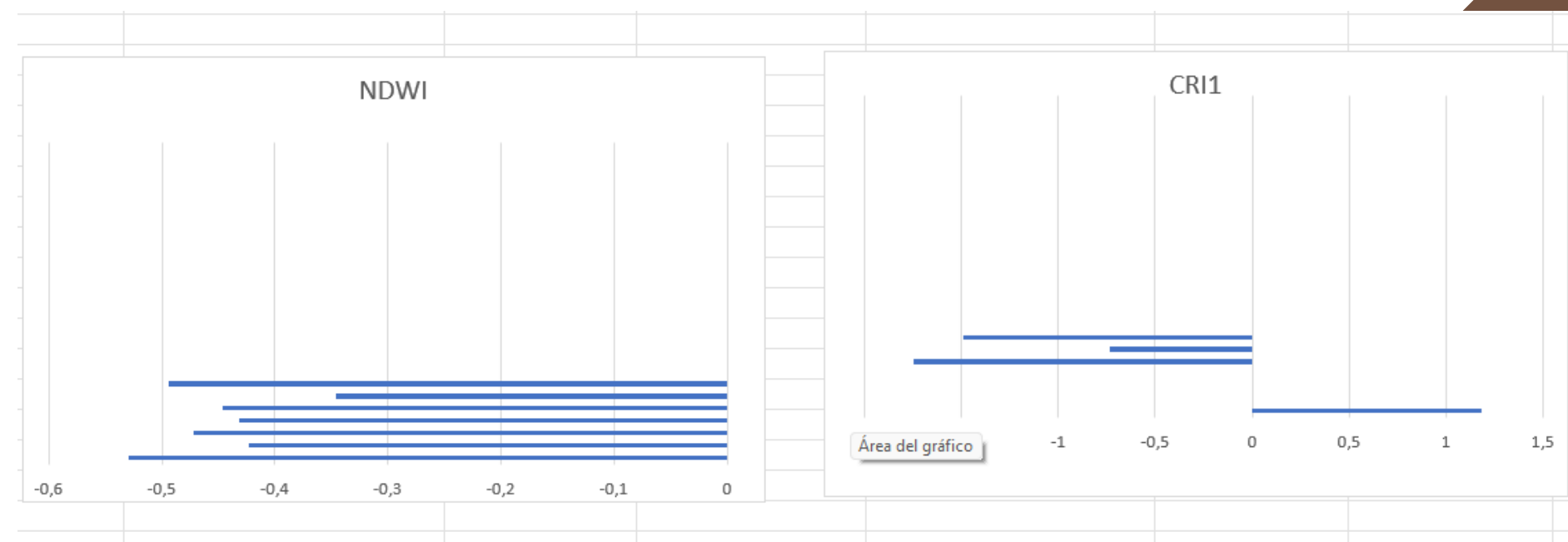
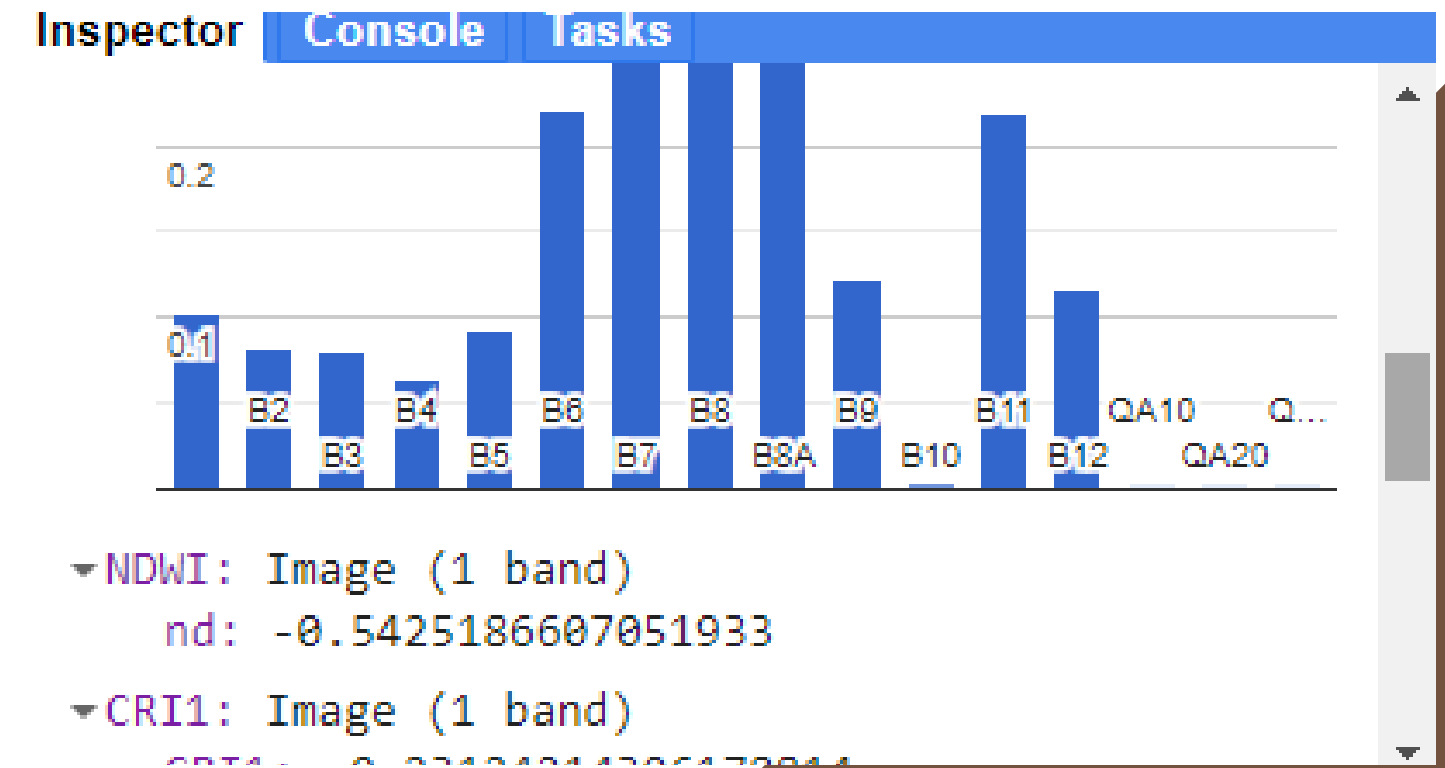


METHODOLOGY

- Calculate the average of the collection of images.
- Calculate indices via python script:
 1. Normalized Difference Water Index (NDWI) and
 2. Carotenoid Reflectance Index 1 (CRI1)
- Carry out the analysis of the results of the
 - indexes. Standard deviation diagrams were carried out by place and standardization of each index.



- The analysis methodology was known and developed to implement in future analysis, and differentiate organic/agroecological crops from conventional crops
- Significant differences were achieved in the analyzed indices, where significant differences can be seen between spinach from organic crops and conventional spinach crops.
- Some adjustments for taking images, specifically of the phenological development of plants, where they are very similar between organic and conventional, should be taken into account for future research.



RESULTS

THANK
YOU!

Thank you for believing in our proposal, it will be of great application.

ACKNOWLEDGMENTS

