



SPACE TECHNOLOGIES FOR
PUBLIC ADMINISTRATIONS IN
CHARGE OF CONTROLS RELATED
TO THE ELIGIBILITY OF
FARMERS FOR EU AIDS IN
AGRICULTURE

Copernicus for Local and Regional Authorities



User
Uptake

INTRODUCTION OF USE CASE

- Local and Regional Authorities may be requested to clarify the position of some farmers whose eligibility to receive EU aids, in compliance with the European Council Regulation N. 2078/92, is in doubt.
- **Satellite Earth Observation data may be used to check about the actual presence of arable lands before the farmer application for the EU contribution.**
- Landsat data have the right trade-off between spatial resolution (30 m) and temporal repetition rate (16 days), also offering a historical archive availability as long as 30+ years to identify and monitor land cover changes during the last decades.



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INTRODUCTION OF USE CASE

- NVDI (*Normalized Difference Vegetation Index*) is a “measure” of the vegetation (content, status, health, etc.) present within an image pixel. Different land covers have typical NDVI annual patterns enabling to discriminate them.
- The difference in NDVI maps computed in two different periods will help to distinguish arable from non-arable lands.



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USE CASE: FACTS

This demonstration will show how to compute the difference of NDVI in two different months of the year, do a Boolean mask, and verify the results on selected areas.

The demo here presented refers to a use case in **Basilicata Region (Southern Italy)**.

The methodology, designed by **University of Basilicata - School of Engineering and implemented by Geospazio Italia srl** is portable on different geographic areas.

(<http://www.geospazioitalia.it/index.php?lang=en>, a local SME)



Università degli Studi della Basilicata
Scuola di Ingegneria





Data
Access

DATA ACCESS SUBMODULE

- The software used is Quantum Gis (QGis), free and open source (<http://www.qgis.org/en/site/>)
- The data used are Landsat NDVI images of selected periods.
- There is currently no audio for this demo.



Step-by-step-guide 1

- Open QGIS
- Go to Layer -> Add Raster layer
- Browse to NDVI images in the 'ModuleAgric' folder and press 'open'
- Select both of them, holding Ctrl pressed
- Go to Raster -> Raster calculator; on the right, select the output folder and choose the output file name (e.g. 'NDVI_difference'); select the first raster image (e.g. Month 2, file 'L5188000_00019970710_NDVI.tif'), select the 'minus' operator, select the second raster image (e.g. Month 1, file 'L5188000_00019970304_NDVI.tif'), and finally press 'ok'

Step-by-step-guide 2

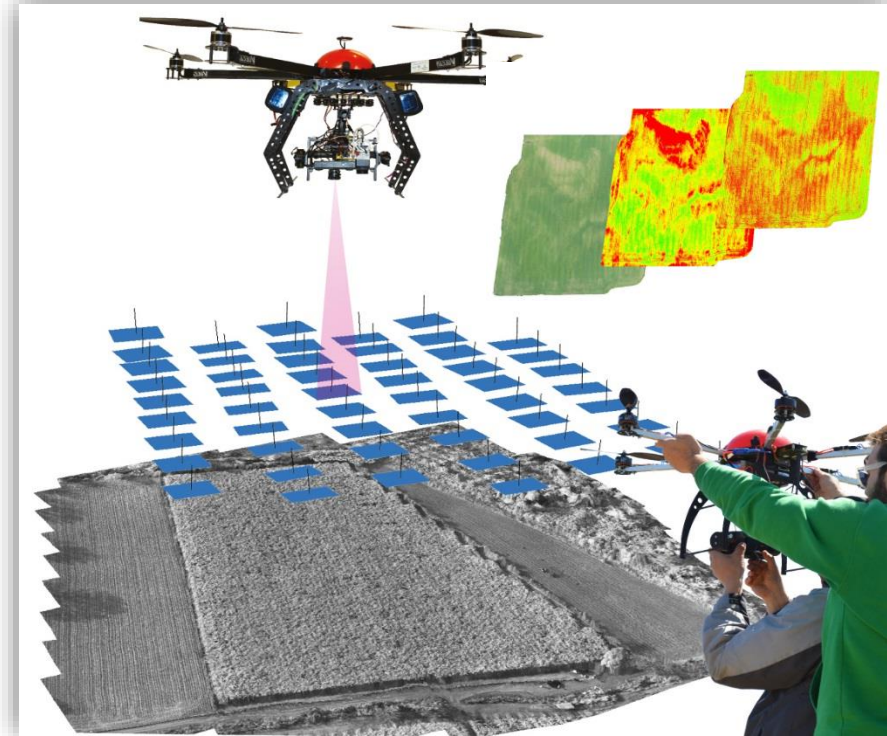
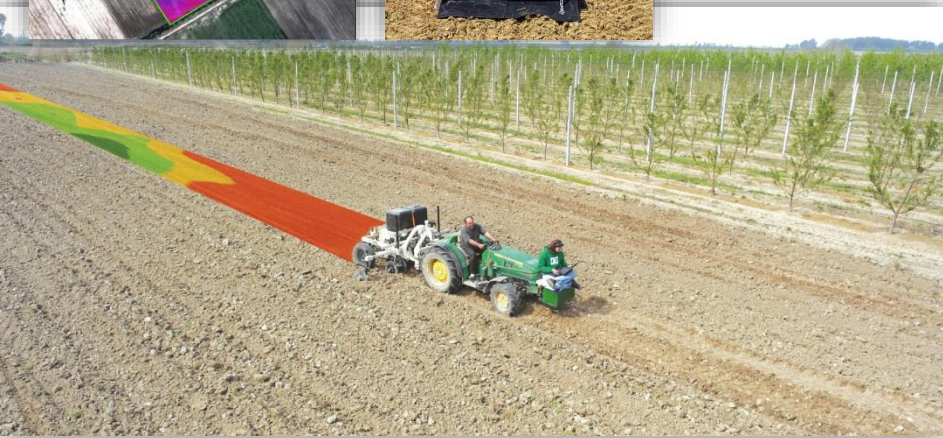
- Go to Raster -> Raster calculator; select the output folder and choose the output file name (e.g. 'BooleanMask'); digit the following string in the bottom area:
- "NDVI-difference@1" <= 0 = 0 AND "NDVI-difference@1" > 0 = 1 and finally press 'ok'
- Open the shape file of the area to be checked, going to layer -> Add Vector layer
- Browse to shape files in 'ModuleAgric' folder (files 'ArableLand.shp' and 'Non-ArableLand.shp') and press 'open'.
- Zoom over the area of interest. Remember that '0' (black colour) means 'arable land', '1' (white colour) means 'non-arable'.

Provided files

Month 1 NDVI:	L5188000_00019970
304_NDVI.tif	
304_NDVI.tif.aux.xml	L5188000_00019970
Month 2 NDVI:	L5188000_00019970
710_NDVI.tif	
710_NDVI.tif.aux.xml	L5188000_00019970
Example of arable land:	ArableLand.shp
	ArableLand.cpg
	ArableLand.dbf
	ArableLand.prj
	ArableLand.qpj
	ArableLand.shx
Example of non-arable land:	Non-
ArableLand.shp	
	Non-ArableLand.cpg
	Non-ArableLand.dbf
	Non-ArableLand.prj
	Non-ArableLand.qpj
	Non-ArableLand.shx

Ζωνοποίηση Εδαφών

Χρήση σύγχρονης τεχνολογίας για καταγραφή της παραλλακτικότητας του αγρού





Data
Access

Παροχή Υπηρεσιών Γεωργίας Μειωμένων Εισροών

Βιωσιμότητα:
Εφαρμογή σε μεγάλη
κλίμακα



Μεταφορά τεχνογνωσίας και καινοτομίας από τη θεωρία στην πράξη.

Το παράδειγμα του i-BEC με τη συνεισφορά του στο στρατηγικό πρόγραμμα **agro_less**



<http://agrolessproject.eu>



www.i-bec.org



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