SpectroFood – Information Agrifood quality estimation using hyperspectral techniques

Ioannis Malounas (AUA)

2019 cofunded Call
End-term Project Seminar
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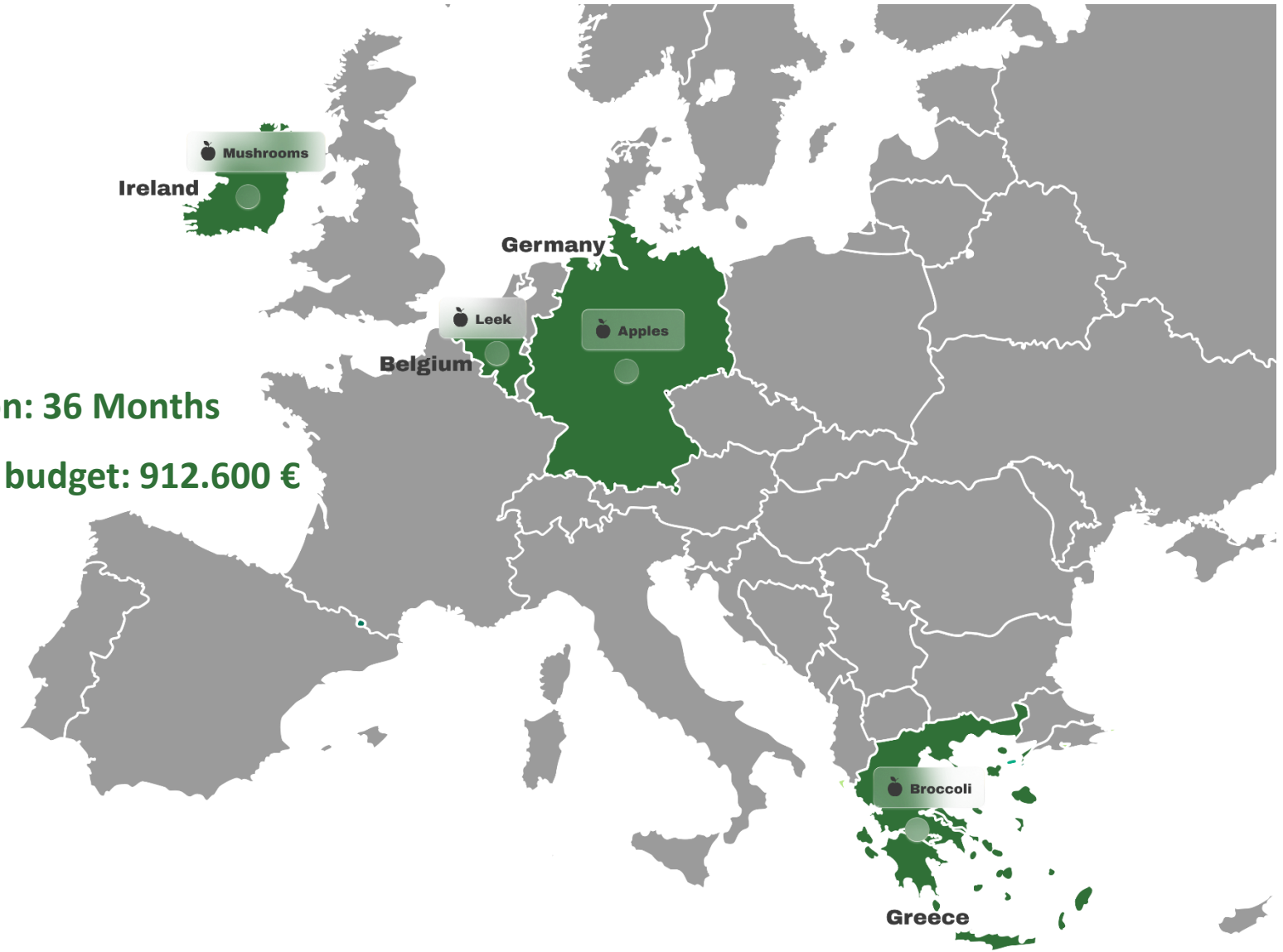
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grand agreement no 862665 ICT-AGRI-FOOD.

Involved countries and partners



Duration: 36 Months

Overall budget: 912.600 €

Objectives

Obj 1: Advances in the exploitation of emerging sensing technologies across the supply chain

- Develop expertise in the use of HIS as a robust quality evaluation tool at both field and post-harvest level.
- Reveal HIS sensor-specific limitations and define “global” imaging principles.

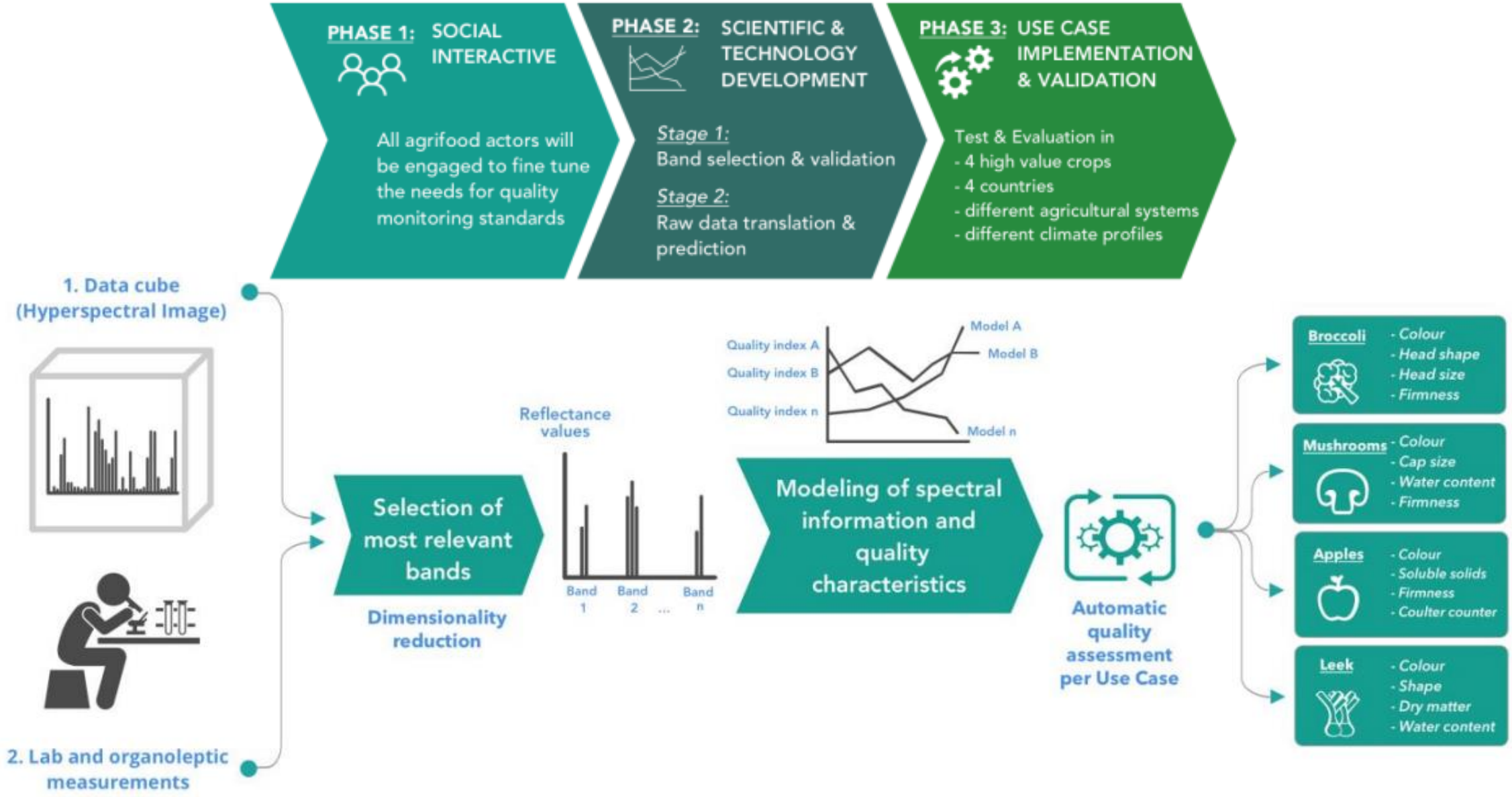
Obj 2: Study the effects of the in-field treatment on the post-harvest product quality characteristics

- A spatiotemporal analysis of the critical characteristics.
- More transparent and reliable product quality evaluation.

Obj 3: Analysis and availability of data to all the stakeholders involved

- Correlation of product parameters and significance analysis will boost data utilisation across all supply chain stages.
- Big volumes of spectral data will be translated into product quality indices.
- Better understanding and forecast of the product life cycle.

Selected research approach, methodology



Major results:Highlight key accomplishments and challenges faced

ACCOMPLISHMENTS

- ✓ >20 Publications in scientific journals and congress
- ✓ 7 crops studied
  - ✓ Apple
  - ✓ Broccoli
  - ✓ Leek
  - ✓ Mushroom

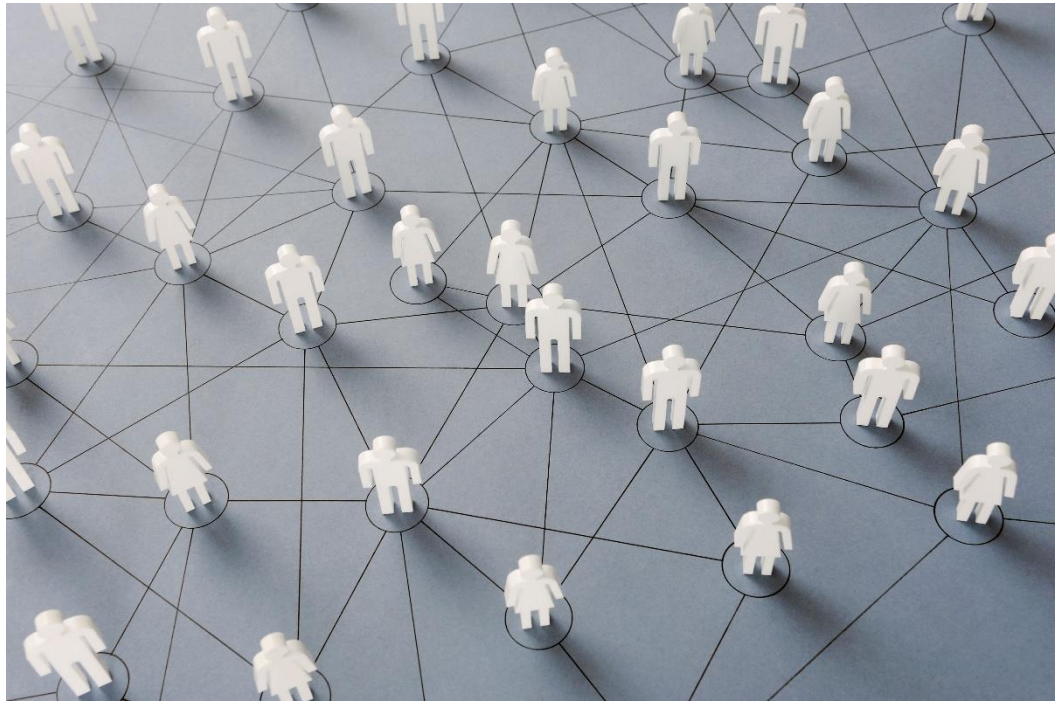
    +
  - ✓ Banana
  - ✓ Pineapple
  - ✓ Tomato
  - ✓ Onion
  - ✓ Potato
  - ✓ Chicory
- ✓ 1 Published dataset containing >1000 hyperspectral images
- ✓ SpectroFood platform online

CHALLENGES

- ✖ Crop seasonality
- ✖ Big Data transfer
- ✖ Covid-19 Pandemic
- ✖ Limited Data availability
- ✖ No of the shelf solutions

Cooperation with stakeholders, industry partners and/or public and private sector (if applicable)

- Growers
- Plant seedlings producers
- Academia
- AgriFood companies
- Tech companies (HSI manufacturers, drone service providers)



Opportunities and next steps for innovation

- Use of the SpectroFood dataset
- Investigation of additional crops
- Investigation of additional quality parameters
- Feedback to Hyperspectral Imaging System manufacturers

Summary and Conclusion takeaways and lessons learned

- Hyperspectral Imaging can improve production systems
  - Quality
  - Input efficiency
- No commercial solutions
- Limited data availability
- No data standardization
- No generalization capabilities

LET'S KEEP IN TOUCH!

Please feel always free to reach out to us.

LINKEDIN

https://www.linkedin.com/company/spectrofood

WEBSITE

https://www.spectrofood.eu

EMAIL

gmalounas@aua.gr

Thank you for your attention!