

# VITALISING ICT RELEVANCE IN AGRICULTURAL LEARNING

## ***Application of ICT technologies in viticulture and wine production – activities in the company “13. Jul Plantaže”***

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*INTRODUCTION VIRAL CONFERENCE*

*Banja Luka, Republic of Srpska, Bosna and Herzegovina, 21-23.01.2020.*

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# DIGITALIZATION IN AGRICULTURE

- unique tool in vineyard management according to local variation of agrobiological conditions
- achieve as much yield as possible, while reducing the amount of invested resources
- Increase the efficiency of the crop
- The best use of the inputs in order to reduce the costs
- Decrease the use of pesticides, herbicides, fertilizers...



*Plantaze*



# Digitalization projects



- PILOT PROJECT: **“Pilot for Brand Protection and Anti-Counterfeiting in Wine Industry“ - TagItWine** - within the H2020 project „Tag It Smart! A Smart Tags driven service platform for enabling ecosystems of connected objects.“– **2016-2018**
- PILOT PROJECT: „ **Precise viticulture“– irrigNET** – internal porject, started in **2017**
- H2020-DT-2018-2020 CALL- **Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector „DEMETER“** – **2019-2023**
- **DIPOL - Digital Transformation of Agriculture and Food Supply Chain in Montenegro** - National scientific research project granted by the Ministry of Science – **2019-2021**



# PILOT PROJECT: “Pilot for Brand Protection and Anti-Counterfeiting in Wine Industry” - TagItWine

- Project is realising within EU programme for research and innovation for period from 2014-2020, for the period of one year.
- **Project leader:** DunavNET - Novi Sad
- **Partners:**
  - „13. jul Plantaže“ a.d. Podgorica
  - Faculty of Information Systems and Technologies, University of Donja Gorica, Podgorica
  - Durst-Austrija
- **The aim of project:**

The aim of the project is to test TagItSmart technology from the point of view of brand protection and the prevention of counterfeiting in the wine industry, using modern Internet of Things technologies as a platform, through the development of "smart" labels / labels and smart bars or QR codes, NFC and SmartTags for bottles, / boxes.

TagItSmart project connects IT, cloud and mobile applications with modern printing technologies for functional inks. The goal is to have every product digitized, monitored and controlled, enabling better efficiency, quality and richer user experience.

**TAGITWINE PROJEKAT**  
Informacije o vinu  
i provjera originalnosti

Preuzmite aplikaciju  
Skenirajte pametni tag

• Recite nam što mislite •

*Plantaže*

UDG TAG IT SMART

Funded by the Horizon 2020 Framework Programme of the European Union

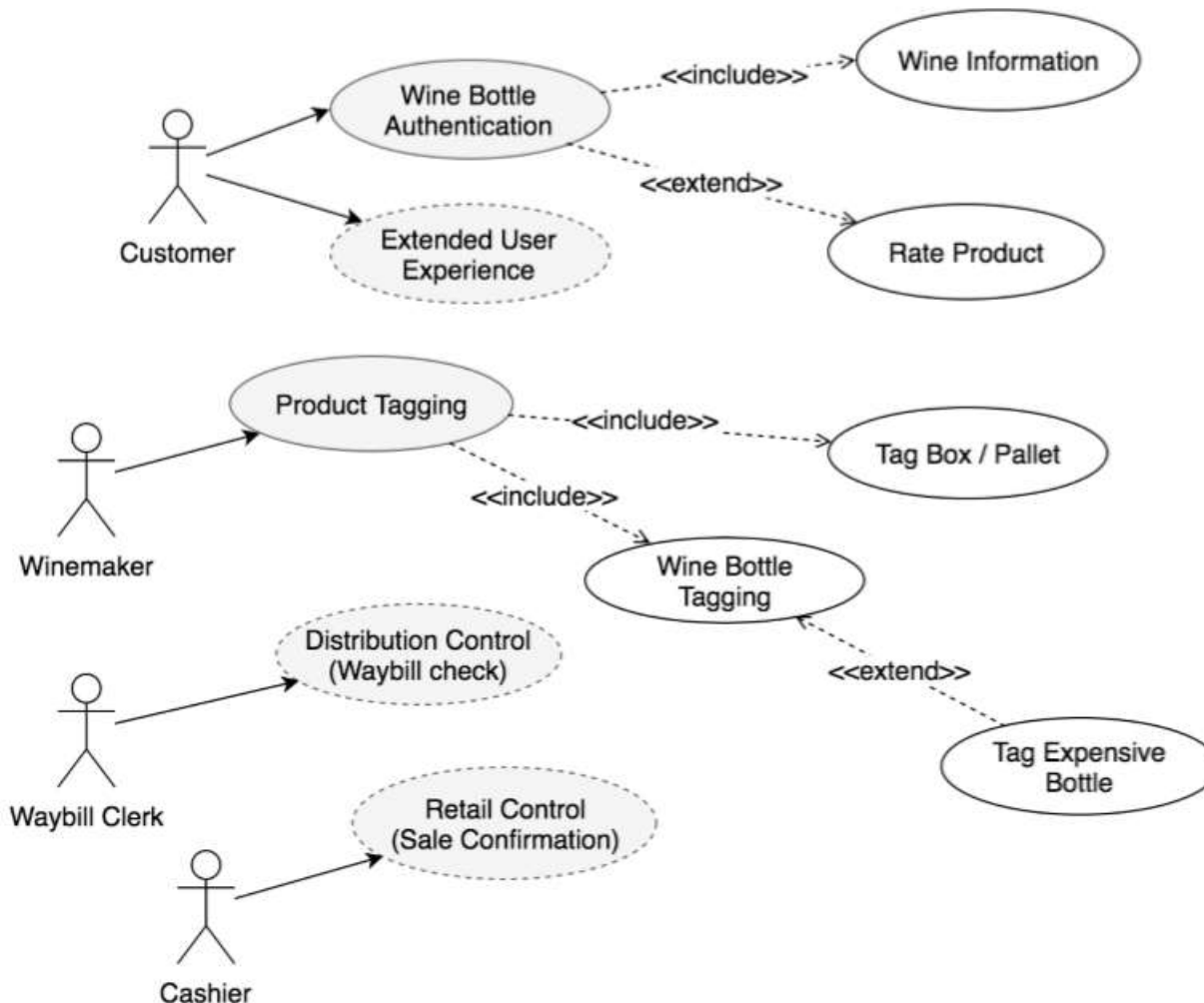
Posjetite sajt projekta:  
**TagItWine.me**

# Problem

- Brand protection and counterfeit prevention
  - Real problem, big challenges
  - Examples of fake wine labels



# TagItWine: Functional Overview





- ⓘ **Product Name:**  
Vladika
- 🍇 **Vintage:**  
2015
- 🍷 **Wine type:**  
*Dry red wine*
- 🌍 **Subregion:**  
Podgorica
- 🌐 **Country of origin:**  
Montenegro
- 🕒 **Expiration Time:**  
Unlimited
- 🛡️ **Sensors:**  
🌱 **Authentic**
- 🏭 **Producer:**  
Plantaže
- 📄 **Producer Description:**



M Utilizing Smart Sensors | X

A Medium Corporation [US] | <https://medium.com/origintrail/utilizing-smart-sensors-to-prevent-wine-fraud-origintrails-pilot-with-tagitsmart-1949dc62113f>

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with the TagItSmart platform. Throughout the life cycle of the wine bottle, consumers can check its authenticity and get the details about that particular bottle of wine. Each scan of the QR code is logged and the information about that particular bottle is updated and used by the solution's heuristics. For example, a consumer can check a bottle with their mobile phone while in a retail store—even when a smart tag is valid—



## PILOT PROJECT: „ Precise viticulture“– irrigNET 2017 - ...

- **PILOT PROJECT: „ Precise viticulture“– irrigNET**
- **Project participants:**
  - The company „13. jul Plantaže“ a.d. Podgorica
  - Company „DunavNet“ , Novi Sad
  - Faculty of Information Systems and Technologies, University of Donja Gorica, Podgorica

- **Project objective:**

The objective of the project is to optimize irrigation using the service - sensors for soil moisture monitoring (precise viticulture), which will reduce the costs of irrigation of the grapevine. Rational irrigation will avoid the excessive and unnecessary increase of soil moisture, which affects the quality of the raw material for the production of top quality wines.

- **Results of the project:**

The service provides a constant insight into the movement of moisture in the soil at different depths and provides information about needs and quantities of water for irrigation. Data can be monitored through a mobile and web application



*Plantaze*

DUNAV  
NET



## PILOT PROJECT: „ Precise viticulture“– irrigNET



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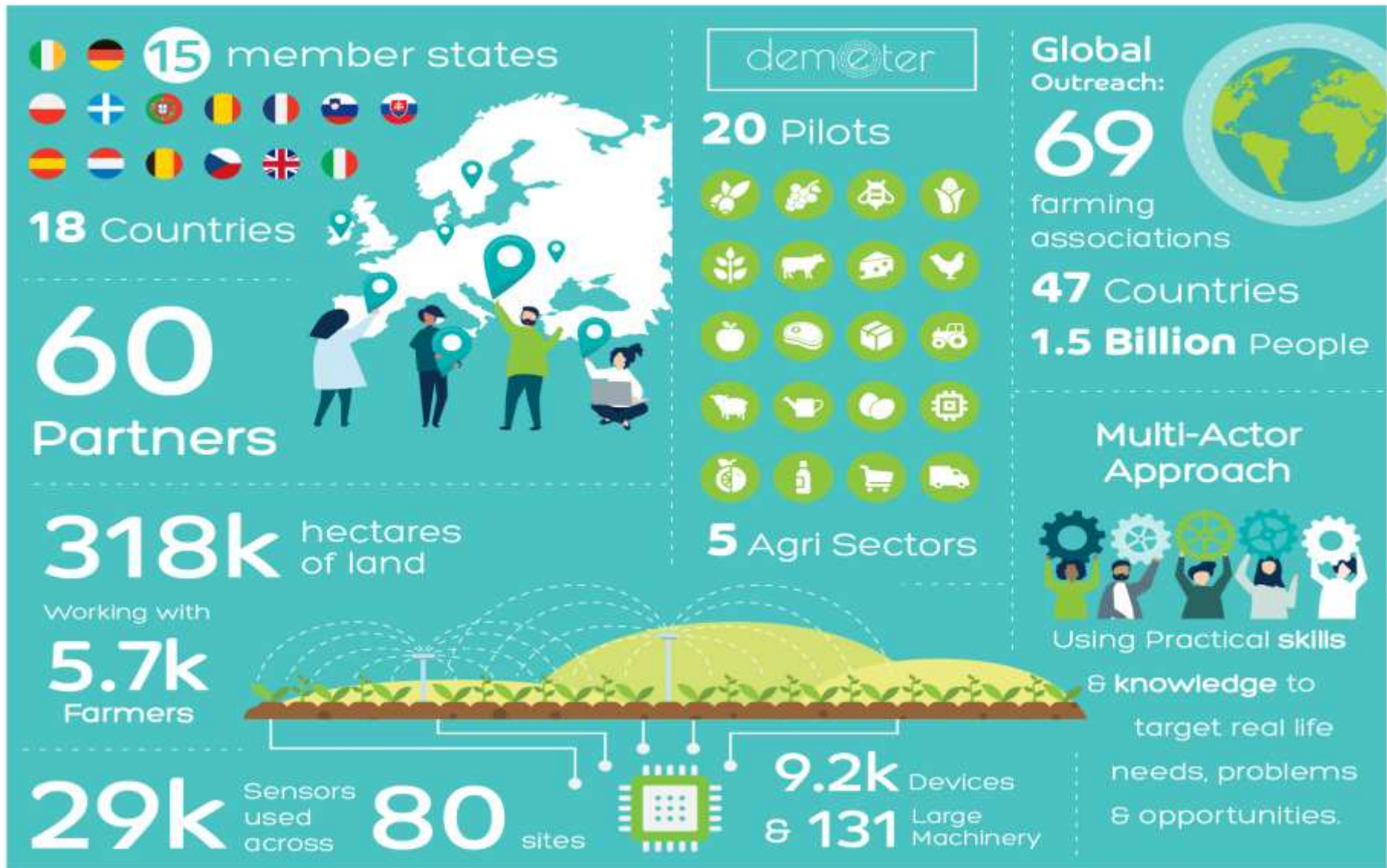
## Real-time field measurements to optimize irrigation

01 MARCH 2018, BRUSSELS, BELGIUM

„13 Jul Plantaže“/Viticulture and wine



# H2020-DT-2018-2020 - Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector „**DEMETER**“



# H2020-DT-2018-2020 - Building an Interoperable, Data-Driven, Innovative and Sustainable European Agri-Food Sector „DEMETER“

- **The aim of project:**

The aim of the project is to create a secure and sustainable InternetOfThings (IoT) technology and business ecosystems whose impact can be implemented in the agriculture and food sector in Europe as well as in the world.

By digitizing the system, i.e. by using smart sensors within the company project **13. jul Plantaže** will carry out activities aimed at "anticipating diseases and pests, irrigation optimization, product transparency in the supply chain, i.e. from orchards and vineyards to end-consumers".

- **Expected results of projects:**

By using new sensors and IoT technology in our business, we are working on the further development of our company. The implementation expansion of the use of IoT and Cloud solutions, together with the analysis of the data collected during the DEMETER project execution, will help the company to understand the real problems and mistakes in irrigation practice so far, as well as to identify improvements that could be made in the future.

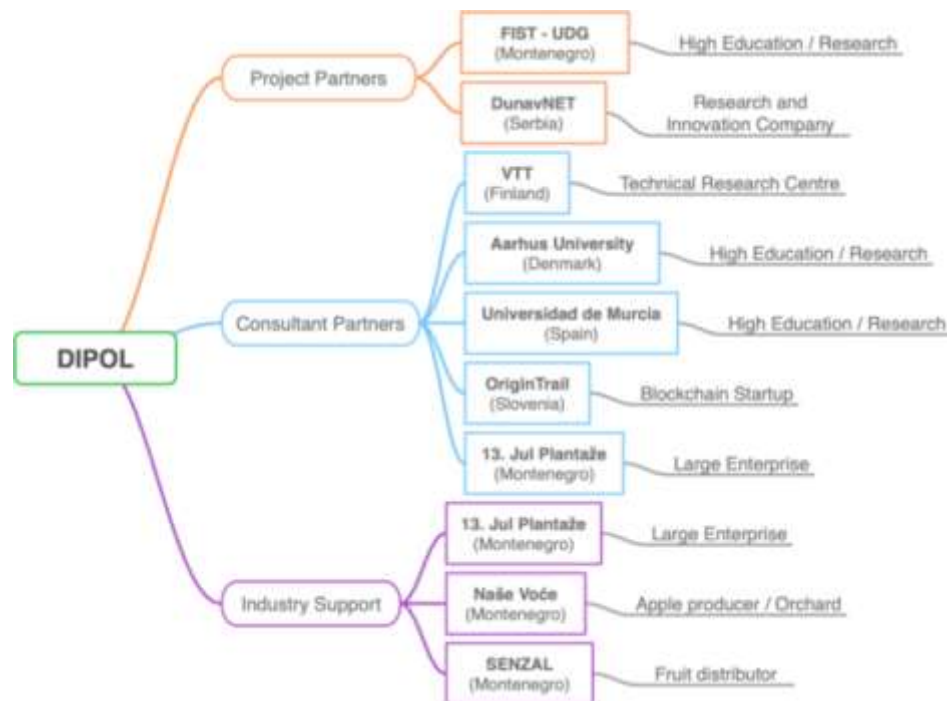




# DIPOL - Digital Transformation of Agriculture and Food Supply Chain in Montenegro

## Učesnici projekta :

- The company '13. JUL –PLANTAŽE', Podgorica
- Company 'DunavNet' , Novi Sad
- Faculty of Information Systems and Technologies, University of Donja Gorica, Podgorica
- Company 'NAŠE VOĆE', Nikšić



# DIPOL - Digital Transformation of Agriculture and Food Supply Chain in Montenegro

## Project objective:

The project goals are in line with the fact that agriculture is major component of Montenegrin economy and agriculture and agri-food production are main components of Europe's economy and strategic priorities. The main goals of the project are:

- Performing use case analysis in order to specify system requirements and select test sites to demonstrate digital transformation of agriculture and food supply chain in Montenegro;
- Implementing of precision agriculture pilots by using state-of-the art sensors and Internet of Things (IoT) enabled digital farming platform;
- Implementing of supply chain platform based on digital product identifier with possibility to employ blockchain based technology;
- Research and develop new decision support components based the use of the collected data utilizing machine learning and artificial intelligence algorithms.

**Thank you !**



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