

SEBASTIEN

M16 - Final release of the service portal

Milestone Lead	CINECA
Milestone due date	2024/06/30
Status	FINAL
Version	V1.0
Project	SEBASTIEN

Agreement: INEA/CEF/ICT/A2020/2373580 **Action:** 2020-IT-IA-0234



Co-financed by the Connecting Europe
Facility of the European Union

DOCUMENT INFORMATION

Title	Milestone 16 - Final release of the service portal
Agreement	INEA/CEF/ICT/A2020/2373580
Action	2020-IT-IA-0234
Creator	CINECA
Milestone Description	Final release of the service portal
Means of verification	Final release of the portal publicly accessible; link shared with the Agency
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Requested deadline	M30
Reviewer	Alessandro D'Anca (CMCC)

Final release of the service portal

The final version of the Sebastien Services Portal is accessible at the following URL:

<https://dds.sebastien-project.eu/app/catalog>

where the complete set of services is available. Access to the services requires the user to be registered on the web portal.

The Service Portal implements the following features:

1. The home page with the lists of all the available services.
2. User authentication and authorisation, user profile management (change password, etc.)
3. The Portal is available in 2 languages: English and Italian.
4. Features for the web portal administrators: users and groups management, logins and sessions list, server statistics, admin send email.
5. Service “Coping with environmental stressors for breeds” is composed by two sub-services:
 - a. “Estimation of production decline based on climate variables”: it provides an estimate of the impact of the climate, both outside and inside the stable, in the short and long term, on the quantitative and qualitative characteristics (percentage of fat and protein) of the milk.
 - b. “Adaptability of species/breeds to stress due to climate change”: it estimates the impact of climate change on the adaptation of different cattle breeds or groups, using future climate projections, both external and internal to the stable.

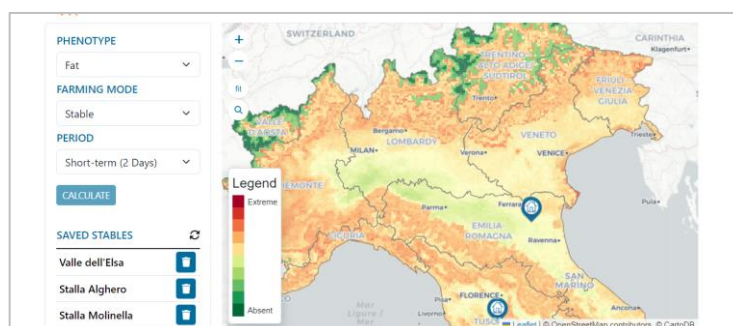


Figure 1 - Estimation of production decline based on climate variables

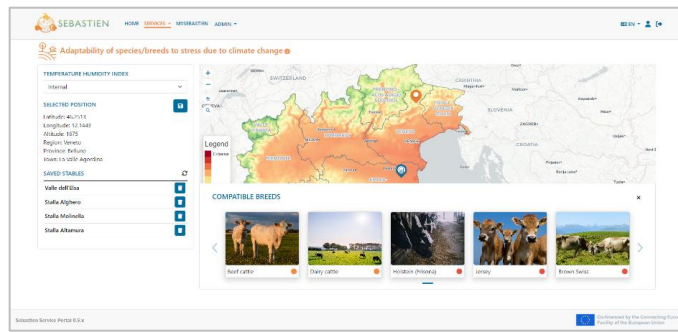


Figure 2 - Adaptability of species/breeds to stress due to climate change

6. Service “Intensive farming risk management under climate extremes” provides an estimate of the temperature-humidity index (THI) inside stables based on external environmental conditions, in both the short and long term. It is composed by two sub-services:
 - a. “Estimation of the environmental conditions of the stables”
 - b. “Projection of the environmental conditions of the stables in the long term”

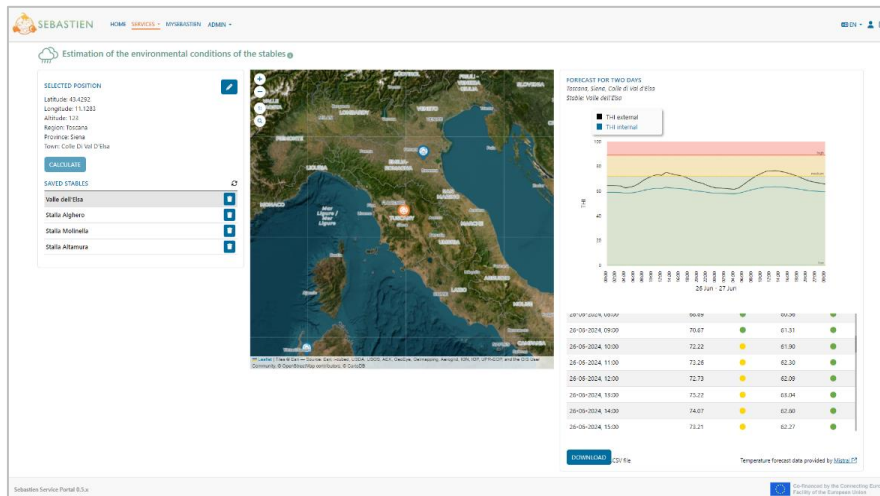


Figure 3 - Estimation of the environmental conditions of the stables

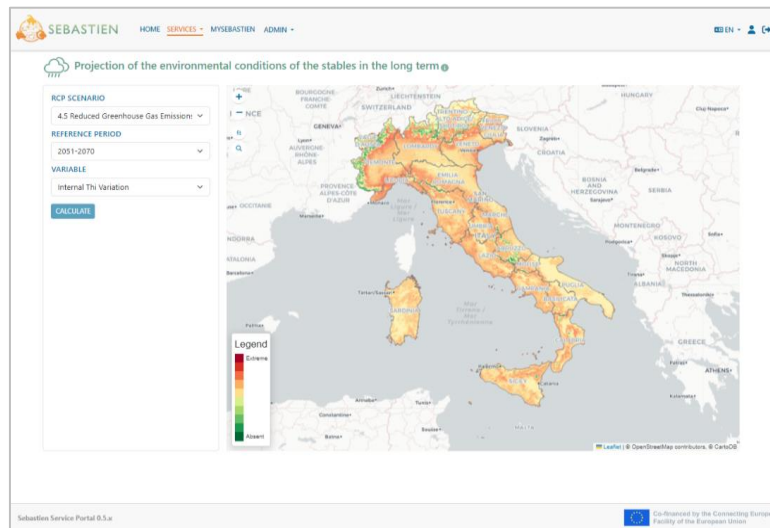


Figure 4 - Projection of the environmental conditions of the stables in the long term

7. Service “Extensive farming management and feed availability: Pasture monitoring” evaluates fresh and dry biomass and livestock carrying capacity (both for cattle and sheep) of pastures in near real-time, using satellite data.

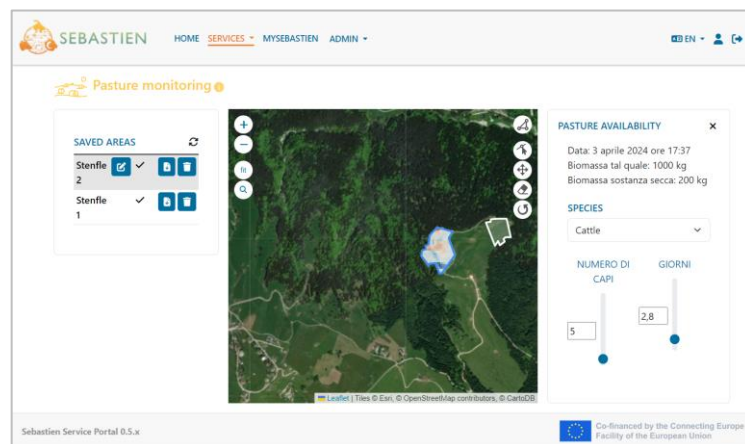


Figure 5 - Pasture monitoring

8. Service “Livestock farming under risks from combined abiotic and biotic factors” provides updated risk maps of parasites and diseases spread. It is composed by two sub-services:
 - a. Mastitis: estimation of the impact of the climate, both outside and inside the stable, in the short and long term, on somatic cell counts, an indirect indicator of udder health

- b. Blue Tongue: forecast from July to November of the greater or lesser probability of developing Blue Tongue in sheep in Sardinia in the future compared to the past.

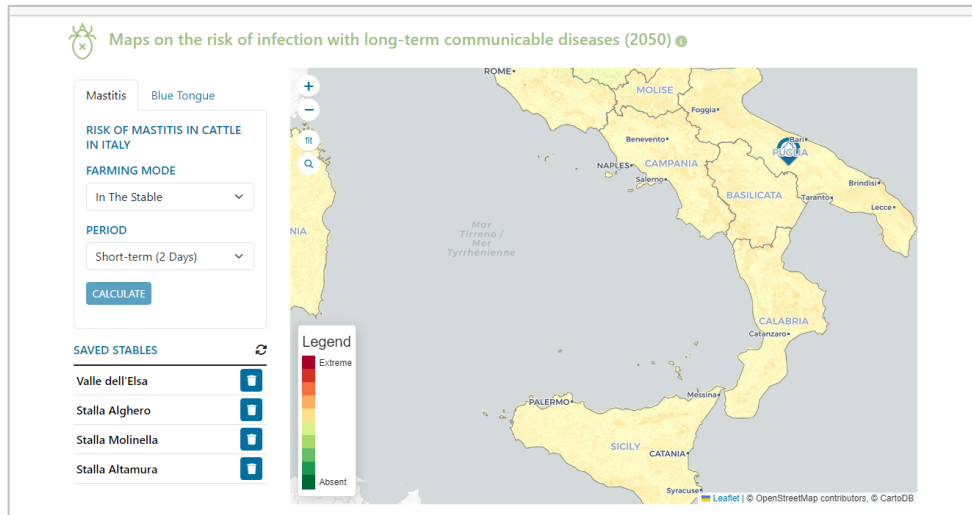


Figure 6 - Mastitis

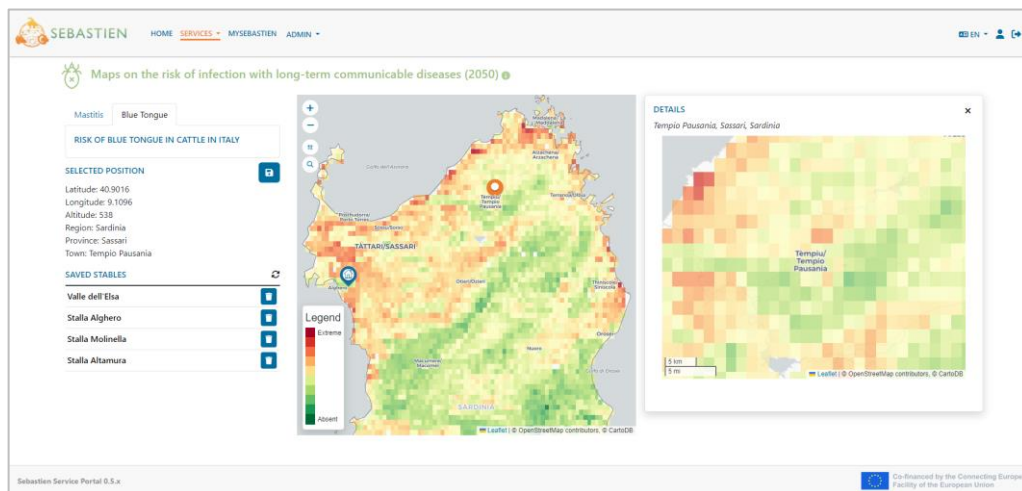


Figure 7 - Blue Tongue

9. The stable management functionality is available directly inside the page of the services: users can save information relating to the location of their stables to use in subsequent sessions, and they can also modify and delete their saved stables.
10. The pasture management functionality is available directly inside the page of the Monitoring service: users can save information relating to their pastures to use in subsequent sessions, and they can also modify and delete their saved pastures.



11. MySebastien functionality: this section of the website allows users to view the list and all information about their saved stables and pastures: users can modify and delete them and view their location on a map. Moreover users can see the list of their sensors on animals and reach the sensors dashboard.

My Sebastien		Sn	Position	Time	
Stables		1123c002	Latitude: 42.4505 Longitude: 12.0866	23/05/2024 00:04:26	
Pasture Zones					
Sensors		1123c035	Latitude: 42.4495 Longitude: 12.088	23/05/2024 09:23:49	

Figure 8 - MySebastien

12. The dashboard of the sensors on animals: it allows monitoring the data collected in real time by a set of sensors. These sensors were developed within the Sebastien project, were mounted on a group of animals and now are sending the recorded data to Sebastien's Data Lake which collects them and makes them available through APIs. The dashboard developed in the Sebastien Portal allows users to view the last position of their sensors on a map, to select one of the sensors and view graphs of the data of the last 24 hours produced by that sensor (e.g. animal temperature, environmental temperature and humidity, movement, etc.).

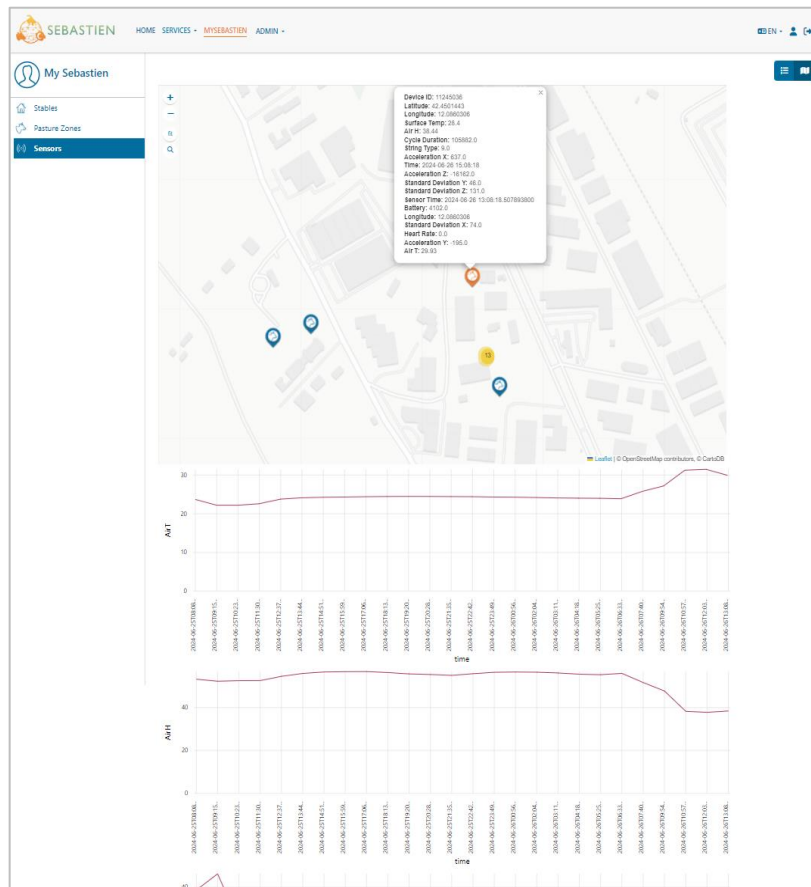


Figure 9 - Dashboard of sensors on animals

13. All these web portal functionalities are based on the backend APIs. The backend APIs implement the access to the Data Lake APIs that provide georeferenced data and risk maps through OGC services. The backend APIs are documented at this URL:

<https://dds.sebastien-project.eu:7777/>