



CLIMOS Press Release

Climate Monitoring and Decision Support Framework for Sand Fly-borne Diseases Detection
and Mitigation with COst-benefit and Climate-policy MeasureS



Strengthening public health resilience through sand fly surveillance.

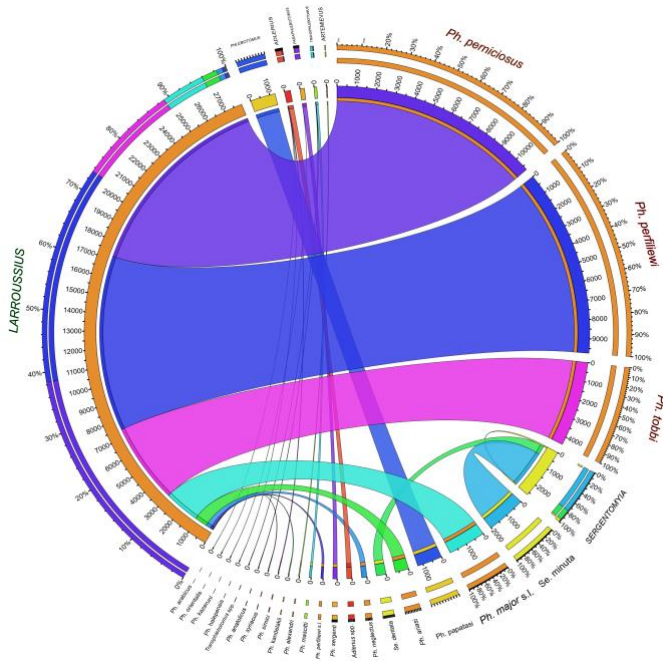
October 2024

The CLIMOS General Assembly, held in Rome and hosted by Istituto Superiore di Sanità, showcased a series of vital developments in the ongoing work to assist public authorities to fight against sand fly-borne diseases, including leishmaniasis and phlebovirus infections. As the project finalizes its second year of realization, partners gathered to assess progress, and the final impact of our research.



A key focus during the discussions was the identification of sand fly specimens collected throughout 2023 season. This process has been completed for most countries, with pathogen detection efforts now underway. These findings will be integrated into the Early Warning System (EWS) dataset. By correlating sand fly presence and density with variables like temperature, humidity, or altitude, we aim to enhance our predictive models. The ultimate goal of CLIMOS is to deliver a comprehensive platform for public health management and to develop adaptation strategies for sand fly-borne diseases.

Results on sand fly collection



Almost all partners processed the sand fly specimens collected during the first season. Of the more than 35,000 specimens processed, around 93% were identified to the species or subgenus level. A total of 19 sand fly taxa, belonging to seven subgenera, have been identified so far.

Most of the specimens were found to be members of the *Larroussius* subgenus. Among them, *Ph. perniciosus*, *Ph. perfliewi*, and *Ph. tobbi* comprised the majority of the catches. Partners have begun screening pools of sand flies for disease-causing agents, including the ongoing identification of blood meals in engorged females.


On the **pathogen detection front**, the screening for ***Leishmania*** has already been completed in Austria, Croatia, Germany, Italy, and Slovenia. Likewise, **Phlebovirus** analysis was completed in Austria, Croatia, Corsica, Germany, and Slovenia specimens.

Manuscripts on the **vector competence** of *Ph. perniciosus* and *Ph. tobbi* for *Leishmania* species are under review, while new research study on *Sergentomyia minuta* is in preparation. Additionally, the design of a new **semiochemical-sticky trap** for sand flies has been finalized, while the development of a prototype trapping device featuring a camera and battery pack is in progress. These innovations promise to significantly enhance sand fly monitoring and control efforts in affected regions that could be expanded to other vector's control.

Research of **recombinant salivary antigens** as markers of exposure to sand flies is being conducted, which will be used to estimate exposure in both dogs and humans, providing critical information for disease risk assessments.

CLIMOS Early Warning System

CLIMOS is preparing different co-creation workshops that will soon be launched across nine countries to gather local stakeholders' inputs on how best to implement the EWS for sand fly-borne diseases, ensuring that the system meets the needs of public health authorities, veterinarians, and other local communities.

The Assembly concluded with a productive **exploitation workshop**, which explored how the project's findings can be applied in real-world settings. The next steps include drafting a detailed plan to identify key results that can be developed and applied under the project's framework, ensuring that CLIMOS' scientific insights translate into tangible benefits for public health and disease prevention. 

For more information on CLIMOS and the latest project developments, please visit <https://climos-project.eu/>

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