

Report on the outcomes of a Short-Term Scientific Mission¹

Action number: CA17108

Grantee name: Beniamino Caputo

Details of the STSM

Title: A framework to integrate active and digital surveillance and to increase mosquito alert Italian community

Start and end date: 10/10/2022 to 14/10/2022

Description of the work carried out during the STSM

The discussion had with Frederic Bartumeus and its team of Mosquito Alert during STSM in 10-14 October have been sub-divided for different categories: app functionalities, expert validation processes and identification in the “Entolab” software, data storage, web GIS map visualization, statistical analysis of MA data including: a) model for propensity of sending at least one report, b) basic and new approach to calculate sampling effort, c) Bayesian model at different geographical scale to predict a reliable report; and finally public data release.

In following text, I will report the improvements for app and data analysis. Many of those will be not resolve immediately but could be helpful for future.

Description of the STSM main achievements and planned follow-up activities

APP FUNTIONALITIES:

From now due to difficulties to program inside the app, will not be easy to include new functionalities into the app. In the future will be reasonable to include:

- 1) **in the session my Data** the answer of the expert that is available now in the session “Notification”.
- 2) **in the session bite** the number of mosquitoes observed.
- 3) **in the session breeding sites** an automatic notification message to user to prevent the

¹This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.

growth of the larvae inside a removal (not for the session catch basins) breeding sites (example” if it is possible remember to eliminate water from the breeding site to prevent larvae developing”).

ENTOLAB:

- 1) visualize the number of pending photos from Italy (at least for nation expert).
- 2) visualize inside the national expert Entolab if the photo has been sent from gallery or from real time and if the photo has been sent by current location or manually select (this will be particular helpful for plan an immediately field surveillance).
- 3) Include the possibility to select gender for photo of mosquito and in general annotation of the mosquito physiological status of female such as “unfed or blood fed”.
- 4) Include the “Aedes sp” genus inside the mosquito categories (such for “Culex sp”)
- 5) Include the possibility for Entolab expert to search a photo report by data.

DOWNLOAD MOSQUITO ALERT DATA

- 1) Include the classification of “other species” (species level such as Anopheles maculipennis) in zenodo data.
- 2) give the possibilities to daily (or weekly) download background data in a cryptic format.
- 3) If possible, have the possibility to have from google analytic the daily download for a particular country/ regional level (this will be particularly helpful to follow in a real time MA communication event) or give the possibility to follow daily participation in real time by the user registration time database (background data).

Date 20/10/2022

Benvenuto Caputo