



VBD-Air short tutorial

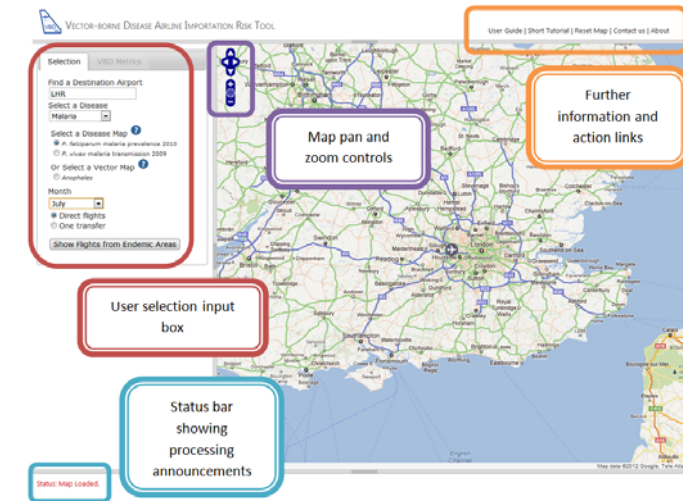
1. The **Vector-borne disease airport importation risk (VBD-Air)** tool aims to help better define the roles of airports and airlines in the transmission and spread of insect-borne human diseases. It represents a flexible tool that combines multiple geospatial datasets to inform on the relative risks between differing airports, flight routes, times of year, diseases, and their vectors, in promoting the movement of passengers infected by vector-borne diseases and the vectors that spread these diseases. These datasets include global disease risk maps, vector presence maps, air travel network and capacity information, and global climatic datasets.

2. The **dashboard interface** is shown below. The selection box in the top left is where you can make your choice of airport of interest (autocomplete functionality means you can enter a city name, airport name, or airport code), choose your insect-spread disease or disease insect vector of interest and your month of interest. Here the user is interested in knowing about the likely relative risks by origin and route of imported cases of *Plasmodium falciparum* malaria into London Heathrow airport in July.

3. Once user selections have been made, corresponding **risk routes and maps** are shown in the viewing window.



Here, the status bar states that 15 airports from areas with stable *P.falciparum* transmission have direct flight to London Heathrow, and these routes are mapped. Users can then explore additional metrics through the 'VBD Metrics' box in the top left. The question mark icon help button gives further information on these. In this case, both imported disease and onward transmission relevant metrics are available. Each choice of metric prompts the routes to be recolored and the top 10 origin airports by metric size to be listed in the top-right box. Users can click on any of these listed airports to zoom the map to that airport. Map view controls in the left window enables users to examine geographical context more closely, including land-based travel time estimates for ease of access to/from airports. Finally, the disease summary PDF link in the top left window enables users to download a report containing summary statistics.



4. The **airport and disease/vector-specific reports** are produced in a standardized arrangement and PDF format when the summary report link is clicked. This report summarizes the risk metrics for the user-specified type of risk assessment, airport, disease/vector and month, as well as providing some background and caveats to the approaches used, and guidance on possible approaches to mitigating risks. Tables of top 10 incoming routes from disease endemic/vector presence areas ranked by different risk metrics are provided, together with plots showing how the risks from these routes vary over the course of a typical year due to seasonal changes in flight traffic and climatic conditions.

