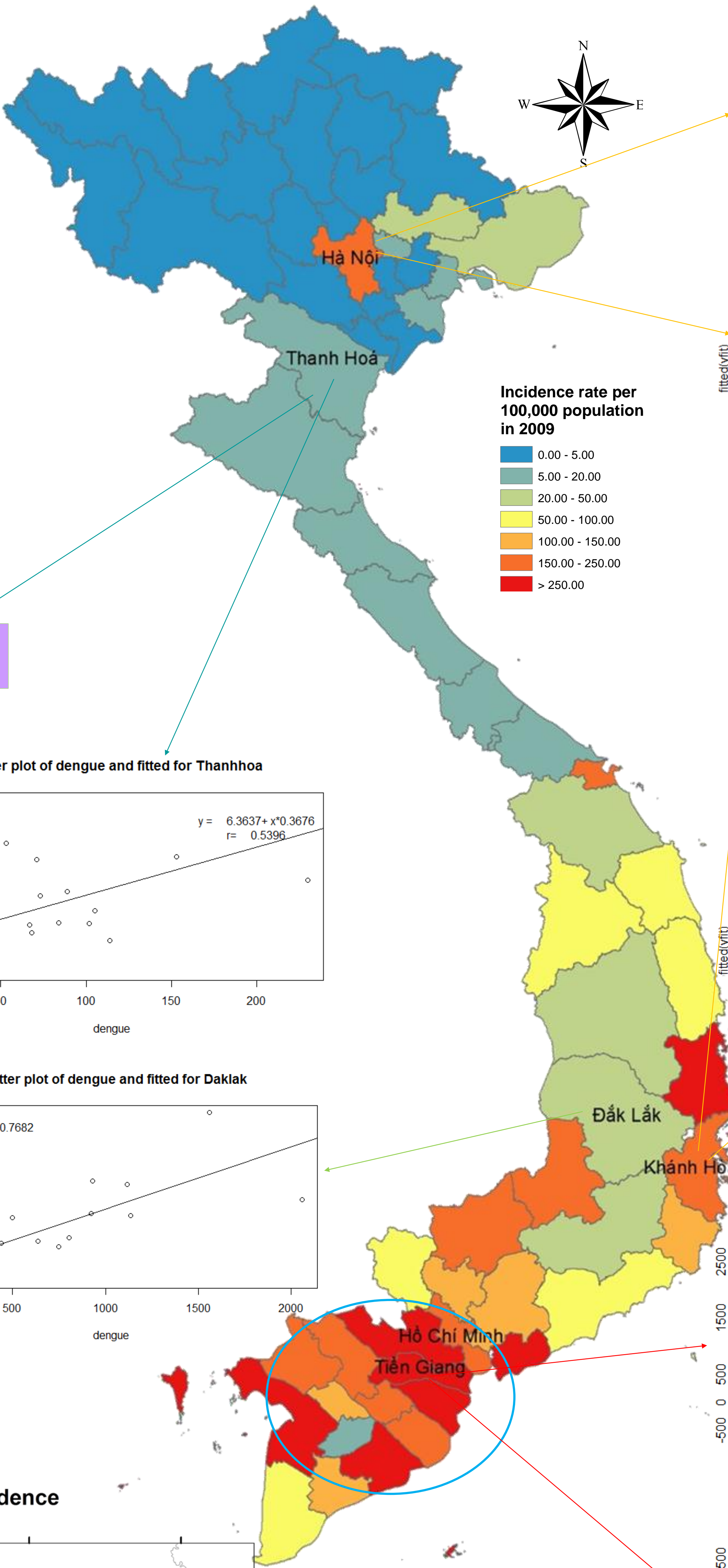
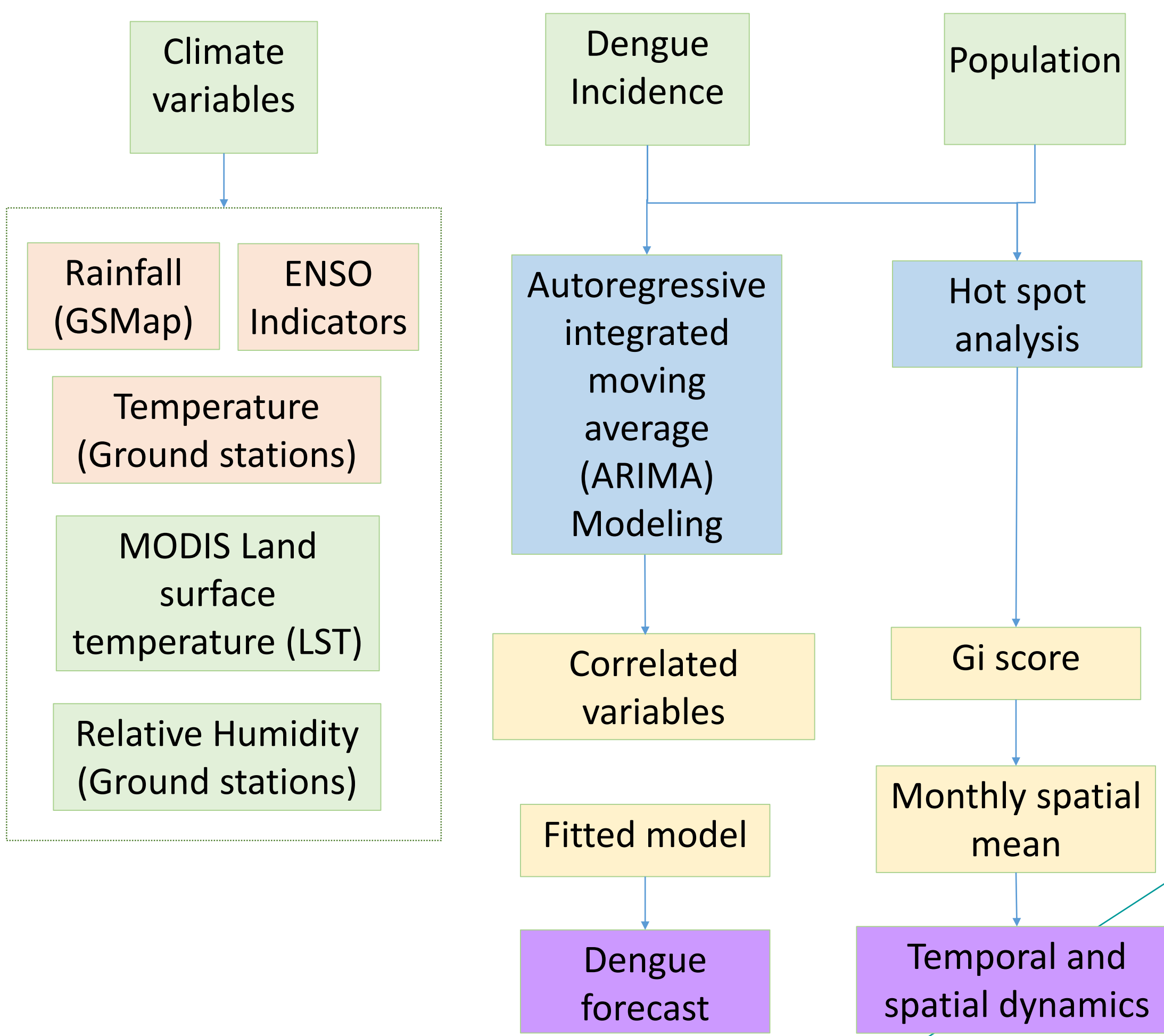
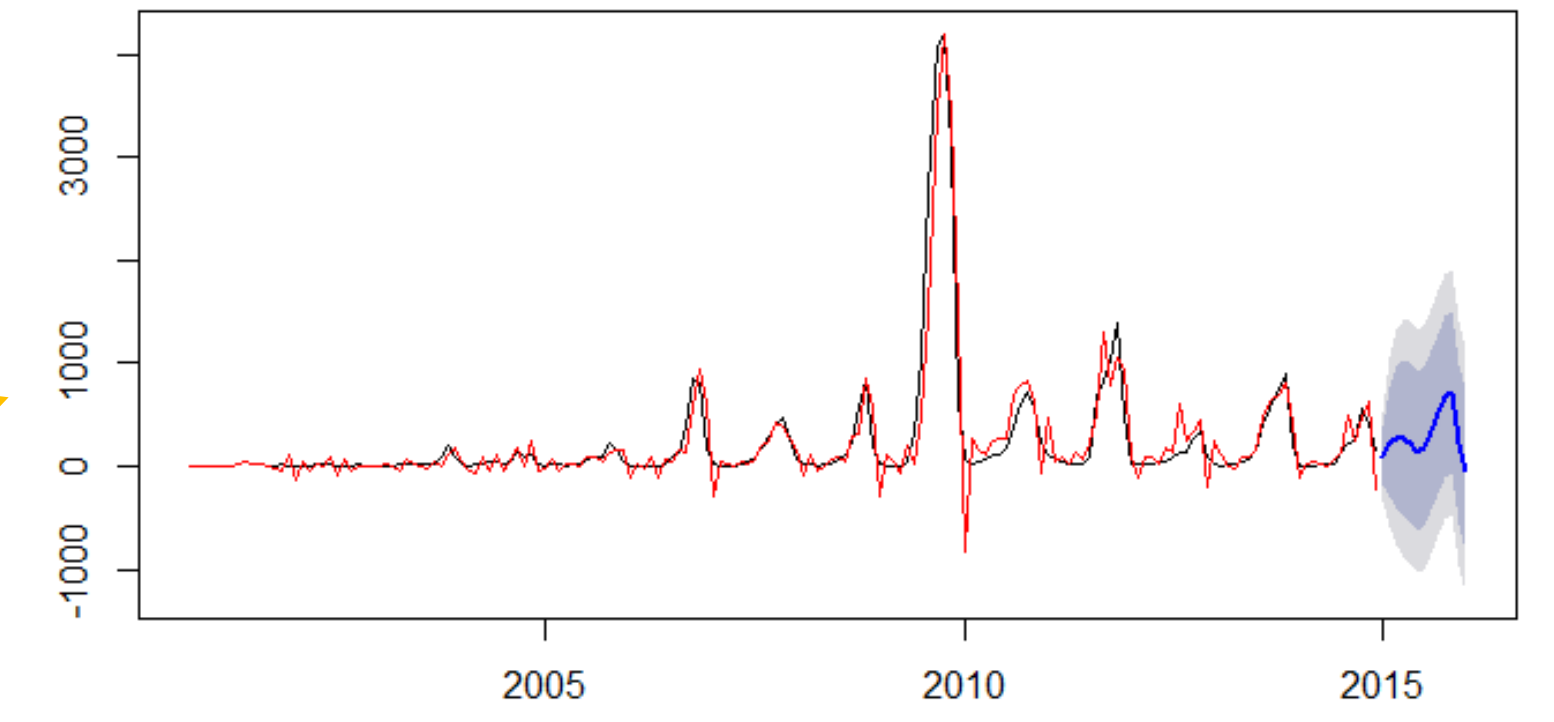


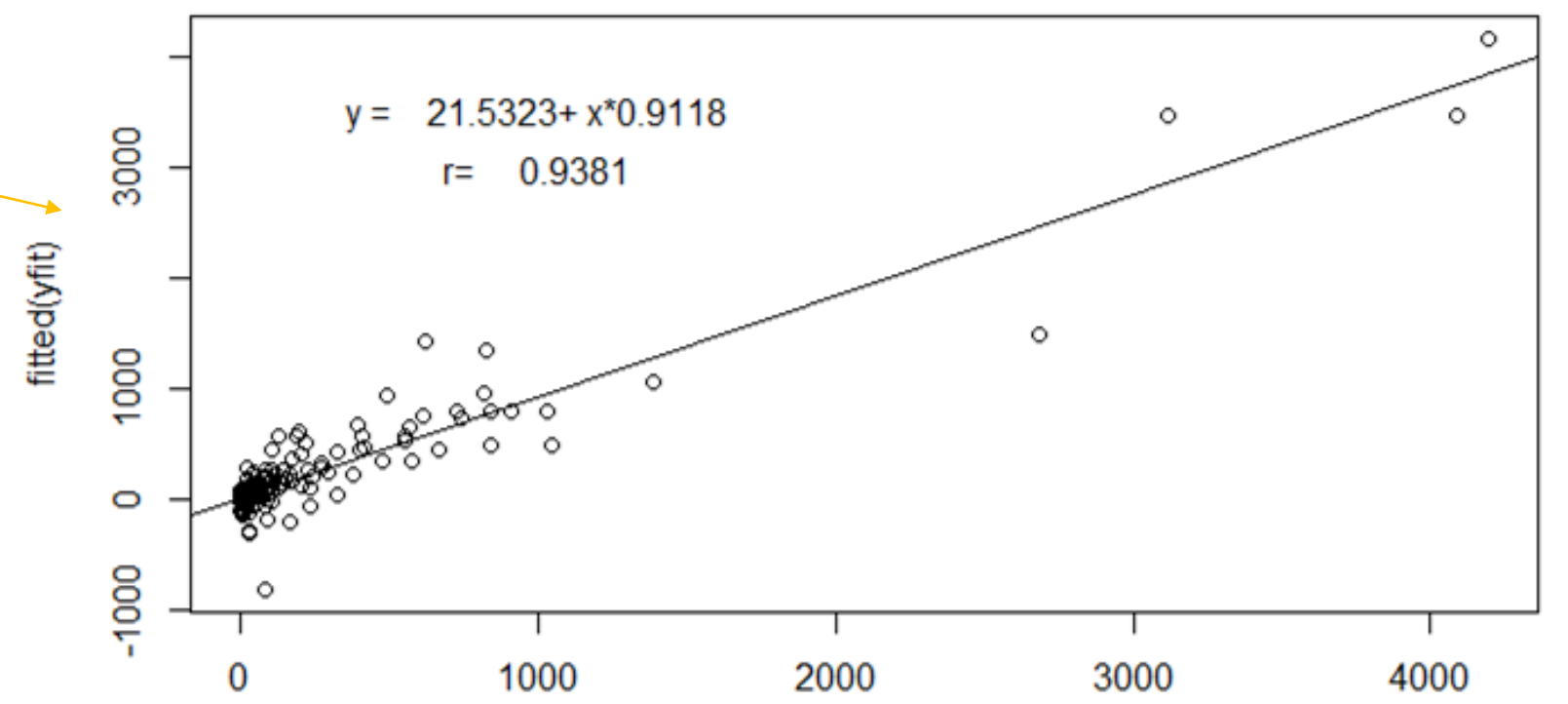
## DATA & METHODS



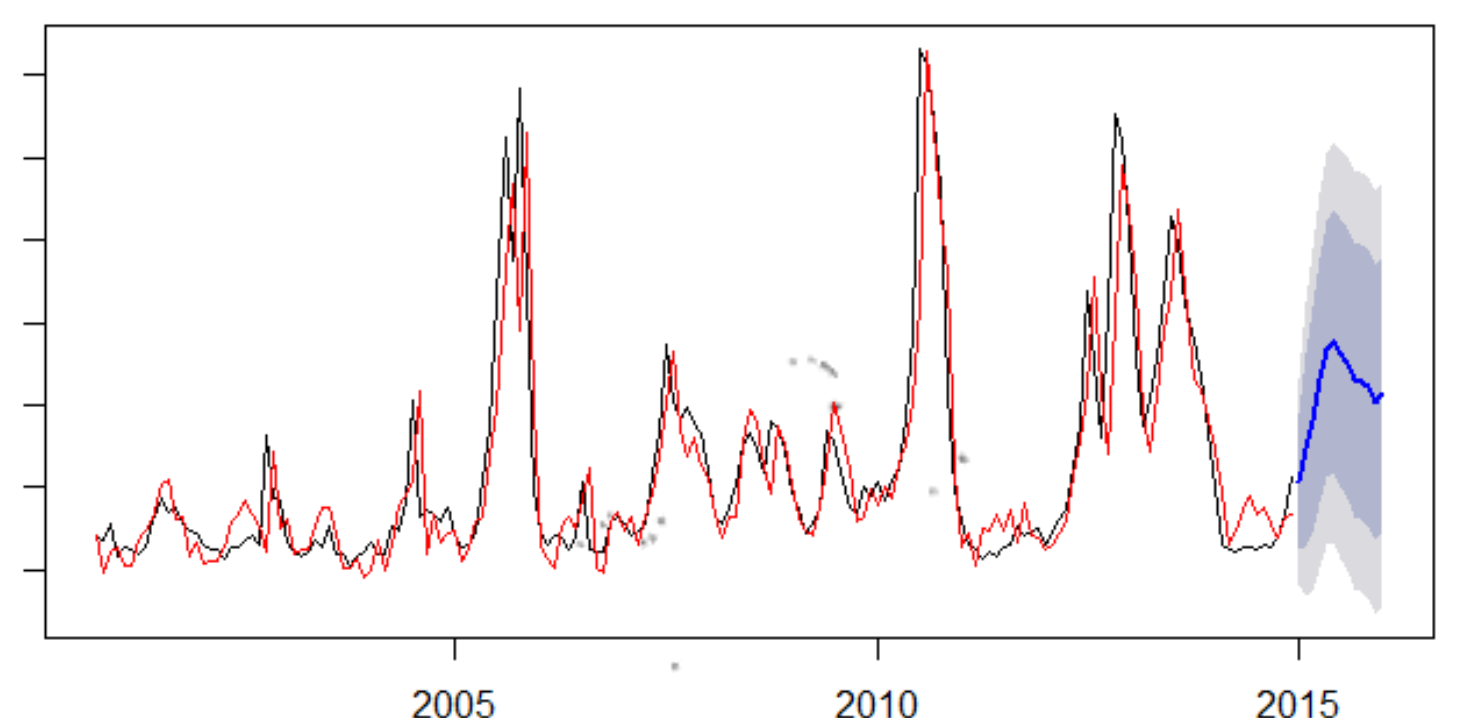
ARIMA forecasts of dengue in 2015 for Hanoi



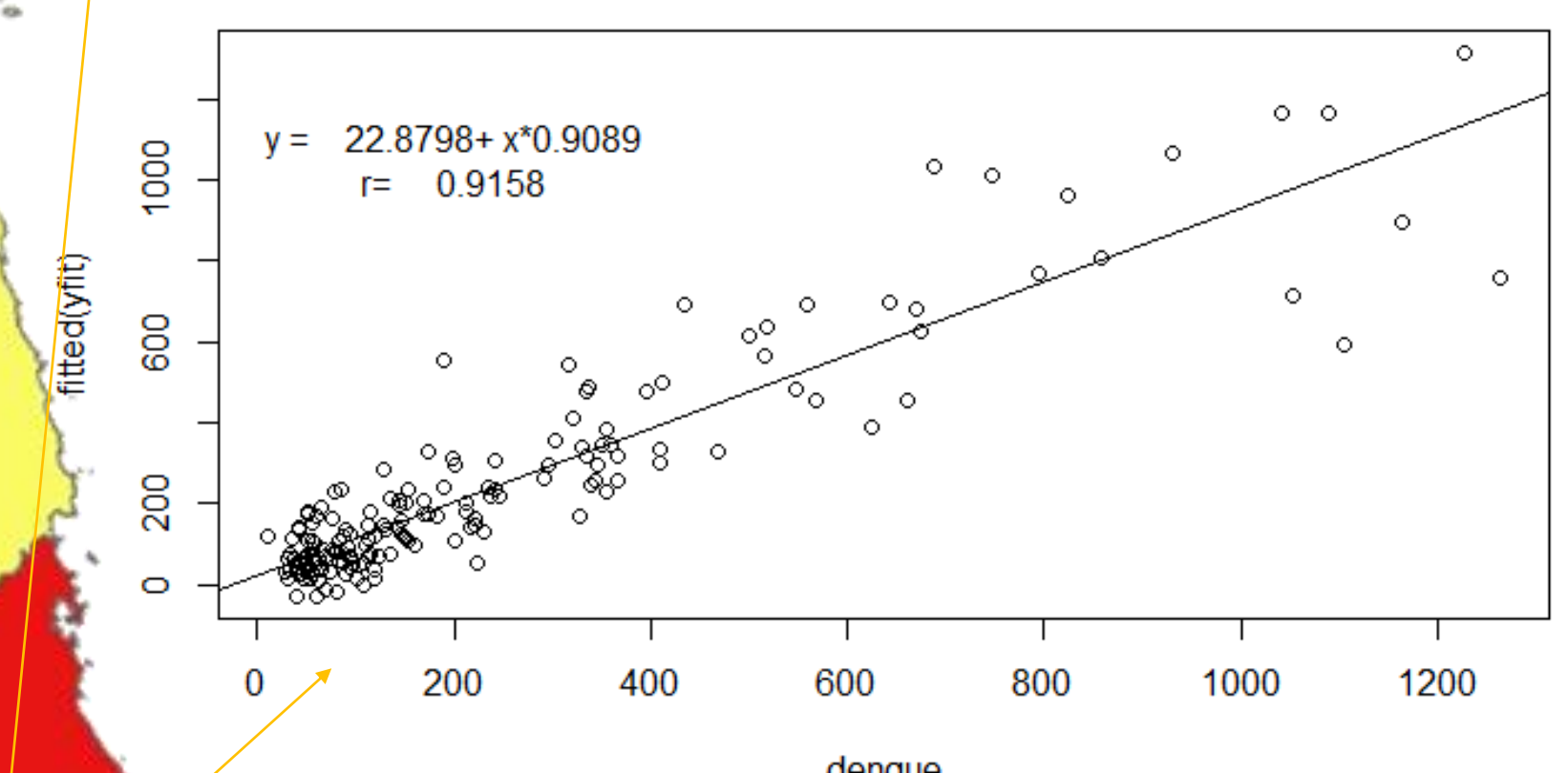
Scatter plot of dengue and fitted for Hanoi



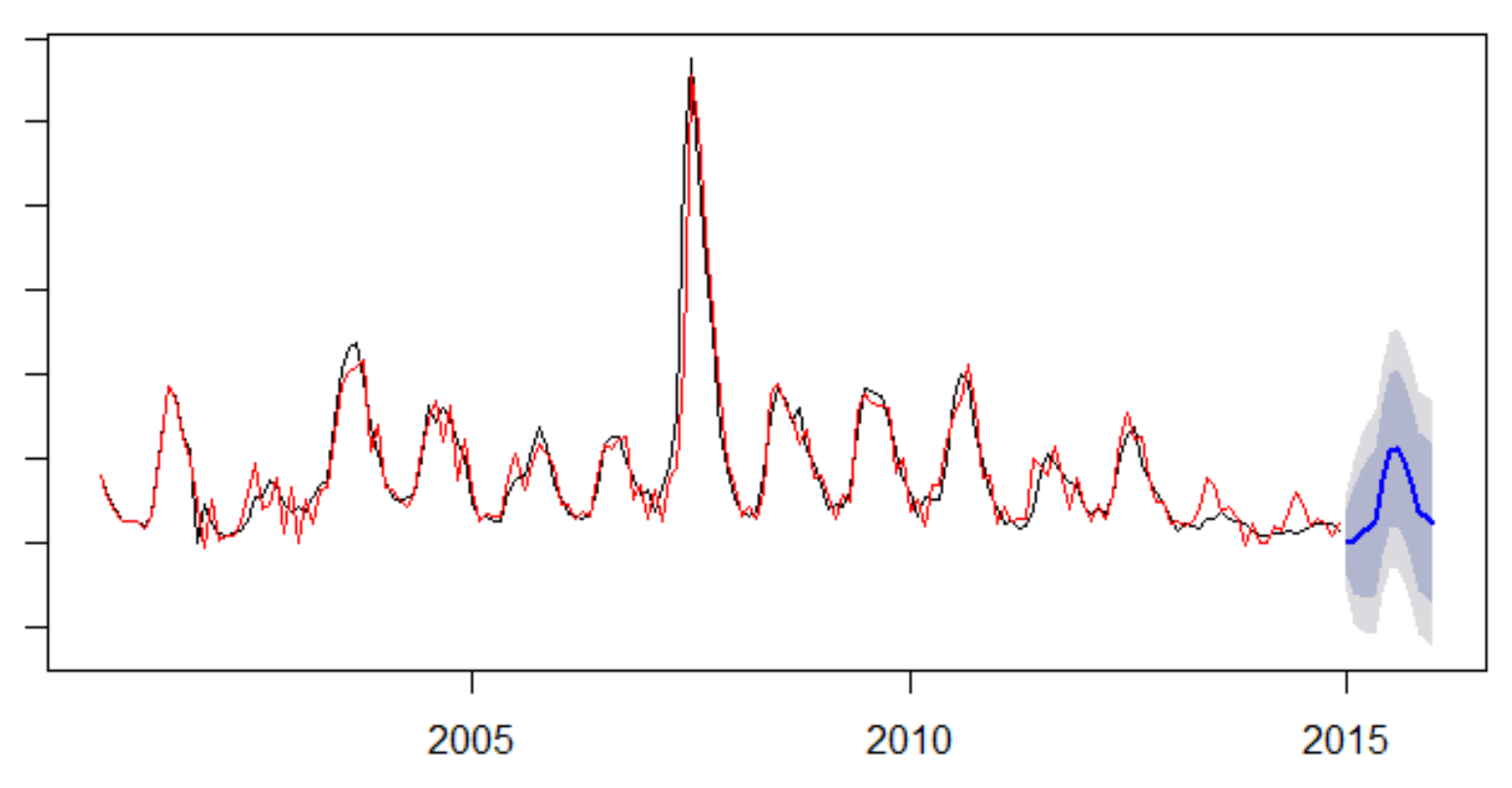
ARIMA forecasts of dengue in 2015 for Khanhhoa



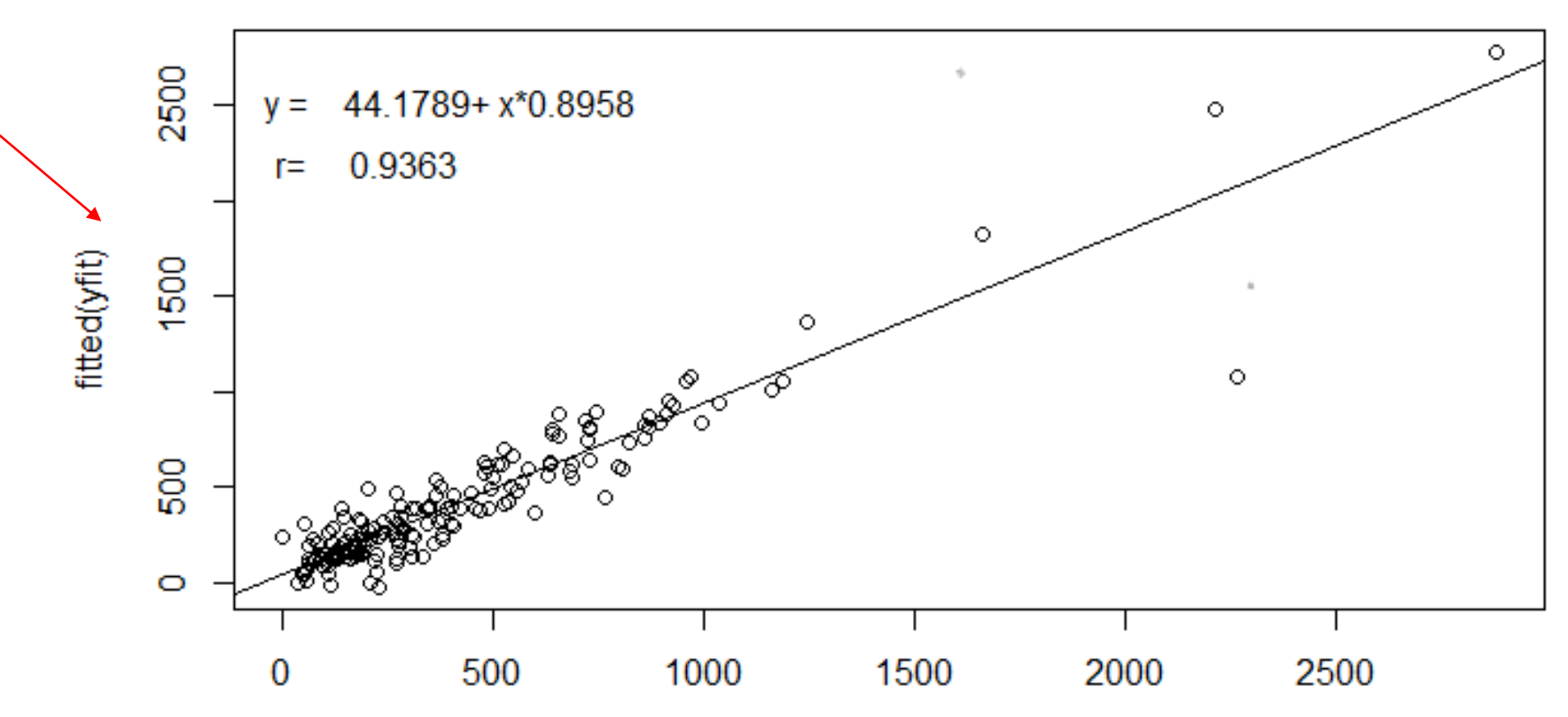
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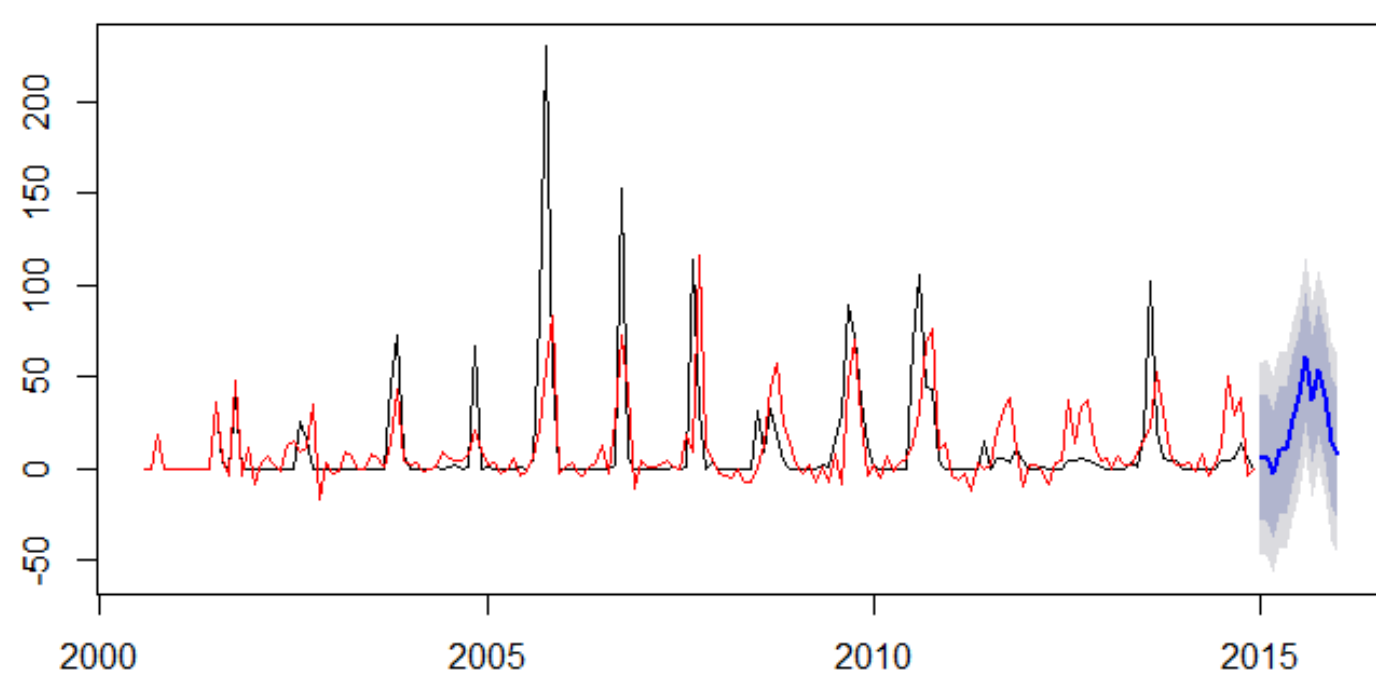
ARIMA forecasts of dengue in 2015 for Tiengiang



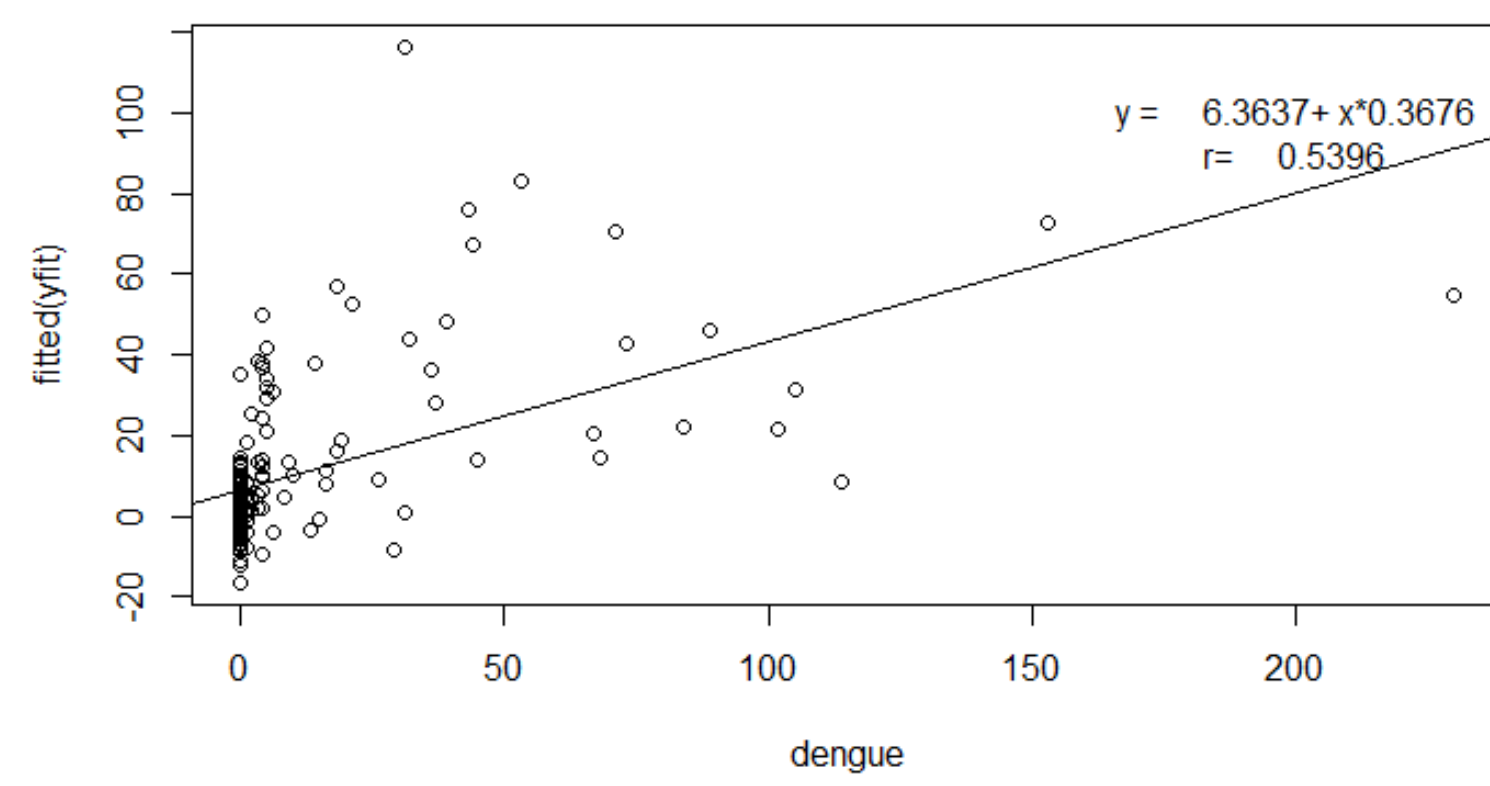
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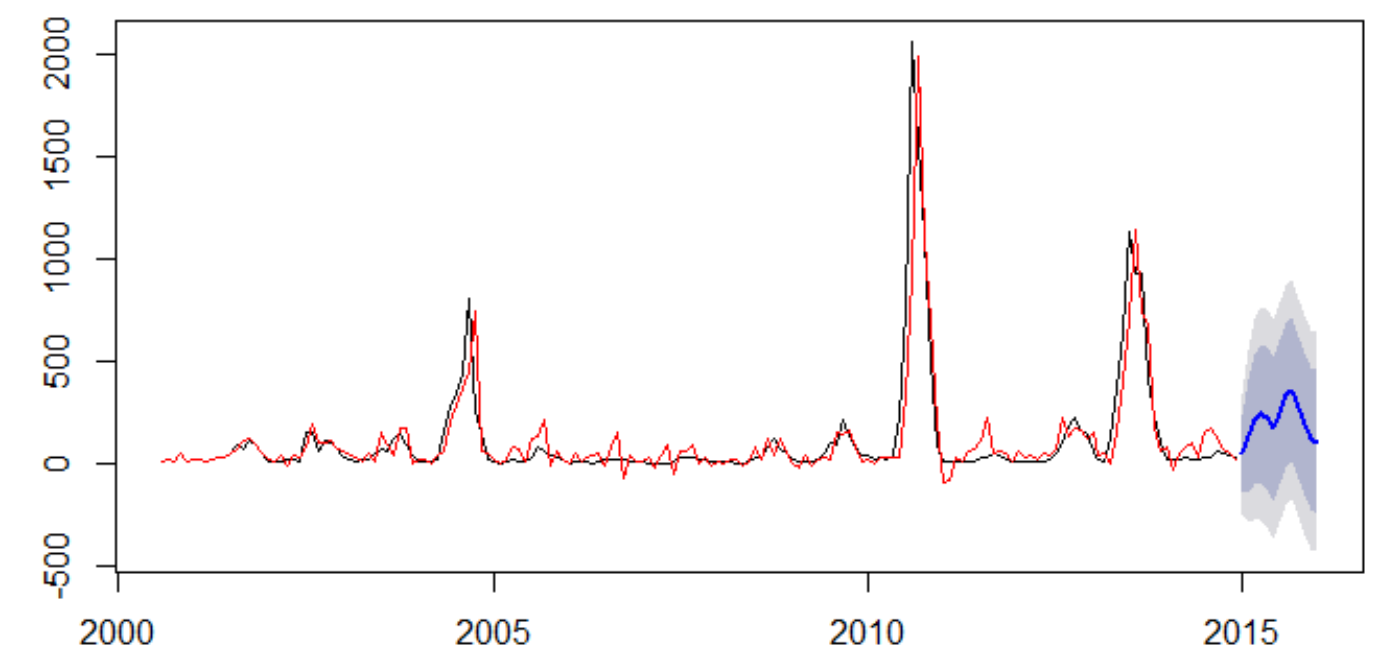
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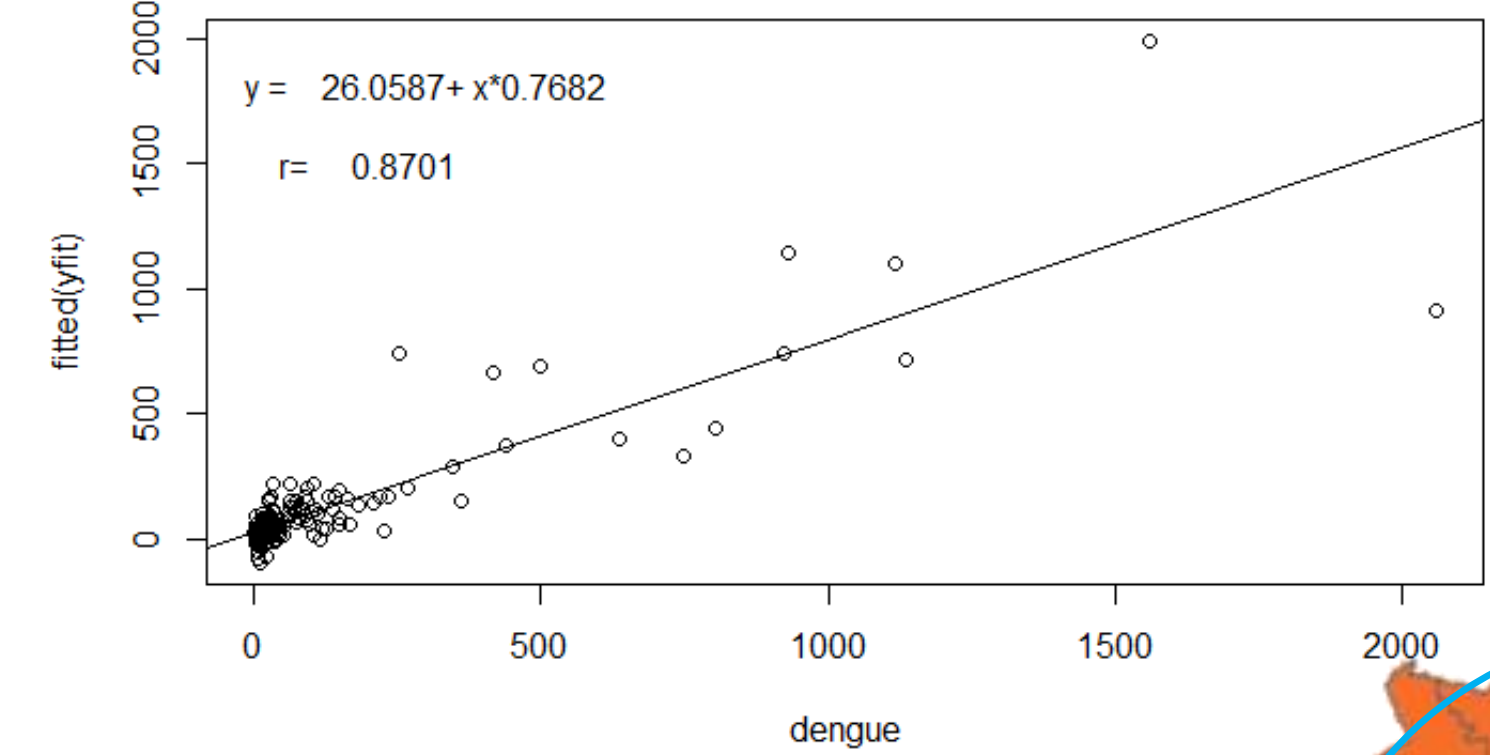
Scatter plot of dengue and fitted for Thanhhoa



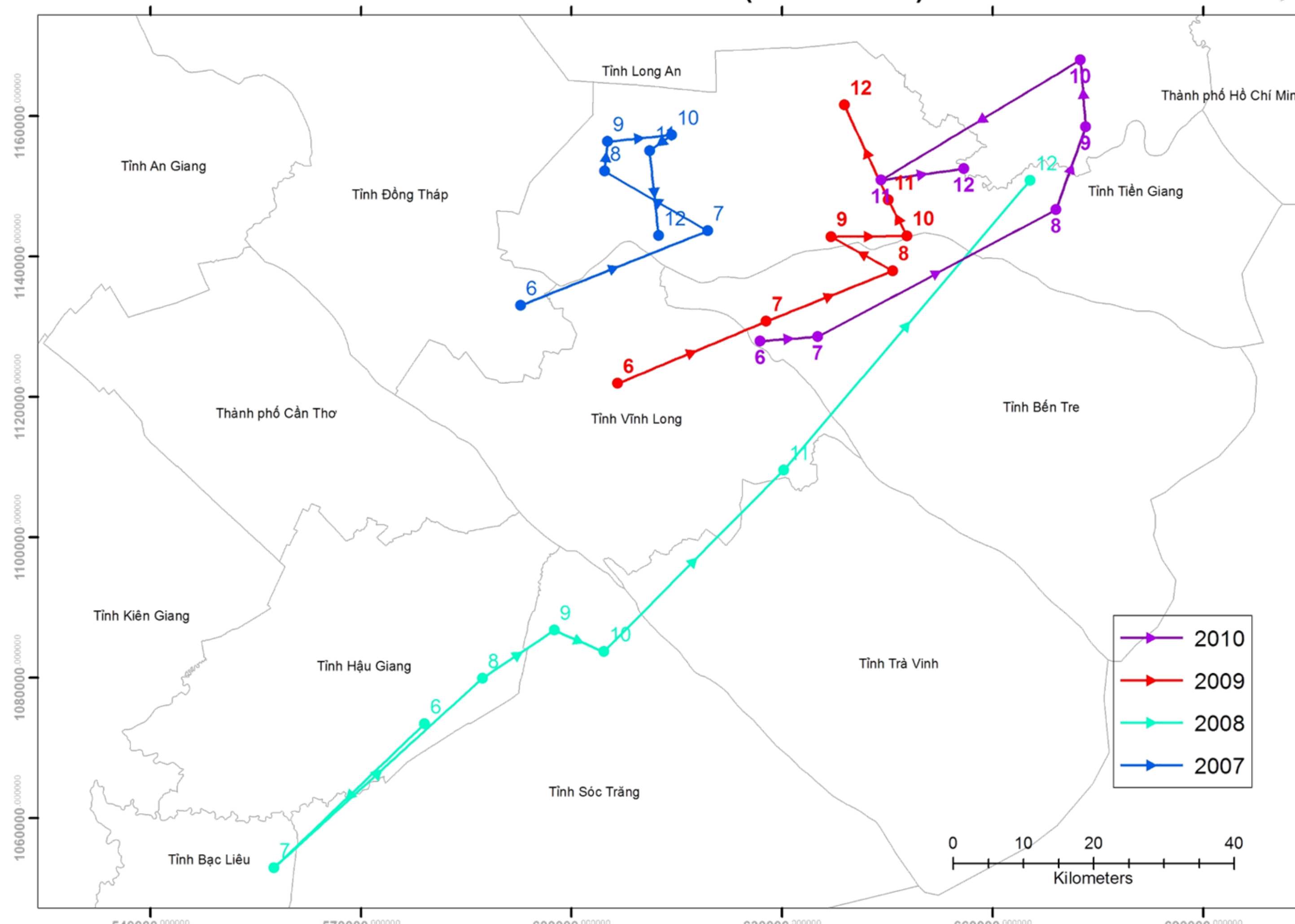
ARIMA forecasts of dengue in 2015 for Daklak



Scatter plot of dengue and fitted for Daklak



Temporal and spatial dynamics of Dengue incidence from June to December (2007 - 2010)



## DISCUSSION

- In the whole country's spatial pattern, the North-West region has the lowest number of dengue cases. The total number of dengue cases increases from the north to the south with the Mekong Delta experiencing the highest.
- Among climate variables, MODIS LST and relative humidity (ground stations) show no correlation with dengue cases; while precipitation, temperature from ground stations and ENSO indicators show strong correlations.
- The ARIMA forecasts for 2015 show an increasing trend in the number of expected dengue cases in all five selected provinces. This may be served as a recommendation for policy interventions to enhance dengue control program.
- The spatial dynamics has been carried out as a case study for the Mekong Delta, the area experiencing the highest dengue cases over time in the whole country, especially the period 2007-2010. The result shows that dengue season (June to December) usually starts in a province in the South-West region, moving in a north-east direction to the South-East region, and ends in Tien Giang province.
- In the next step, dengue data in 2015 will be used to validate results from ARIMA model to better forecast temporal disease outbreak. NDVI data will also be included to improve model performance. The spatial dynamics will also be studied further to find out its ability in forecasting spatial disease outbreak. Furthermore, the methods will be applied for Philippines as the second study area within the scope of the APN-funded project.

## ACKNOWLEDGMENT:

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