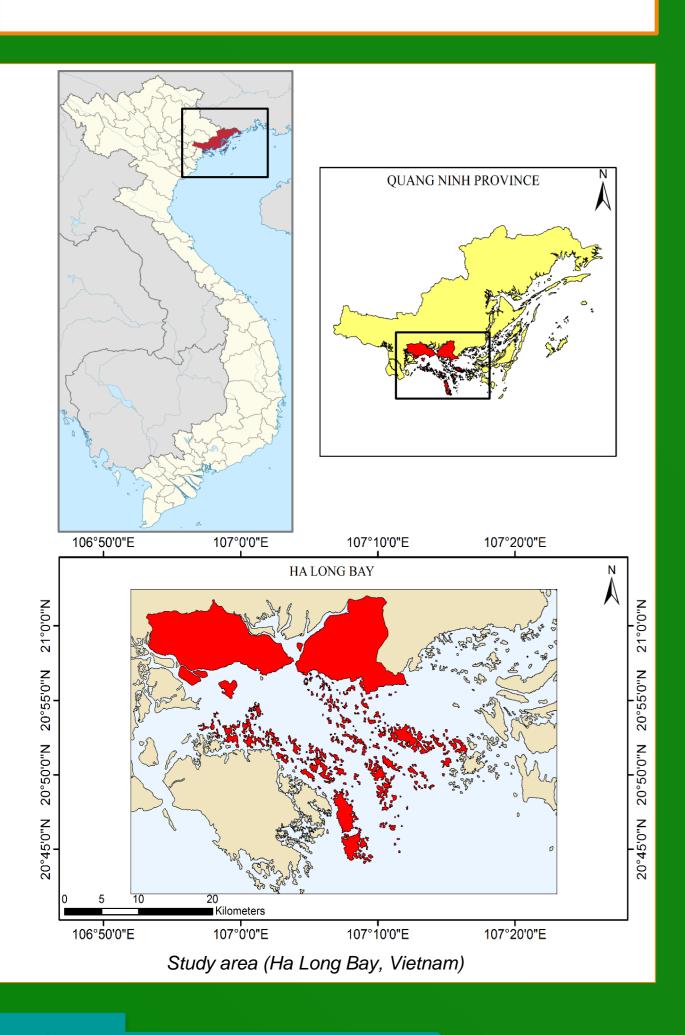


DEVELOPMENT OF AIR POLLUTION EMISSION INVENTORY FOR SHIPPING ACTIVITIES IN HA LONG BAY, VIETNAM



INTRODUCTION

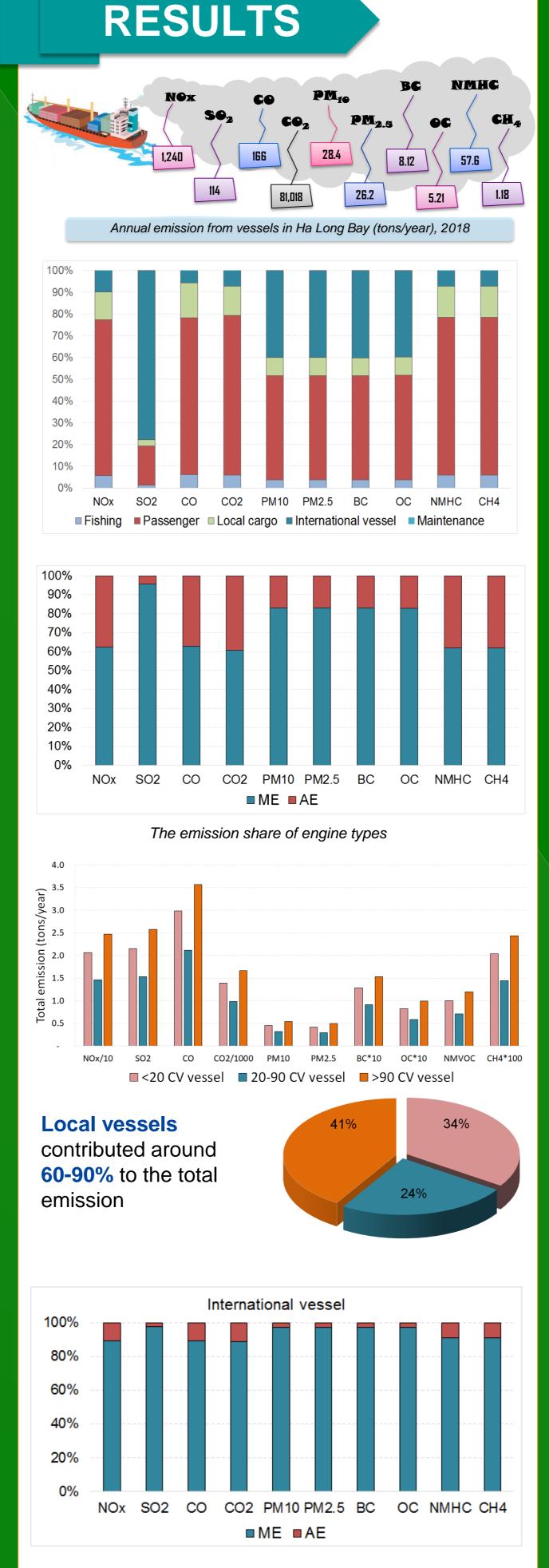
- Air pollution is a severe issue in Vietnam.
- Globally, several studies revealed that shipping activities contribute considerably to the pollution load
- None of the studies have produced any comprehensive shipping emission inventory in Vietnam.
- This study attempts to fill in the gap of emission inventory for shipping activities in Ha Long Bay which is the famous tourist attraction of Vietnam.

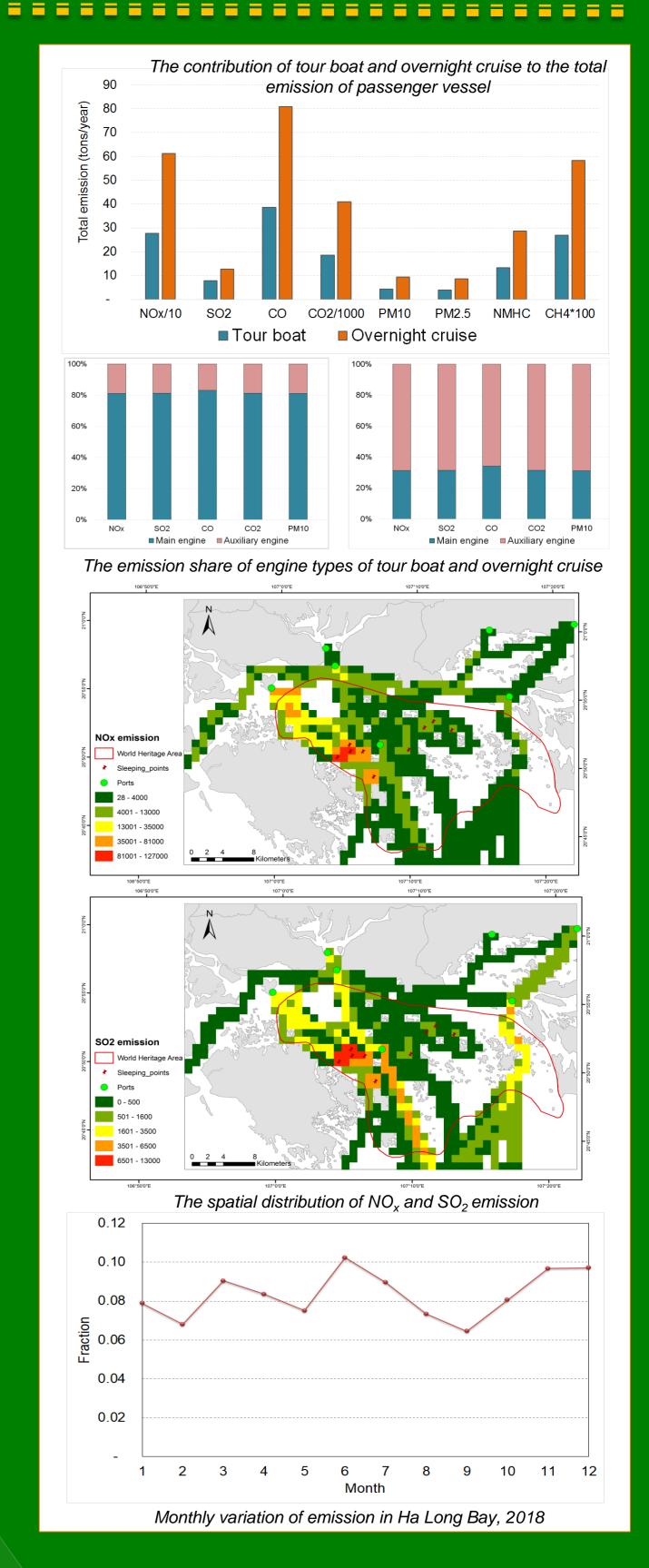


OBJECTIVES

- To develop emission inventory for shipping activities in Ha Long Bay in 2018.
- To develop the spatial and temporal distribution of shipping emission in the Ha Long Bay area.
- To recommend management measures to reduce emission from ships.

Survey data - AE Power - Average speed - Traveling route - Engine load factor Meteorology data Meteorology data Secondary data - Number of vessel - GT - Vessel speed - Traveling route - Fuel type and quality - ME Power - Record of registration - Traveling route - Fuel type and quality - Maction of the statio - Fuel type and quality - Traveling route - Traveling r





CONCLUSIONS

- Passenger and international vessel are two major contributors
- The higher emission intensities along the passenger and international vessel fairways.
- There is a need to strengthen the fuel quality management to reduce the emission of SO₂, PM and Hydrocarbon.
- Using renewable energy for Auxiliary Engine to reduce energy needed from diesel oil.
- The results can be input to 3D air quality modeling.