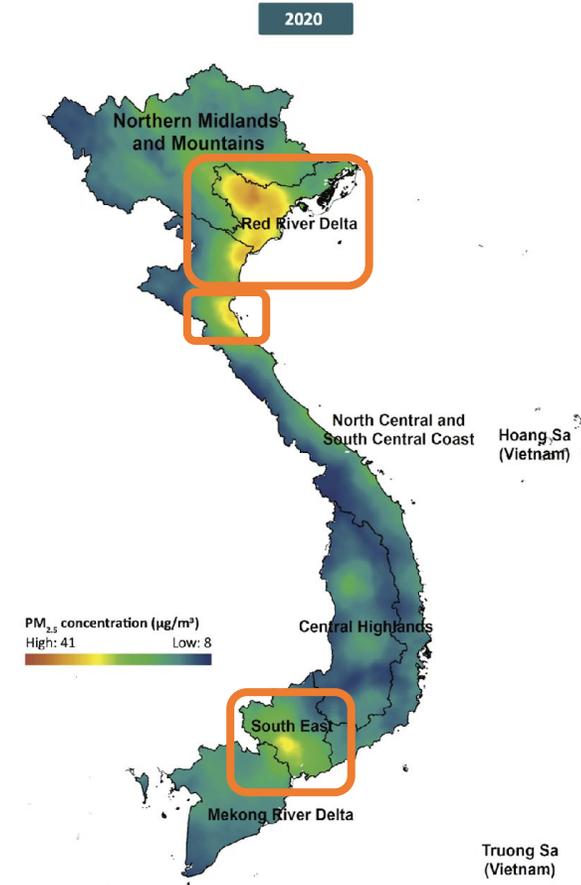


COLLABORATION IN RESEARCH

MOTIVATING ACTIONS FOR CLEAN AIR

Research Translation in Collective actions for Clean air



Challenge

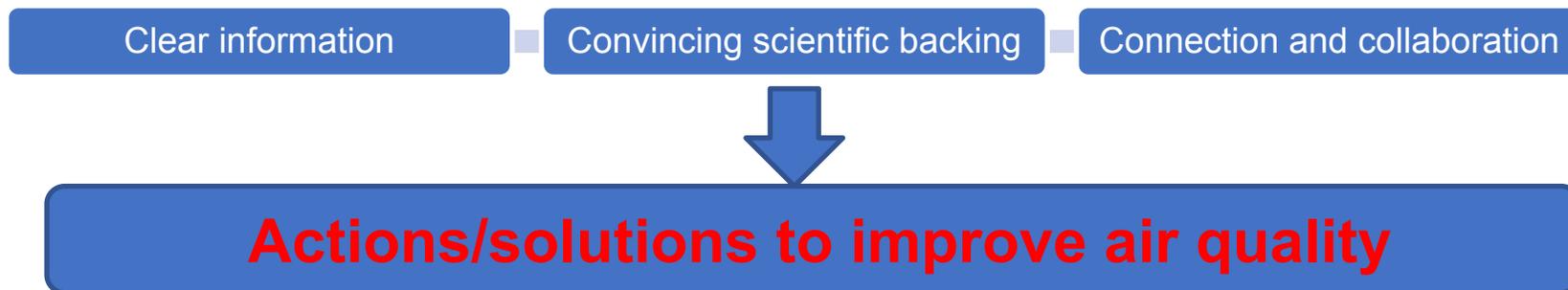
5 years ago...

- *Air pollution hadn't gained much attention of the public and media;*
- Research on air pollution *has been done long ago but the results and knowledge gained has not been widely shared among the public, media and administratives.*
- Qualitative policies **weren't reliant on science**



Awareness – action

- **The media** (air pollution in Beijing) and **the air quality data** from the US Embassy has caused Hanoi to start thinking and take action to improve the air quality.
- International collaboration projects have opened a lot of opportunities and change the perception on air pollution as well as the solutions for this problem
- The determination and willingness of the city's administratives



Research translation

- Information for management agencies/public to use: maps, infographics, videos...

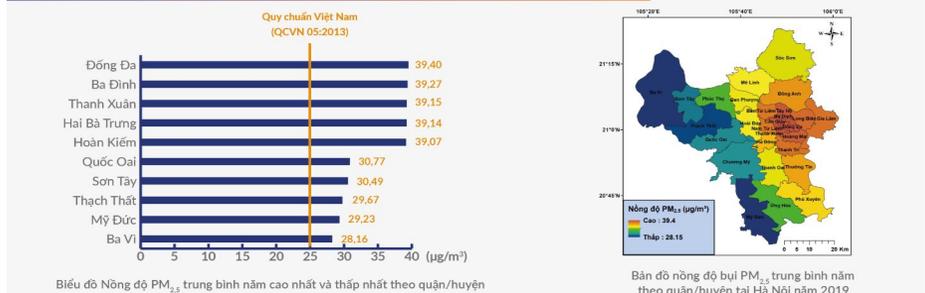


The report “Tác động sức khỏe do ô nhiễm không khí do bụi PM_{2.5} đến sức khỏe cộng đồng tại Hà Nội” in 2019:

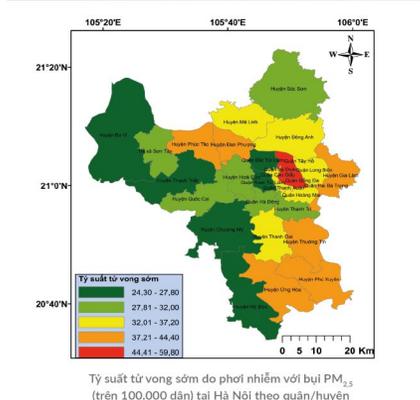
TÁC ĐỘNG Ô NHIỄM KHÔNG KHÍ DO BỤI PM_{2.5} ĐẾN SỨC KHOẺ CỘNG ĐỒNG TẠI HÀ NỘI

Logos: USAID, LIVE & LEARN, Không khí sạch thành phố xanh, Hanoi University of Science and Technology, Hanoi University of Education.

Thực trạng chất lượng không khí Hà Nội năm 2019



Gánh nặng bệnh tật do phơi nhiễm với bụi PM_{2.5} tại Hà Nội năm 2019



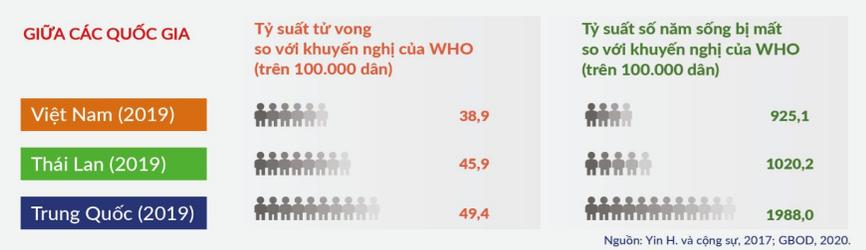
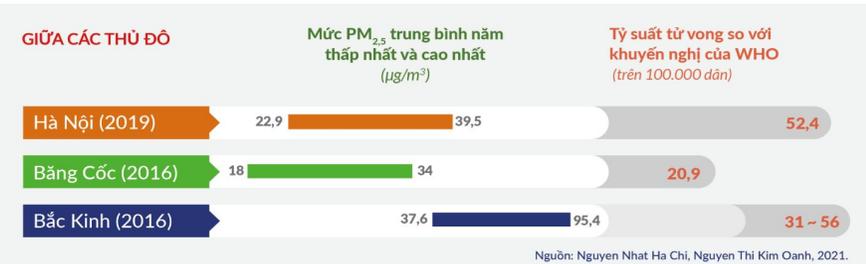
2.855 ca tử vong sớm, **~ 12%** số ca tử vong ở nhóm trên 25 tuổi. Quận Thanh Xuân có tỷ lệ tử vong do ONKK cao nhất, chiếm **37%**

1.062 ca nhập viện tăng thêm do bệnh tim mạch, **~ 1,2%** tổng số ca nhập viện ở nhóm bệnh này

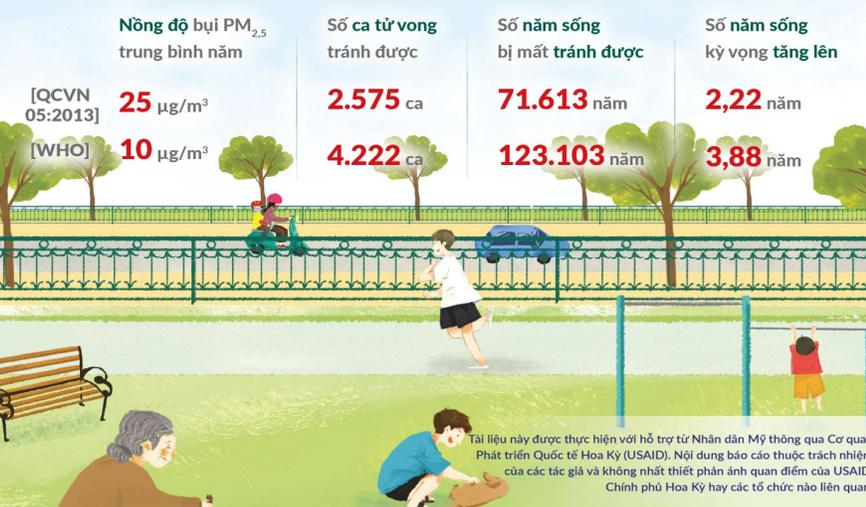
2.969 ca nhập viện tăng thêm do bệnh hô hấp, **~ 2,4%** tổng số ca nhập viện nhóm bệnh hô hấp

SO SÁNH Ô NHIỄM BỤI PM_{2.5} VÀ TÁC ĐỘNG SỨC KHOẺ

Việt Nam, Thái Lan, Trung Quốc

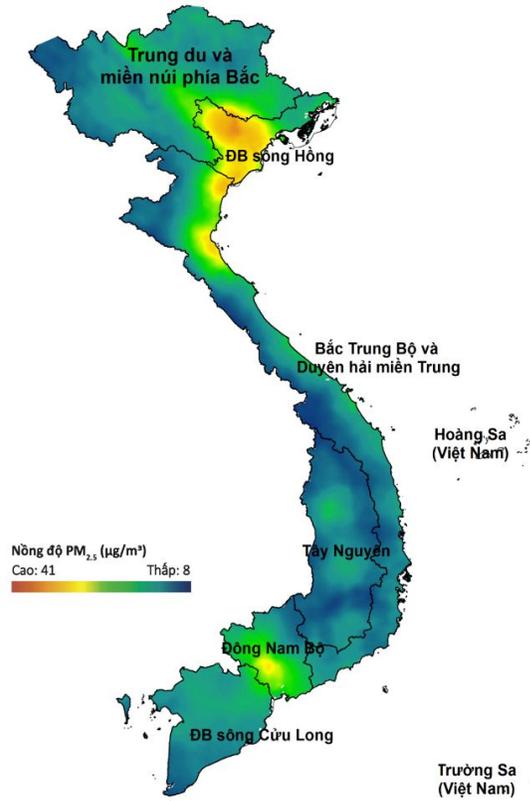


LỢI ÍCH SỨC KHOẺ CỘNG ĐỒNG CỦA HÀ NỘI NẾU NỒNG ĐỘ BỤI PM_{2.5} ĐƯỢC KIỂM SOÁT

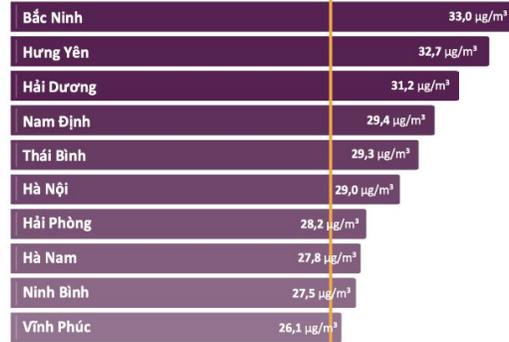




Hiện trạng BỤI PM_{2.5} TOÀN QUỐC NĂM 2020



10 TỈNH/THÀNH PHỐ Ô NHIỄM BỤI PM_{2.5} NĂM 2020

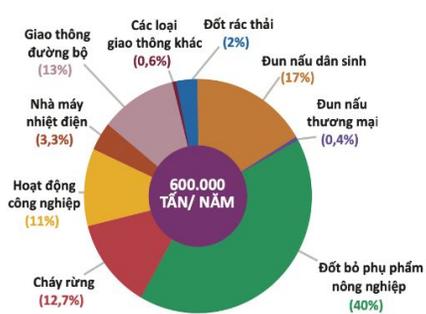


10 TỈNH/THÀNH PHỐ CÓ NỒNG ĐỘ PM_{2.5} TRUNG BÌNH THẤP NHẤT NĂM 2020



ĐÓNG GÓP NGUỒN THẢI BỤI PM_{2.5} TOÀN QUỐC NĂM 2018

CÁC NGUỒN GÂY Ô NHIỄM BỤI PM_{2.5} quy mô toàn quốc năm 2018



5 NGUỒN THẢI BỤI PM_{2.5} LỚN NHẤT toàn quốc năm 2018

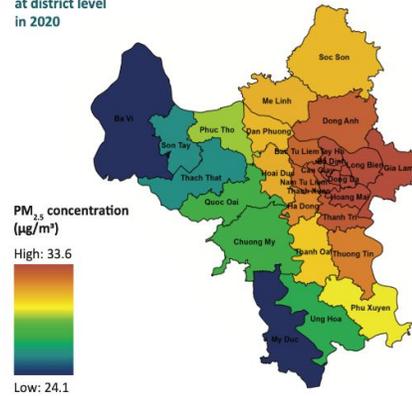
- ĐỐT BỎ PHỤ PHẨM NÔNG NGHIỆP
- ĐUN NẤU DÂN SINH
- GIAO THÔNG ĐƯỜNG BỘ
- CHÁY RỪNG
- HOẠT ĐỘNG CÔNG NGHIỆP VÀ LÀNG NGHỀ

Nguồn: Nghiên cứu của GS. TS. Nguyễn Thị Kim Oanh và TS. Lại Nguyễn Huy, AIT Thái Lan (2021)

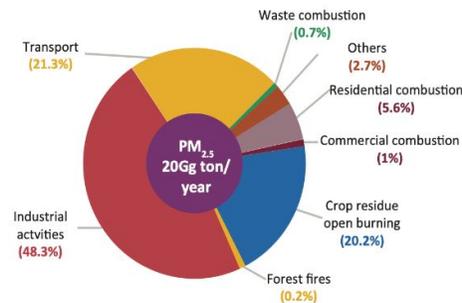


STATE & EMISSION SOURCES OF PM_{2.5} IN HANOI

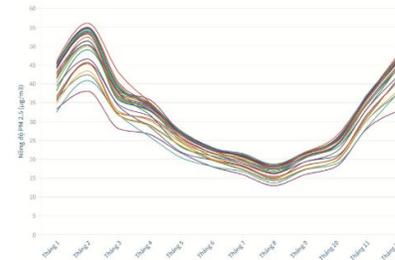
Spatial distribution of ANNUAL MEAN PM_{2.5} CONCENTRATIONS at district level in 2020



SHARES OF EMISSION SOURCES of PM_{2.5} in Hanoi, 2018



SEASONAL CHANGES OF PM_{2.5} Monthly average PM_{2.5} concentrations of 30 districts in 2020



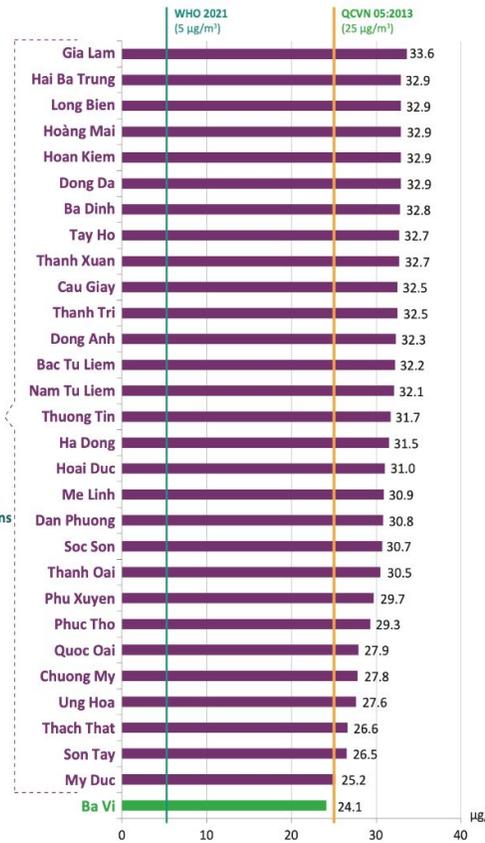
3 KEY SOURCES OF PM_{2.5} EMISSIONS



Source: Study by Professor Nguyen Thi Kim Oanh and Dr. Lai Nguyen Huy, AIT Thailand (2021)

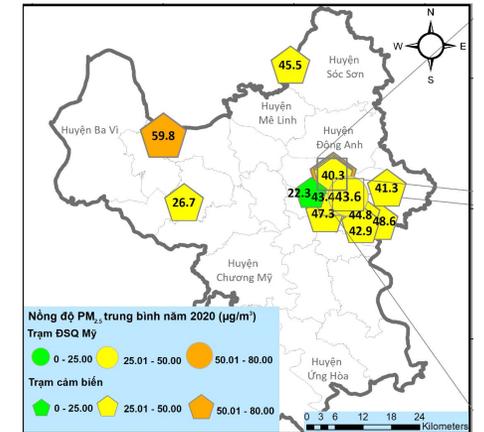
Note: This result does not include road dust and several sources including international sea transport, fires, fireworks and associated gas burning (gas flaring); emission during cooking, eg. smoke from barbecue; incense, candles and votive burning, cremation, tobacco smoke; waste incinerators (residential, industrial and hospital) and secondary PM_{2.5}. The share of PM_{2.5} emissions from road dust related to traffic might be considerably large in urban areas (World Bank, 2021).

ANNUAL MEAN PM_{2.5} CONCENTRATIONS at district level in Hanoi in 2020



29/30

districts had the 2020 annual mean PM_{2.5} concentrations exceeding the QCVN 05:2013



Annual PM_{2.5} data from sensors located in Hanoi

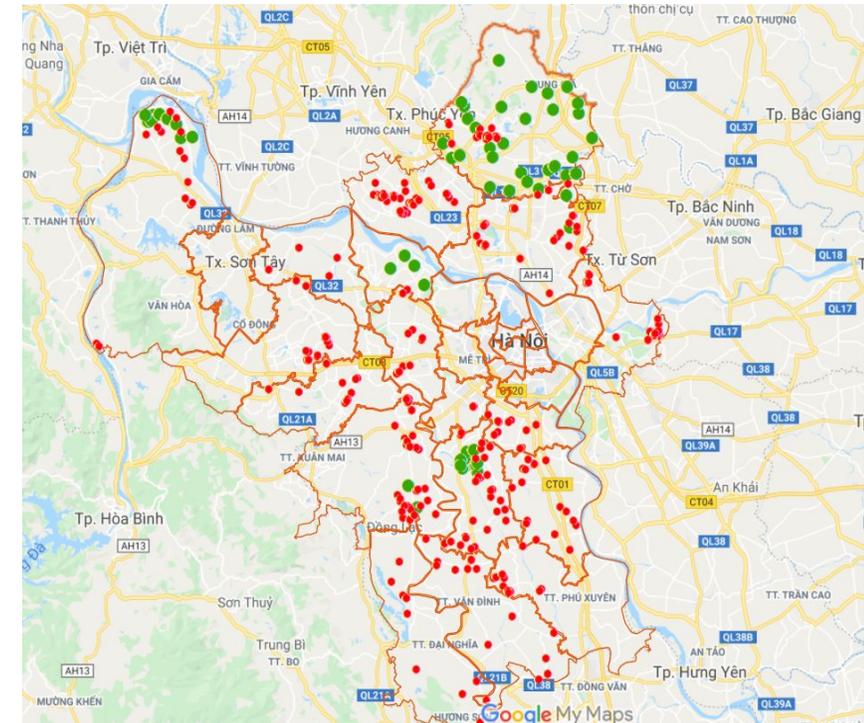
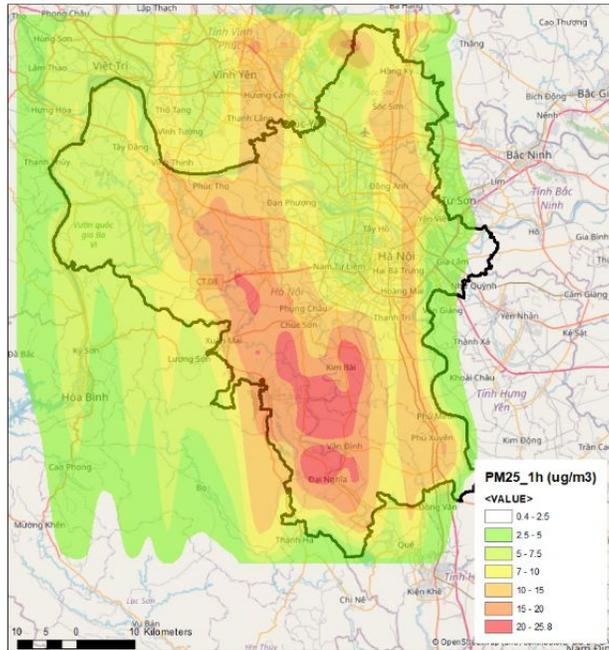


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Decision making based on scientific proof: Policy recommendations/consultation

Decreasing open biomass burning (Straws)

Kết quả lan truyền PM2.5 từ hoạt động đốt rơm rạ vụ đông xuân



[Maps of application of straw burning reduction measures](#)

- **Issued Directive 15/CT-UBND on 18/09/2020** on the increase of administrative management measures for biomass burning activities
- **Connected and incorporated** organizations, scientists, corporations
 - o Research on the Emission Inventories Biomass Burning in the field
 - o Organizing the propaganda and management for minimizing biomass burning and increasing in alternative measures

Decision making based on scientific proof: Policy recommendations/consultation

Emission control from motorized vehicles

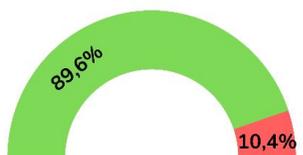


19.503

xe máy được đo kiểm



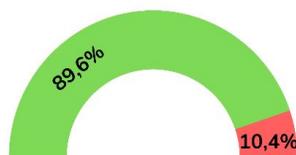
Trước khi bảo dưỡng



Sau khi bảo dưỡng



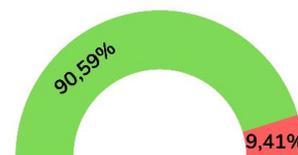
Trước khi bảo dưỡng



Sau khi bảo dưỡng



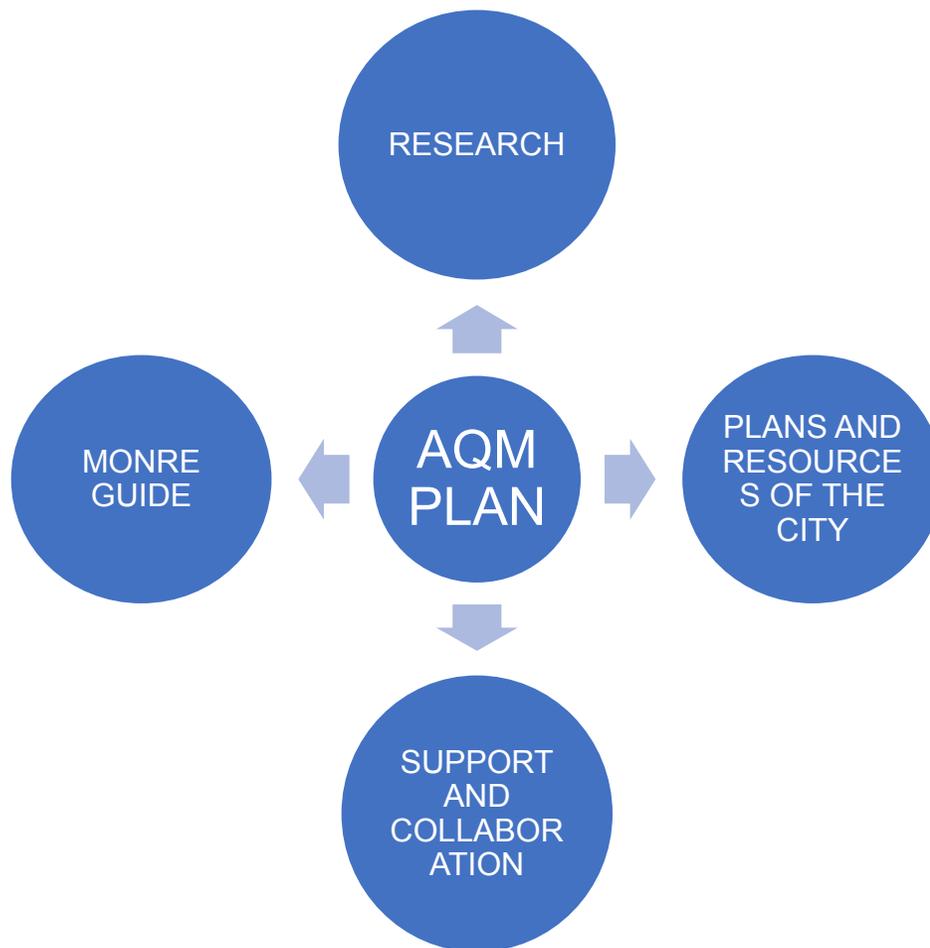
Trước khi bảo dưỡng



Sau khi bảo dưỡng



APPROACH FOR THE CONSTRUCTION OF AIR QUALITY MANAGEMENT PLANS FOR HANOI



APPROACH FOR THE CONSTRUCTION OF AIR QUALITY MANAGEMENT PLANS FOR HANOI

