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startup<sup>xs</sup>

*Application for the  
ChangeMakers Seed Funding 2023*



Air Quality & Environmental Solutions

*Air Quality and Environmental Solutions*

LET'S CONNECT THROUGH THE AIR WE BREATHE

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# About Us



*We are a social enterprise committed to thinking, developing, and implementing affordable, reliable, and adaptable solutions to address issues related to indoor and outdoor air pollution in developing countries.*

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# About us

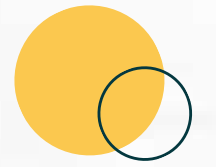
Our focus is on data acquisition and supply, guidance, training, communication, and consultancy on air quality issues for companies, governmental and non-governmental organizations in developing countries.





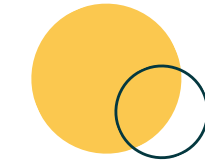
*Connecting Africa Through the Air we breathe*

# Our Vision



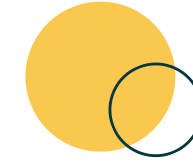
*Building by 2030, the largest low-cost air quality monitoring network in Africa*

# Problem Statement



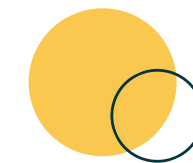
- With increasing *demography and anarchic urbanization* in urban cities in developing countries, many environmental problems arise, including *air pollution*.
- Air pollution is the *greatest environmental threat to public health* worldwide in general and particularly in developing countries. It is responsible for approximately *7 million premature deaths* each year (UNEP, WHO, 2022).
- Currently, there is *a lack of data and information on air pollution* in developing countries and particularly in Africa.
- Expected *dramatic consequences on public health, the environment and economy* in the years to come if nothing is done.

# Our solution

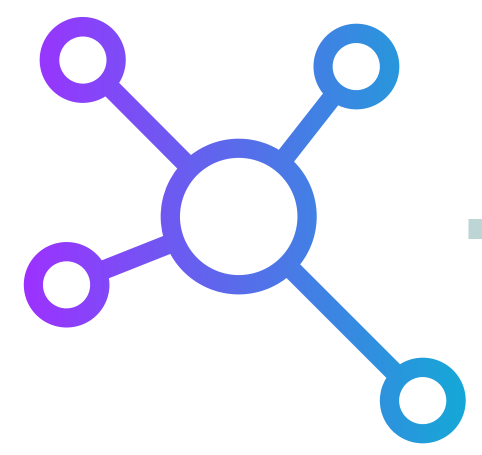


*AQES is, therefore, a response to the growing need for information on air quality in these countries in order to provide tools and means to assess and address this global problem in a sustainable manner.*

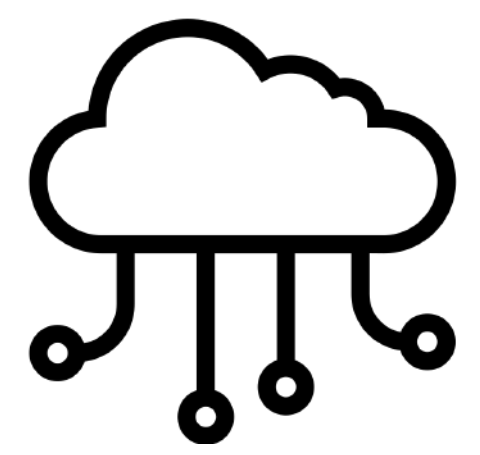
# Our solution



OUTPUT- PRODUCT(S)



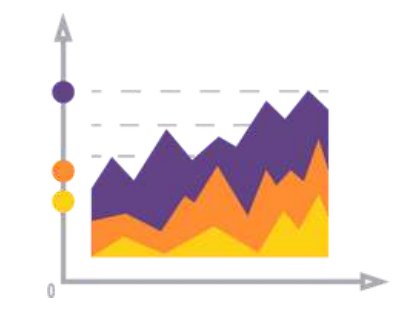
Network of low-cost sensors



Data acquisition and validation



Data treatment and expertise



Time series



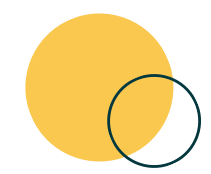
Air quality Index



Air quality Map

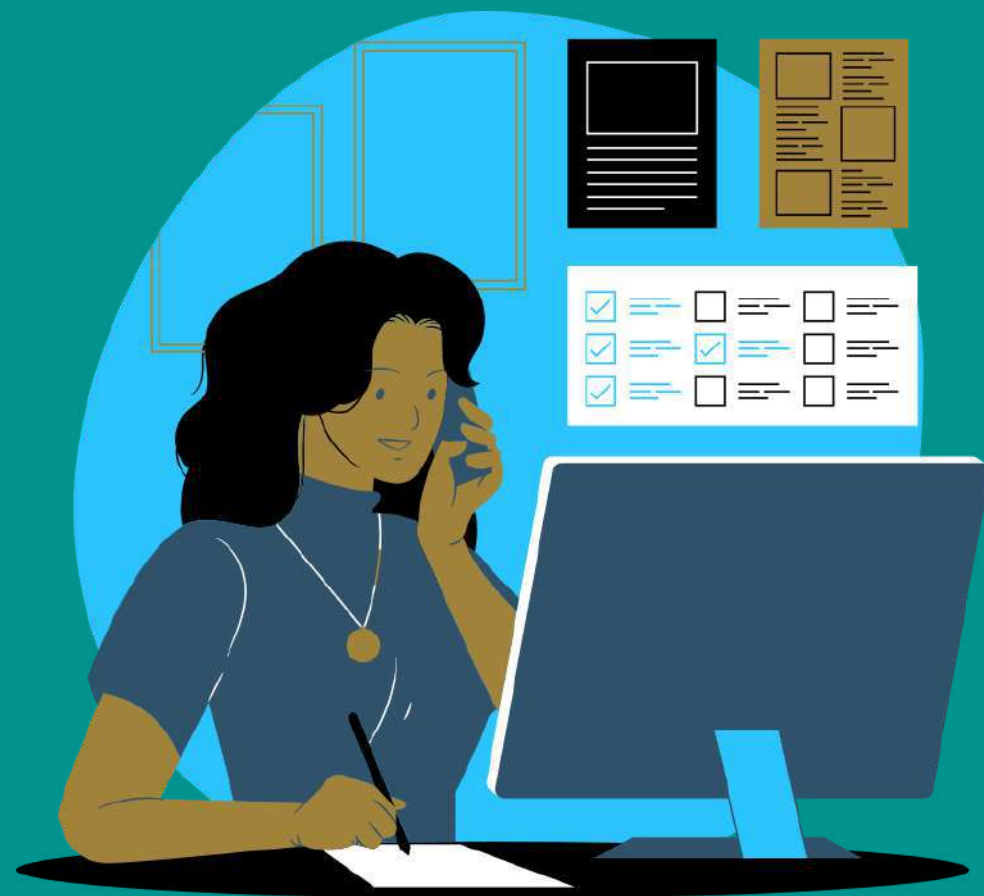


Air quality Report



INVESTMENT-INPUT

# Characteristics of the solution



- *A plug and play solution*
- *Robust and reliable*
- *Set for tropical environments*
- *Data available online*
- *Affordable and flexible*

# Our budget

327 261 \$

15%  
personal input

Capex	Useful life	Year 1	Year 2	Year 3
Microsensors -Digital and Tech equipments	5	260 050,00 \$	312 060,00 \$	364 070,00 \$
Installation and office equipment	5	31 679,16 \$	38 014,99 \$	44 350,82 \$
Human resources and Training	5	35 532,82 \$	42 639,39 \$	49 745,95 \$
		327 261,98 \$	392 714,38 \$	458 166,78 \$
Depreciation				
Microsensors -Digital and Tech equipments		52 010,00 \$	114 422,00 \$	187 236,00 \$
Installation and office equipment		6 335,83 \$	13 938,83 \$	22 809,00 \$
Human resources and Training		7 106,56 \$	15 634,44 \$	25 583,63 \$
		65 452,40 \$	143 995,27 \$	235 628,63 \$

# What AQES Does

...

Service

1

*Air quality technologies*

*Developing and providing affordable technologies for air quality monitoring (AQM)*

Service

2

*Consulting & advising*

*Strengthening countries capacities in air quality monitoring and Providing technical assistance for developing air quality management systems*

Service

3

*Communication and capacity building*

*Contributing to the capacity building of future air quality leaders by providing trainings that matches the needs of various stakeholders*

# Target Market

In Africa, the population density patterns largely translate into a map of cities across the continent

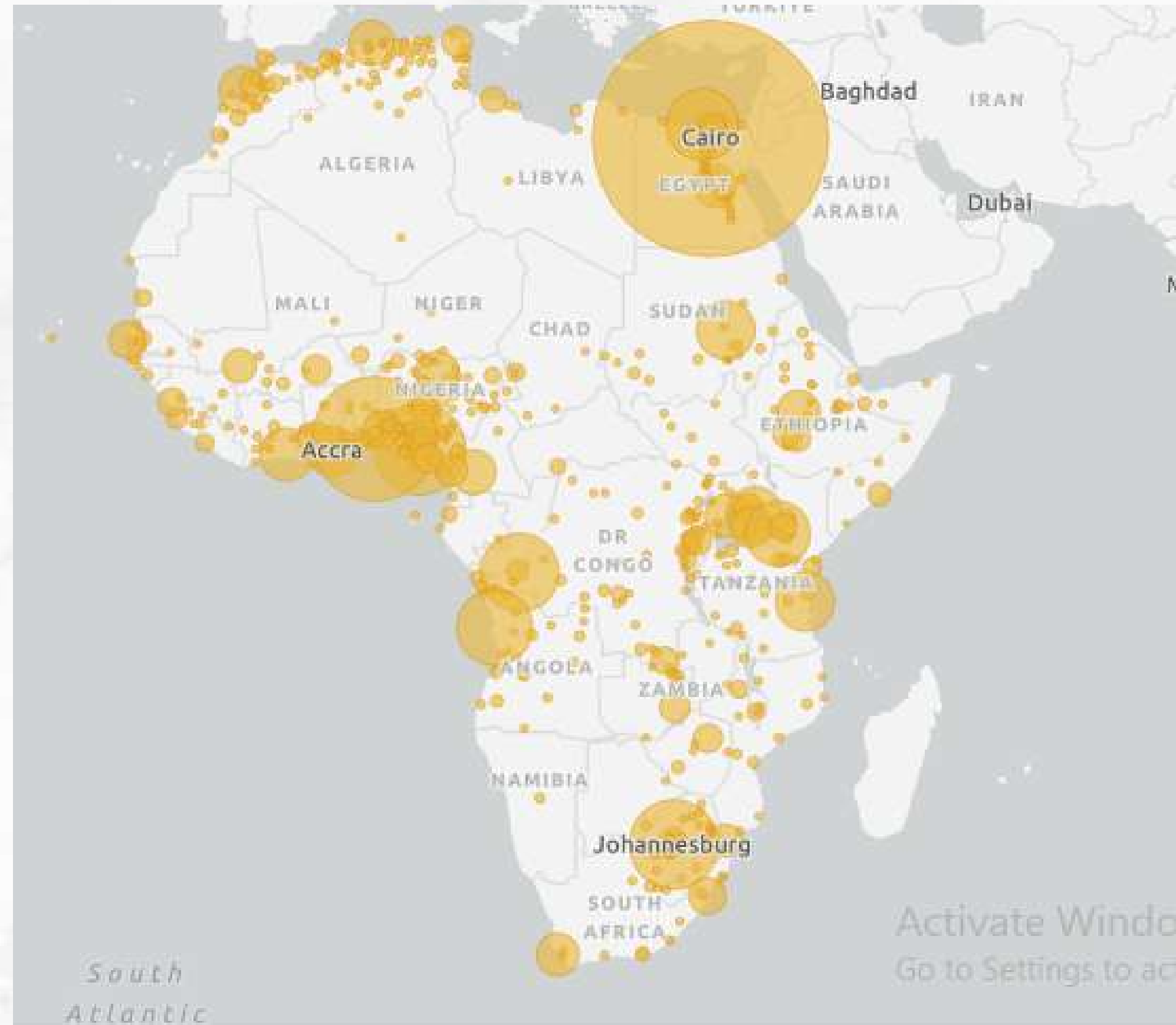
(<https://storymaps.arcgis.com/stories/>, 04/12/2022)



More than 200 cities with a population size greater than 0.5 million inhabitants



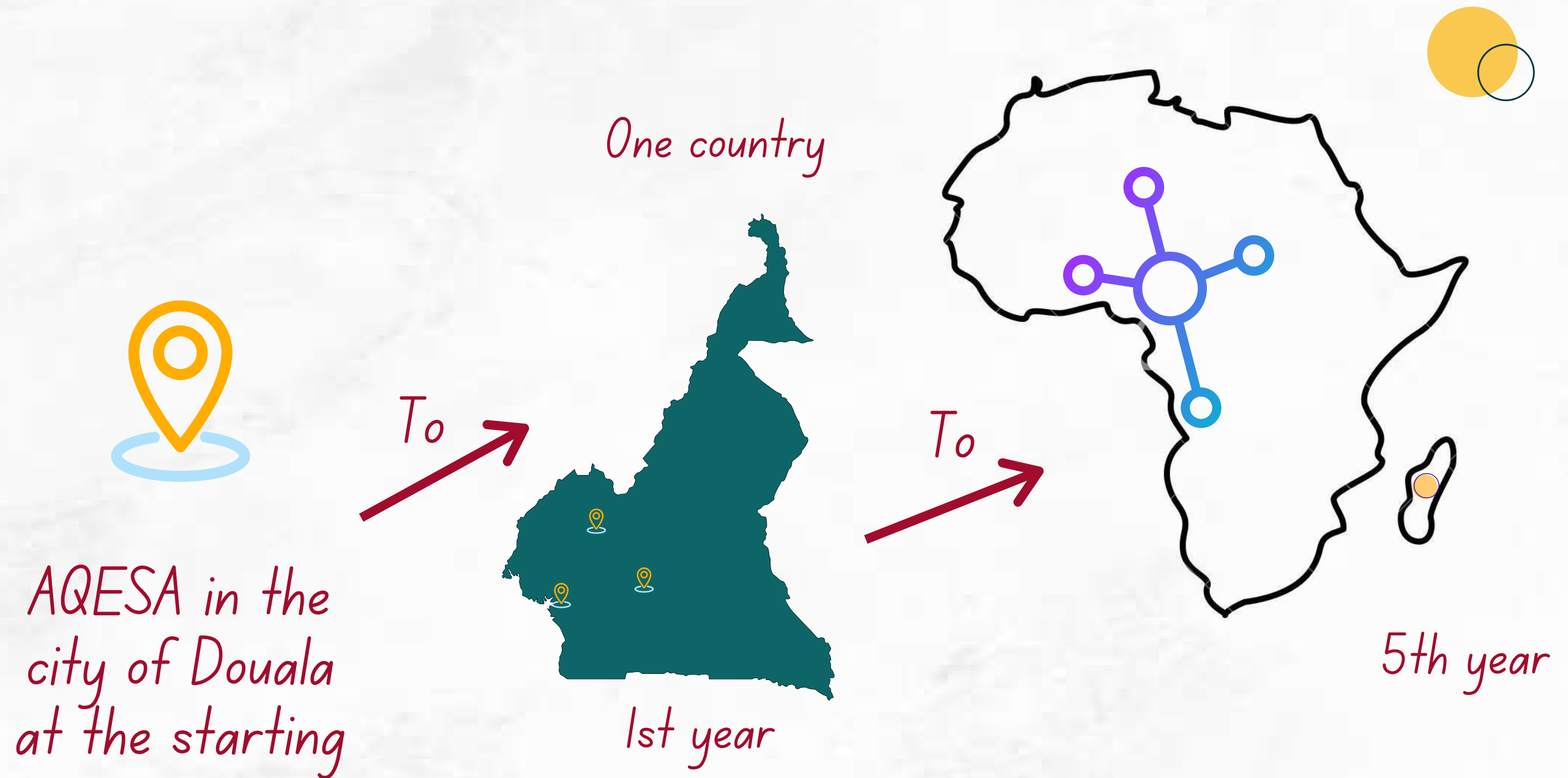
**Less than 20 cities with a proper air quality monitoring station**



# Our Goals

- Agreement with 3 cities signed during the first year in Cameroon
- The solution is deployed in 3 African countries after 3 years
- The solution is deployed in 5 African countries after 5 years

The ultimate goal is to contribute to the establishment and implementation of public policies on air quality in developing countries and in Africa in particular.





*Our company is socially based and aims to solve a problem of general concern. We, therefore, collaborate with all interested parties and organizations to increase our impacts*

*Our solutions are simple, easy to deploy, to use, and essential for the lives of all citizens worldwide and in developing countries particularly*

*By providing knowledge and data about air quality in developing countries, we are giving back and buying more lives for our people. We're, therefore, contributing to the ecologic transition and thus to a sustainable development.*

*What Sets  
Us Apart?*

# Our Timeline

1

Phase 01

Partnership agreement  
with the Douala Urban  
Agglomeration (CUD) and  
signing of the MOU

2

Phase 02

Installation and  
opening of the  
AQES headquarters  
in Douala

3

Phase 03

Acquisition and  
shipping of the sensors  
and necessary  
complementary  
instrumentation

3

Phase 03

Deployment and  
first tests of the  
solution

# “ Hello, I'm Soulemane

*Soulemane Halif Ngagine is a holder of a Bachelor's degree with honors in environmental engineering with a specialization in the production and distribution of water obtained in Turkey. He then went on to study atmospheric environments and obtained a Master of Science degree from the University of Lille in France and the University of Kyoto in Japan. This background allows him to engage in doctoral studies in the Laboratory of Physico-Chemistry of the Atmosphere (LPCA) of the University of Littoral Côte d'Opale (ULCO). He obtained his Ph.D. in April 2022 after 3.5 years of work on the study of near and far sources of air pollutants in urban and industrial environments during air pollution episodes in the Hauts de France region. His work focuses on the physical-chemical mechanisms involved in the formation of Secondary Inorganic Aerosols (SIAs), which make up nearly 50% of fine particles. These pollutants have a significant impact on health and the environment, especially during these pollution events. His areas of expertise are therefore extensive but not limited to atmospheric physics and chemistry, analytical chemistry by scanning electron microscopy, air quality, data analysis, water and environment management, climate change, and project management.*

*Soulemane Ngagine's goal is to contribute to the improvement of knowledge on air pollution in developing countries in general and in sub-Saharan Africa in particular. This explains the birth of AQES, a project on which he has been working for more than 4 years.*





# Meet our Teams



**SOULEMANE H. NGAGINE**

*Founder, Air quality and environment specialist*



**EWI STEPHANIE LAMMA**

*Climate change and Communication specialist*



**MOHAMMED N. MOUNCHAROU**

*Business Analyst*



**NJIKAM M. NOURDINE**

*Data and IT specialist*

# Contact Information



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# Thank you!

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