Evaluation of the implementation of the Air Quality Framework Agreement in West Africa

Phase 1: Abidjan & Dakar

Terms of Reference

1- Background and Rationale

In West Africa, air pollution stems from both natural and human sources, with significant impacts on health and the climate. The primary sources include domestic ombustion, road transport, industrial activities, and bushfires. To this must be added the majority use of firewood, charcoal, and agricultural residues for cooking in rural and urban areas.

The low quality of fuels (especially diesel), old vehicles without filters, dense urban traffic without strict emission standards. The industrial sector's untreated gas emissions are a serious problem. In several cities, the open-air burning of urban or agricultural waste releases toxic fumes. The burning of cables and electronic waste releases toxins such as lead, dioxins and furans

The average PM2.5 concentration in West Africa exceeds the WHO threshold by more than 4 times (5 µg/m³). The population is exposed to the impacts of poor air quality and this shortens life expectancy by about 1.6 years on average, representing nearly one billion person-years lost if air quality met WHO standards; for example, in Accra, values between 21 and 25 µg/m³ depending on the period measured, at least 4 times the WHO limit. Abidjan: daily average≈ 155 µg/m³ (during specific periods and on specific sites *(Reducing PM 2.5 seasonal concentration in urban areas could reduce the number of hospital admissions in Côte d'Ivoire).* The Air Quality Life Index (AQLI) report shows that in West Africa, average life expectancy is shortened by about 1.2 years due to particulate pollution (PM2.5)

Dust from the Sahara predominantly affects air quality during the dry season. It contributes to high levels of delicate particulate matter, especially PM10 and PM2.5. Approximately 3,000 premature deaths caused by air pollution each year, with economic losses estimated at 4.2% of GDP.

To reduce air pollution, several instruments have been adopted in Africa, West Africa and at the state level. Of note is the African Clean Air Agenda (**ACAP),** launched in 2022 by UNEP, the African Union and the Climate and Clean Air Coalition. It should also be noted that a framework agreement for the improvement of air quality in West and Central Africa was adopted in 2009 and also adopted in 2022 and 2023 regulations on diesel and petrol fuel specifications, pollutant and gas emission limits of vehicles, and a regulation limiting the lead content in paint to 90 ppm.

The aim of this study is to evaluate the implementation of relevant instruments to improve air quality and to propose actions to strengthen air quality monitoring.

2. OBJECTIVES

2-1. General objective

The main objective of this study is to propose an operational air quality monitoring system in some major capitals of West Africa.

As part of a first phase, the cities of Abidjan and Dakar are targeted.

2-2. Specific objectives

- Assess the level of air pollution and its health impact in the following major cities: Abidjan, Dakar
- Assessing the implementation of regional and national instruments
- Making proposals to reduce air pollution
- Propose a network and instruments for monitoring air quality

3. RESULTS

- The major sources of air pollution are identified at the national and cross-border levels.
- Report assessing the level of air pollution and its health impact in the following major cities: Abidjan & Dakar
- Assessment Report on the Implementation of Continental, Regional and National Air Quality and Air Pollution Instruments in West Africa.
- An air quality monitoring network is established in each of the cities.
- Proposals for measuring stations and relevant laboratories to ensure pollutant measurements and air quality monitoring.
- Proposal for a data sharing platform.

4. MANDATE AND TASKS OF THE CONSULTANT

Under the supervision of the Director of Environment and Natural Resources of the ECOWAS Commission, the consultant will be responsible for the conduct of this study. The incumbent will be responsible for the following tasks :

4.1. To take stock and analyze the degree of effective implementation of the legal, institutional and other measures identified in the cities of Abidjan and Dakar for the monitoring of air quality

4.2. Identify and analyze gaps in coherence/compatibility of legal, institutional and other measures taken/implemented for risk prevention in the Cities of Abidjan and Dakar with the regional legal framework in the implementation of air quality measurement technologies.

4.3. to propose, if necessary, on the basis of the analyses and assessments made, improvements that would be necessary to ensure coherence/compatibility between national and regional provisions with the subregional legal framework in order to facilitate their effective implementation; and make recommendations in terms of capacity building of Member States and Regional Institutions.

4.4. propose a roadmap for the implementation of the recommendations and initiatives made as well as the modalities for the implementation of each of them.

4.5. participate in and facilitate the meetings that will be organized within the framework of the study by the ECOWAS Directorate of Environment and Natural Resources.

4.6. Finalise the report of the study, considering the relevant recommendations of the validation workshop and those of the Directorate of Environment and Natural Resources of the ECOWAS Commission.

5. AVAILABLE

Deliverable 1. The provisional and final versions of the mission start-up report including, among others, the in-depth methodological note, including the detailed execution schedule of the deliverables expected from the mission, etc.

Deliverable 2. The draft study document contains the following elements:

- major sources of air pollution are identified at national and cross-border level.
- the assessment of the level of air pollution and its health impact in the following major cities: Abidjan & Dakar
- the assessment of the implementation of continental, regional and national instruments on air quality and air pollution in West Africa.
- Proposal for initiatives to revitalize and strengthen national and regional capacities for better air quality monitoring with a roadmap
- Proposal for an air quality monitoring network is established/strengthened in each of the cities.
- Proposals for measuring stations and relevant laboratories to ensure pollutant measurements and air quality monitoring.
- Proposal for a data collection and sharing platform.
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Deliverable 3. the final report of the study taking into account the relevant recommendations of the validation workshop and those of the Directorate of Environment and Resources assigned to the air quality assessment of the ECOWAS Commission.

6. METHODS AND METHODOLOGY

The Consultant will work under the supervision of the Director of Environment and Natural Resources of the ECOWAS Commission. To this end, he will regularly report on the progress of the mission to the Director.

The consultant will have to propose, in a report on the start of his or her mission, an appropriate methodological approach with a timetable for the delivery of each of the deliverables. The start-up report will be examined and validated at a scoping meeting organized by the ECOWAS Directorate of Environment and Natural Resources. The Management may, if necessary, set up a small ad hoc Technical Committee which will assist it in the follow-up.

The ECOWAS Directorate of Environment and Natural Resources (ECOWAS/DRERN) will make the necessary administrative and technical arrangements with Member

States and WAEMU and other relevant partner organizations to facilitate the conduct of the mission.

However, within the framework of this mission, the ECOWAS/DERN may ask the consultant to provide specific support for the performance of certain administrative/technical tasks, in particular in the preparation of draft (i) letters; (ii) concept notes and (iii) any other relevant documents in the context of the conduct and coordination and follow-up of this study.

The main specific support will be specified by the ECOWAS/DERN and the modalities and conditions for their implementation will be agreed with the selected consultant.

7. DURATION OF THE MISSION

The duration of the mission is 60 Man-Days in total, spread over a calendar period of three (3) months, including the time of participation in the meetings that may be organized during the mission, as well as the organization of the validation workshop of the final report, from the order to start, to the delivery of the final deliverables of the mission.

8. PROFILE AND QUALIFICATIONS OF THE CONSULTANT

For a regional study on air quality in West Africa, the consultant must have a multidisciplinary profile: scientific, technical, and institutional/political, as the subject touches on standards, monitoring and public policy.

8-1- Academic training

Advanced university degree (Master's/PhD) in at least one of the following fields:

Environmental Sciences / Atmospheric / Air Chemistry / Environmental Health / Epidemiology / Public Policy, Sustainable Development or Environmental Law / Environmental Engineering, Energy or Transport.

8-2- Professional experience

- Minimum 10 years of relevant work experience, including at least 5 years in West Africa.

- Demonstrated experience in at least two of the following areas:

- Air quality monitoring and analysis (PM2.5, PM10, NO_2, O_3, etc.)

- Development and implementation of national or regional air standards

- Environmental and health impact assessment

- Development of public policies or regional strategies (ECOWAS, UEMOA, AU, etc.)

- Experience with international organisations (WHO, UNEP, CCAC, World Bank, EU, etc.) is a strong asset.

8-3- Technical Skills

- Mastery of air monitoring tools and methods:

- Sensor networks (reference stations, calibrated low-cost sensors)

- Satellite data (MODIS, Copernicus, Sentinel)

- Air pollution dispersion and assessment models

- Good knowledge of international standards (WHO, EU directives, USEPA) and their application in the African context.

- Data analysis skills (statistics, GIS processing, environmental & Health databases).

- Proven experience in the mapping of air pollution sources.

-Proven experience in the installation of air quality measurement equipment

- proven experience in setting up an air quality monitoring network- Ability to produce monitoring indicators (KPIs): regulatory compliance, population-based exposure, health costs.

8-4- Transversal skills

- - Demonstrated experience in at least two (2) assignments involving regional institutional frameworks (ECOWAS, AU) and cross-border cooperation initiatives, supported by references.

- Ability to engage with different actors: policy makers, technical institutions, NGOs, donors.

- Excellent writing and communication skills (reports, policy briefs, presentations).

- Ability to work multiculturally and facilitate regional workshops.

- Minimum of two (2) similar assignments involving work with ECOWAS or on ECOWAS-funded or ECOWAS-led projects

8-5- Languages

- French / English

9. SELECTION PROCESS

9.1. Receipt of CVs from candidates

Candidates will submit their CVs and a selection will be made to select the candidate whose profile best meets the requirements of the assignment.