Eastern & Central Africa

Actions taken by governments to improve air quality

1.0 Introduction

In June 2014 the United Nations Environment Assembly (UNEA) adopted resolution 1/7 *Strengthening the Role of the United Nations Environment Programme in Promoting Air Quality*. As requested in paragraph 4 and 7 of the resolution, which requested UNEP to develop a report detailing actions taken by governments to promote air quality, this report details some of the major actions being undertaken by governments in Eastern and Central Africa to improve air quality.

This report summarises ten actions being undertaken in the sub-region to improve air quality. In selecting these ten actions, consideration was given to their replicability, global appropriateness to address particular air pollution challenges and potential impact. For more details, please refer to the methodology document.

These actions are: *For Industrial activities:* 1) establishing incentives that promote investments in renewable energy, pollution control technologies, energy efficiency and clean production mechanism; and 2) increasing industrial energy efficiency. *For road transport:* 3) reducing sulphur content in diesel and petrol; 4) tightening vehicle emission standards to at least Euro 4/IV-equivalent; and 5) increasing investments in public and non-motorized transport infrastructure and systems. *For open waste burning:* 6) reducing open burning of both agricultural and municipal waste through provision of legislation, monitoring, enforcement and municipal waste management systems. *For Indoor air pollution:* 7) improving access to cleaner cooking and heating fuels; and 8) improving access to cleaner, more efficient cook/space heating stoves. *For general legislative efforts:* 9) establishing and continuously tightening ambient air quality standards to meet WHO recommendations; and 10) establishing laws and regulations to support efforts to meet ambient air quality standards, and strengthen monitoring and enforcement. Figure 1 provides a summary of these actions for the sub-region.

EASTERN & CENTRAL AFRICA POLICIES AND ACTIONS TO IMPROVE AIR QUALITY



Figure 1: A summary of actions, programmes, policies, laws and regulations undertaken by governments in the sub-region to improve air quality (green = progressing to best practice; red = action still required).

2.0 Regional Overview

The Eastern and Central Africa sub-region consist of: Burundi, Cameroon, Central African Rep., Chad, Comoros, Republic of Congo, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Kenya, Rwanda, Sao Tome and Principe, Somalia, South Sudan, Sudan, Tanzania and Uganda. Indoor air pollution is the most important driver of air quality related morbidity and mortality in the sub-region. The World Health Organisation (WHO) estimates that indoor air pollution is responsible for approximately 270,000 premature deaths annually.

However, in the recent past ambient air pollution has become a major issue of concern as countries grow in both population and economic output. It is estimated that ambient air pollution is responsible for 57,000 premature deaths annually.

Use of solid fuels to meet household energy demand is the most important driver of deteriorating air quality, and it is responsible for around 80% of all premature deaths linked to air pollution in the sub-region. Even though use of solid fuels is responsible for the biggest portion of indoor air pollution, it is also a considerable contributor to outdoor air pollution. Therefore, to effectively manage air quality in the sub-region, governments and their partners have to ensure access to clean energy for both rural and urban households.

Only three countries out of the 19 in East and Central Africa have access to non-solid fuels at rates greater than 35%. Djibouti has the highest non-solid fuels access rate at approximately 84%.

In addition to indoor air pollution, other emissions sources such as transport and industry are on the rise especially in urban areas where these sectors tend to be concentrated. The current contribution of vehicular emissions to the overall air quality in East and Central Africa is considerable. Due to the projected economic growth, transport will become more important in the foreseeable future, as more people will be able to afford vehicles. These countries therefore have an opportunity to ensure that the projected growth in vehicle numbers will not compromise air quality significantly. This can be achieved by enacting laws and regulations that will ensure vehicles being imported into the sub-region have at least Euro 4 emission standards and that fuel sulphur content is below 50ppm, and by increasing investment in public and non-motorised transport.

Open burning of waste is another major source of air pollution in the sub-region, with eighteen out of the nineteen countries in the sub-region still practicing some level of open burning of agricultural and municipal waste. Only one country, Rwanda, has effectively managed to reduce municipal waste burning through waste management and collection systems, although agricultural waste burning is still practiced in some regions.

Progress has been made in different areas in different countries, and there are several positive case studies to be found across the sub-region. There are however specific areas in each country that can be improved, while standards need to established and continuously tightened, public transport expanded, the use of best practice increased etc. In addition, for policies and legislation to lower air pollution, countries must also improve implementation and enforcement, without which actions to improve air quality will not achieve their potential impact.

3.0 Actions Taken to Improve Air Quality

3.1 National air quality standards & regulations

Based on the UNEP Air Quality Policy Catalogue, four out of the nineteen countries in the sub-region have established ambient air quality standards (AAQS), although most of these standards do not meet WHO guidelines. All the other countries have partial air quality protection laws or regulation that tend to be more sector specific. Although some countries in the sub-region have established AAQS, none of the countries have a nationwide air quality law or regulation to facilitate a comprehensive air quality management. Figure 2 shows countries within the sub-region that have enacted laws and policies to manage air quality.



Figure 2: Number of countries in the sub-region that have enacted some form of air quality laws and regulations, and the number of countries that have enacted and promulgated Ambient Air Quality Standards (AAQS).

In the sub-region, Kenya, Rwanda, Tanzanian and Cameroon have established Ambient Air Quality Standards (AAQS) although they are at very different stages of implementation. Rwanda has fully implemented the standards while the other countries are still in the process of enacting supporting regulations to fully implement the standards.

While the four countries have established Ambient Air Quality Standards (AAQS), they lack National Air Quality Policies to help in developing a strategic direction of implementing the established standards. In addition, these standards are contained in the Environmental Management and Coordination laws or regulations.

3.2 Transport

The rapid growth in the number of vehicles in major cities within the sub-region has put substantial pressure on urban transport systems. For instance in Kenya the number of vehicles doubles every six years. This has in turn led to increased traffic congestion and emissions in urban settings. This situation is worsened by the lack of vehicle emission standards in the sub-region, which translates to heavy emissions from the transport sector.

Actions and policies being implemented in the sub-region to reduce vehicular emission include the expansion of public and non-motorised transport infrastructure and systems. Given the increased congestion experienced in many urban areas, maintaining and increasing the modal share of public transport is essential to increase mobility while

decreasing transport emissions. For instance the governments of Tanzania and Ethiopia are currently developing mass transport systems composed of Bus Rapid Transit (BRT) and light rails. Tanzania has implemented a BRT system project to improve urban mobility and accessibility in the city of Dar es Salaam. The BRT is expected to carry up to 495,000 passengers per day and reduce travel time. In addition, the use of modern BRT, which use cleaner fuels, will significantly reduce roadside concentration of various emissions. Figure 3 shows the number of countries in the sub-region that have initiatives and programmes to significantly expand public and non-motorised transport.



Figure 3: Number of countries in the sub-region that have initiated programmes and initiatives to significantly expand public transport.

In all countries in the sub-region, use of public and non-motorised transport is high, but more needs to be done to improve the safety and overall condition of walking and biking facilities especially in the large urban centres. Although the use of non-motorised transport is currently high in the sub-region, this might change over time as the economic situation of the citizenry improves, unless they are provided with safe and reliable options.

Improved fuel quality and implementation of vehicle emission standards are also required to minimise emissions from the transport sector. In the sub-region vehicle emissions are controlled mostly by imposing an age limit for second hand car importation. For instance, this age is set at 8 years in Kenya. Although this policy may reduce vehicle emissions, its overall effectiveness in improving air quality may be limited as the fleet numbers increase over time. Figure 4 shows some vehicle emission standards in the sub-region. In the subregion, legislation regulating vehicle emission standards is still in its infancy, with several countries proposing to enact standards in the coming years, as is the case for Kenya and Rwanda.



Figure 4: Number of countries in the sub-region that regulate vehicle emission at Euro 4 (or equivalent) standards.

Fuels and vehicles work as a system; in order to benefit from improved vehicle standards, low sulphur fuels are needed as these allow the advanced pollution control devices to work optimally.

In a 2013 workshop, the East African Community (EAC) began discussions on the implementation of harmonized low sulphur fuel standards for East Africa. Participants were informed by the EAC Secretariat that the harmonized low sulphur standards would be gazetted before the end of 2013, with the Climate and Clean Air Coalition (CCAC) providing support for the enactment of low sulphur standards before the effective date of implementation - 1 January 2015. As a result of this EAC decision, the five East African member states - Burundi, Kenya, Rwanda, Tanzania and Uganda – now have a fuel sulphur content limit of 50ppm.

The remaining fourteen countries in Eastern and Central Africa regulate fuel sulphur content at 500ppm and above (Figure 5).



Figure 5: Number of countries in the sub-region that regulate fuel quality using Sulphur content as a proxy for fuel quality

3.3 Open burning of waste

Uncontrolled open burning of both agricultural and municipal waste is a common practice in all the countries within the sub-region (Figure 6). This is attributable to the low waste collection efficiency in most large cities. Most countries in the sub-region have established policies and legal frameworks to manage municipal solid waste, although implementation is weak. Hence, households resort to either private waste collection or illegal disposal through dumping and burning.



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