

Caribbean

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 paragraphs 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 the Caribbean 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.

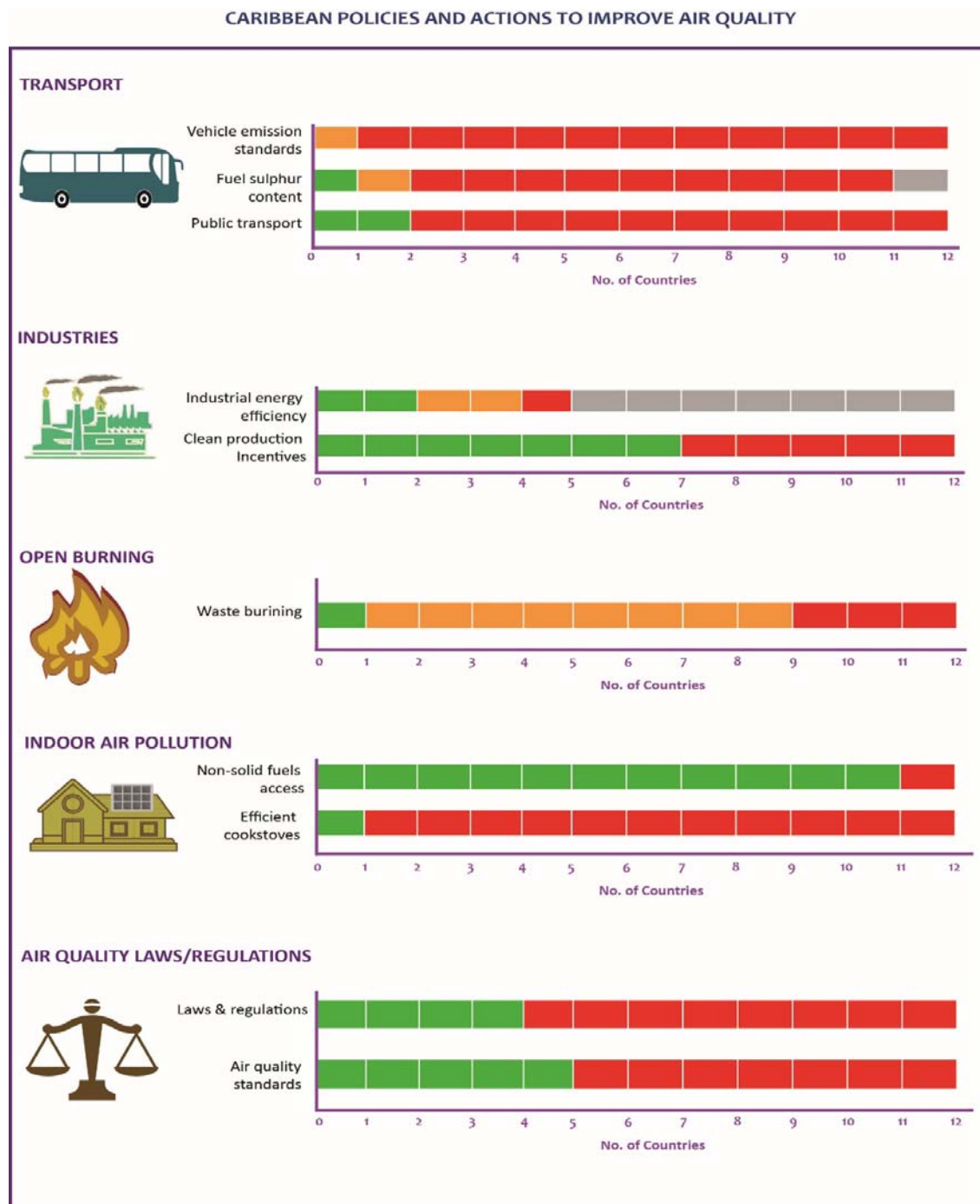


Figure 1: A summary of actions, programmes, policies, laws and regulations undertaken by governments in the sub-region to improve air quality (green = progressing to best practice; red = action still required)

2.0 Regional Overview

The Caribbean sub-region consists of twelve countries: Antigua & Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Trinidad & Tobago, Haiti, Jamaica, Saint Kitts and Nevis, and Saint Lucia. Most governments in the sub-region have enacted laws and regulations on air pollution which are at different stages of implementation. Three out of the eleven countries have comprehensive ambient air quality standards with accompanying air quality policies, laws and regulations.

Although much has been done to improve air quality in the sub-region, it still remains an issue of concern. The World Health Organisation (WHO) estimates that it causes approximately 13,600 premature deaths annually in the sub-region. Indoor air pollution is by far the most dominant cause of air quality related premature deaths in the sub-region.

Use of biomass to meet household energy demand is the predominant driver of air quality related health effects in the sub-region. Use of solid fuels is also a considerable contributor to outdoor air pollution. Therefore to effectively manage air quality in the sub-region, governments have to enact policies, regulations and programmes that promote access to clean energy and/or clean cooking stoves for both rural and urban households. Currently, eleven out of the twelve countries in the sub-region have more than 85% of their citizens accessing non-solid fuels.

Emissions from other sectors such as transport are also important in the sub-region, although their current health impacts are minimal. However, as the sub-region grows economically, emissions from these sectors will become more important. These countries therefore have an opportunity to ensure that the projected growth will not compromise air quality significantly by enacting policies and programmes that will prevent air quality deterioration in the future. For instance for the transport sector, this can be achieved by enacting laws that will ensure vehicles being imported into the sub-region have at least Euro 4 emission standards, that fuel is low sulphur, and by increasing investment in public and non-motorised transport.

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 be established and continuously tightened, public transport expanded, the use of best practice increased etc. 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

Five out of eleven countries in the sub-region have ambient air quality standards, although not all meet WHO-recommended ambient air quality standards or have standards for PM_{2.5}. Four countries in the sub-region (Antigua & Barbuda, Dominica, Dominican Republic, and Jamaica) have nationwide legislation, laws, policy or Act specifically addressing air quality. Figure 2 below shows countries within the sub-region that have enacted laws and policies to manage air quality. In the sub-region less than 50% of the countries have enacted air quality management laws.

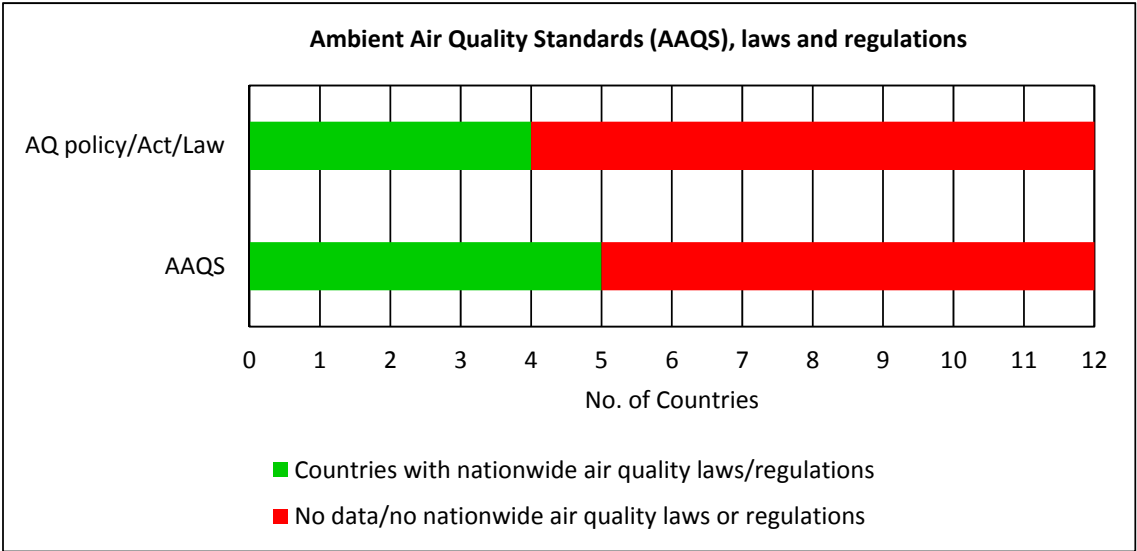


Figure 2: Number of countries in the sub-region that have enacted some form of air quality laws and regulations, and also the number of countries that have enacted and promulgated Ambient Air Quality Standards (AAQS).

3.2 Transport

The transport sector has seen substantial growth in the Caribbean sub-region, with increases in vehicle ownership, passenger numbers and freight activity. Actions and policies being implemented in the sub-region to reduce vehicular emission include the expansion of public and non-motorised transport. 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.

The Dominican Republic has constructed the Santa Domingo Metro, which is a rapid transit system that serves the capital and other localities within the capital. The network presently has two lines with thirty stations and a total track length of 27.4 kilometres. The Government of Saint Lucia is planning to expand the Castries-Gros Islet Highway, which will include sidewalks, ten footbridges and safe drop-off points for public transport. Figure 3 below shows the number of countries in the sub-region that have invested in expanding public and non-motorised transport.

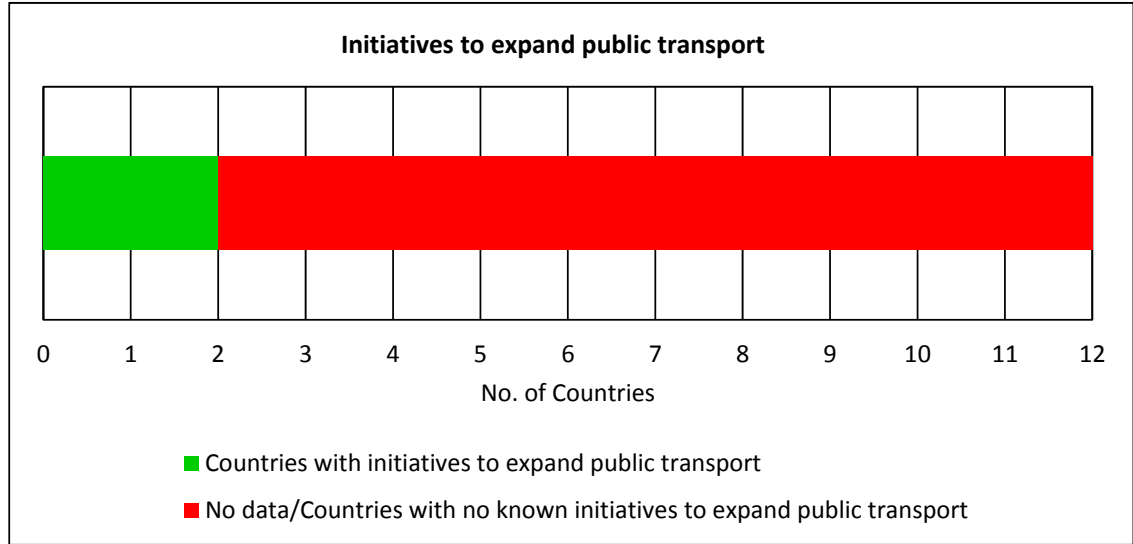


Figure 3: Number of countries in the sub-region that have initiated programmes and initiatives to expand public transport.

Improved fuel quality and implementation of vehicle emission standards are also required to minimise emissions created from transport. In the sub-region, Bahamas has established

pre-Euro 4 vehicle emission standards. Figure 4 below shows the number of countries in the sub-region that have enacted and promulgated vehicle emission standards. In the figure, Euro 4 standards and above are indicative of the current best practice in vehicle emission control.

Some of the countries in the sub-region address vehicle emissions by imposing restrictions on second hand cars importation and also charging importation duty on vehicles depending on their engine capacity. For instance, in Saint Lucia, a higher import tax is imposed on older vehicles and vehicles with larger engine capacity.

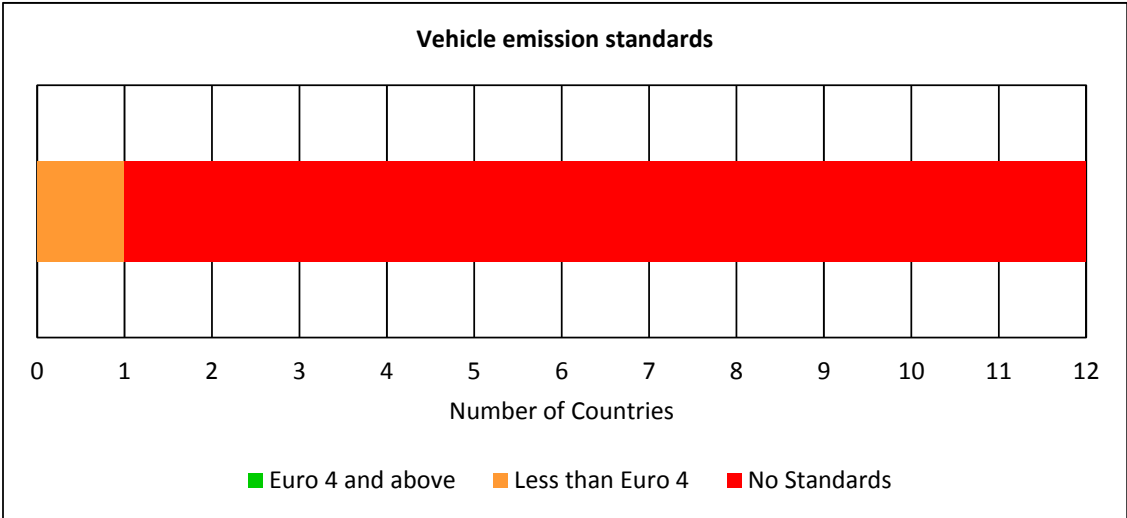


Figure 4: Number of countries in the sub-region that regulate vehicle emission at Euro 4 (or equivalent) standards.

As fuels and vehicles work as a system, fuel quality should match vehicle standards. Low and ultra-low sulphur fuels allow more advanced pollution control devices to function in vehicles. One country in the sub-region, Barbados, has established fuels quality standards restricting fuel sulphur content to below 50ppm. However, in some countries, low sulphur fuels are available in the market, even though regulations allow for high sulphur levels. For example in Jamaica, ultralow Sulphur fuel (15ppm) is available in parts of the country. Figure 5 below shows the number of countries in the sub-region that have enacted regulations to control fuel quality.

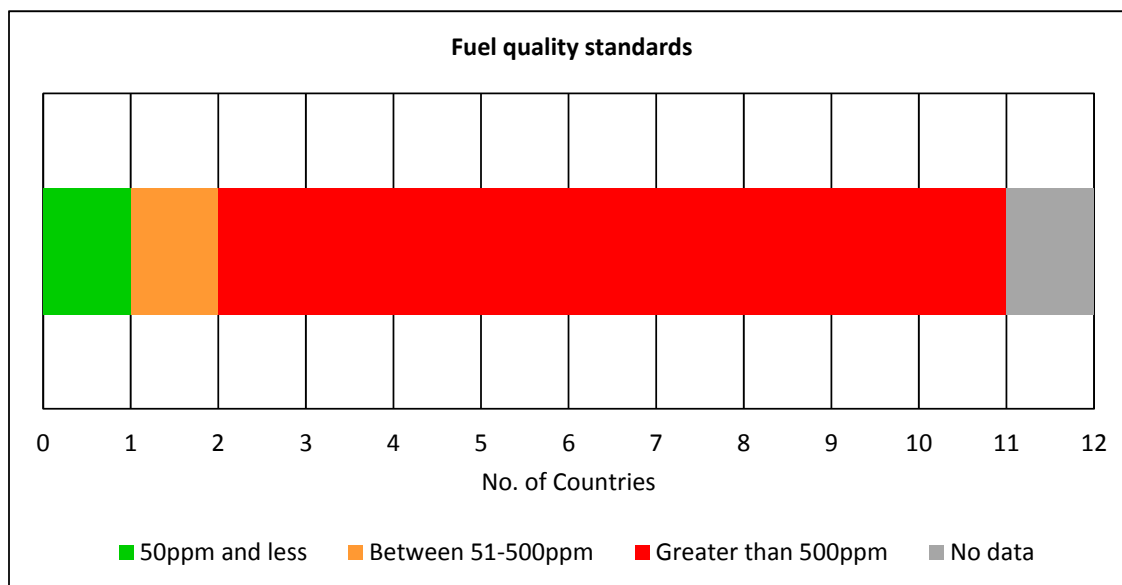


Figure 5: Number of countries in the sub-region that regulate fuel quality using Sulphur content as a proxy for fuel quality

3.3 Open burning of waste

Open waste burning can pose a significant threat to air quality and public health. In the Caribbean, open burning is commonly used to manage sugarcane fields and solid municipal waste. Two countries in the sub-region, Jamaica and Barbuda, have legal frameworks prohibiting open waste burning without permission; however, open waste burning still occurs. In all the countries within the sub-region at least one form of waste (agricultural or municipal) is burnt in open fires (Figure 6).

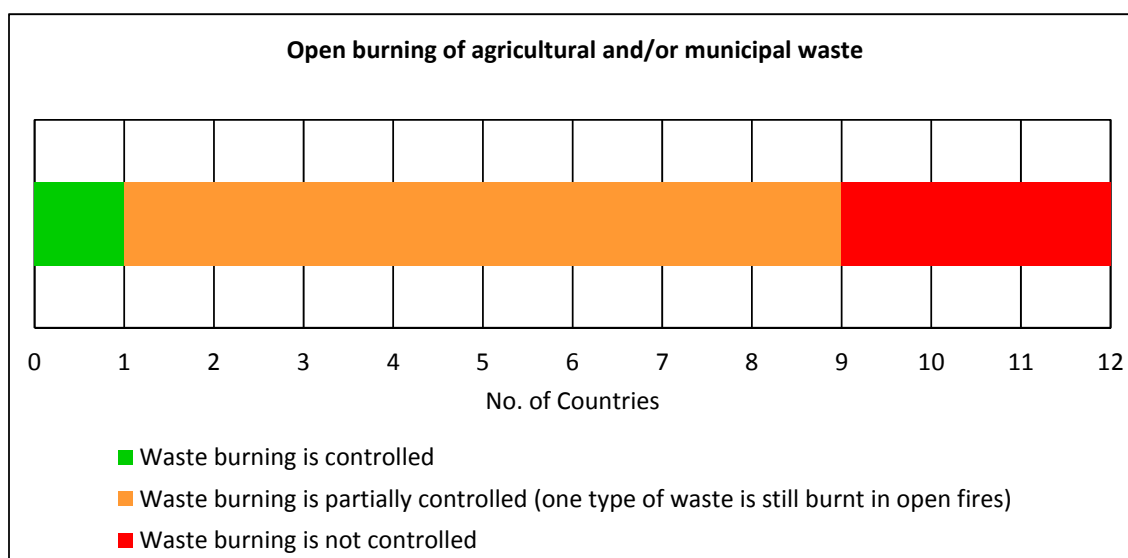


Figure 6: Number of countries where laws, regulations and actions to ban and regulate open waste burning have been implemented.

3.4 Indoor air pollution

Traditional use of solid fuels for to meet household energy demands produces high levels of indoor air pollution with a variety of health damaging pollutants. Seven of the twelve countries in the Caribbean sub-region have less than 10% of households using solid fuels for cooking. While no country in the sub-region has come up with regulations on indoor air pollution, three countries (Haiti, Dominican Republic and Cuba) have programmes aimed at reducing indoor biomass burning. Figure 7 shows the percentage of population within countries in the sub-region that have access to non-solid fuels to meet their household

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