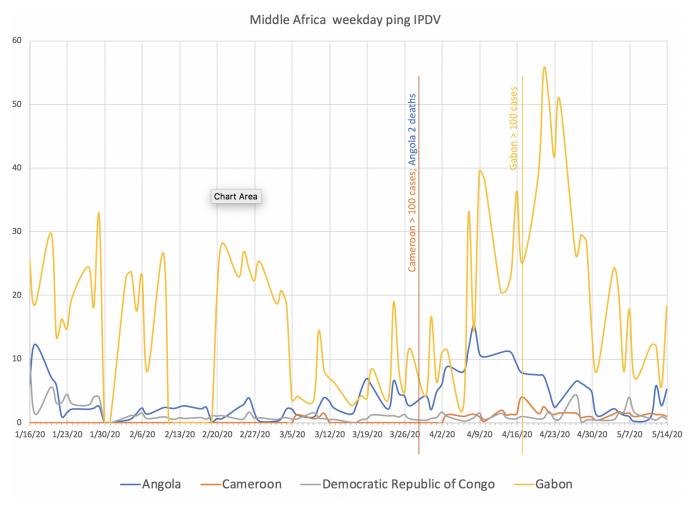
# **PingER and Covid-19 and Central Africa**

## Introduction

The African Development Bank defines Central Africa as Cameroon, the Central African Republic, Chad, the Democratic Republic of the Congo, the Republic of the Congo, Equatorial Guinea, and Gabon.



We looked at the IPDVs for the individual hosts in each country, see below. The spreadsheet is here.

#### Angola

PingER monitors four hosts in Angola.

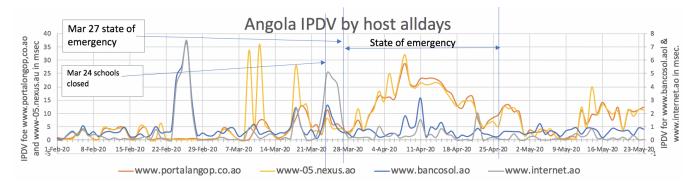
- www.bancosol.ao BancoSol HQ in the capital Luanda
- www.portalangop.co.ao Angola Press Agency in the capital Luanda
- www.internet.ao Internet Technologies In Benfica
- www-05.nexus.ao Nexus Telecom Angola in Luanda

The trajectories for the hosts divide into two:

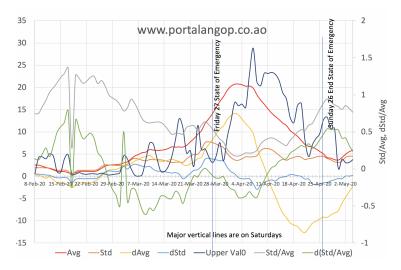
- · www.internet.ao and www.bancosol.ao track one another fairly closely
- www.portalongop.co.ao and www-5.nexus.ao track one another fairly closely

According to https://en.wikipedia.org/wiki/COVID-19\_pandemic\_in\_Angola the first two cases were confirmed Mar 21. Mar 24 schools closed. Mar 29 two Covid-19 deaths. According to https://reliefweb.int/report/angola/unicef-angola-covid-19-response-interventions-issue-2 on Mar 27 Angola activated a state of emergency later extended until Apr 26.

Following the schools closing, a week later there is a sustained increase in the IPDV for 2-3 weeks for www.portalongop.co.ao and www-05.nexus.ao.



To attempt to get a better signature for such a sustained increase we took two adjacent windows of 14 days, averaged the data in each window, and slide the windows forward in time we can look at the average (avg), standard deviation (std for each window and compare their difference as a function of the date of the start of the more recent window. Doing this for <a href="https://www.portalangop/co.ao">www.portalangop/co.ao</a> we get the chart below:



#### Cameroon

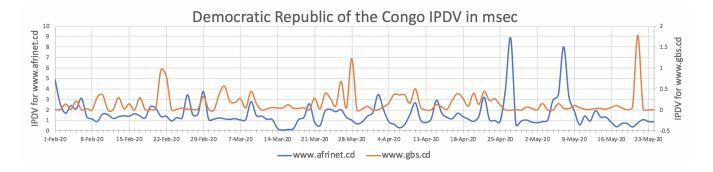
Cameroon: First confirmed case March 6th, 2nd case March 6th, 1st Death March 24th. See https://en.wikipedia.org/wiki/COVID-19\_pandemic\_in\_Cameroon for more information. There is no mention of a lockdown or closing of educational, religious establishments etc.

Unfortunately, there are no PingER measurements prior to Mar 6, and even after that no continuous data until Apr 13. Thus we are unable to draw any conclusions.



# **Democratic Republic of the Congo (DRC)**

PingER monitors two hosts int the DRC. Both are in the capital Kinshasa. One (www.afrinet.cd) is an Internet provider the other www.gbs.cd is a broadband provider.According to https://en.wikipedia.org/wiki/COVID-19\_pandemic\_in\_the\_Democratic\_Republic\_of\_the\_Congo the first case was Mar 10, schools, bars, restaurants, and places of worship were closed and on 24 March, the president imposed a state of emergency and closed the borders. Looking at the chart below it is hard to see any dramatic changes associated with these dates.



## Gabon

PingER monitors one host in Gabon. It is www.tresor.ga. It is at the Tresorerie Generale du Gabon (the Minister of Economy and Finances), in the capital and largest city Libreville. According to https://en.wikipedia.org/wiki/COVID-19\_pandemic\_in\_Gabon the 1st case was Mar 12 and the 1st death Mar 20. There is little other information. According to https://www.africanews.com/2020/04/14/covid-19-gabon-begins-lockdown// Gabon began a lockdown in Libreville Apr 13. This ended by May 2nd

The PingER IPDV chart for Gabon is shown below. There is a sustained rise in the IPDV starting Apr 7 and lasting until the end of April which correlates with the lockdown

