Security Briefing Note for COVID-19 in Nairobi, Kenya with Insights for East Africa

Security Briefing Note for COVID-19 in Nairobi, Kenya with Insights for East Africa

Background

MS Risk published a Security Briefing Note for Nairobi, Kenya on 23 March 2020. The report examined available information and infrastructure and articulated potential outcomes for the COVID-19 pandemic in the regional capital. The report was widely circulated and well received and, although the security assessments and guidance remain relevant, there is a growing requirement for an update. Since the publication of the last report, cases in Kenya have gone from 15 cases from 177 tests to 1161 cases from 55,074 tests on 22 May 20. With forecasts for the region appearing significantly more negative than the manifest reality and the numbers appearing incongruously low compared to a global sample, it was assessed as necessary to provide an update to clients and colleagues in Nairobi and throughout the region to facilitate decision making.

Nairobi COVID-19 Timeline

- 27 Mar – 31 Cases - International movement, social, and commercial restrictions announced. A curfew in effect 1900hrs – 0500hrs for security.
- 30 Mar – 50 Cases - Kenyan police kill numerous citizens while enforcing curfew including a 13yr old child on his balcony.
- 30 Mar – 50 Cases - Embassies arrange last commercial flights out of Nairobi.
- 1 Apr – 81 Cases - Shots fired at the Kenyan/ Ethiopian border at the border is closed.
- 2 Apr – 110 Cases - Rescue.co issues a first look at potential outbreak scenarios depending on the effect of social and religious gathering restrictions.
- 6 Apr – 158 Cases - Further internal movement restrictions imposed (in and out of Kilifi, Kwale, Mombasa, and Nairobi). Temporary panic ensues as the president confuses "between" and "within".
- 6 Apr – 158 Cases - President announces mandatory mask-wearing in public.
- 9 Apr – 184 Cases - World Bank issues stark outlook for Sub-Saharan Africa noting food security concerns.
- 11 Apr – 191 Cases - Kenya government announces restrictions on charitable distributions after a chaotic ad hoc food distribution in Kibera slum.
- 16 Apr – 234 Cases - President Kenyatta announces a welfare stipend for families in need.
- 25 Apr – 343 Cases - Curfew and social/ movement restrictions extended for 21 days (to 16 May)
- 27 Apr – 363 Cases – Health Cabinet Secretary announces relaxation of social restrictions.
- 28 Apr – 374 Cases - Uganda accuses truck drivers from neighbouring countries of importing COVID.
- 7 May – 607 Cases – The Kenyan president announces a 14 day lockdown of Eastleigh neighbourhood of Nairobi and Old Town Mombasa. (to 21 May)
- 16 May – 830 Cases - Closure of land borders between Kenya and Somalia & Tanzania; curfew and social/ movement restrictions extended for 21 days (to 3 Jun)
- 20 May – 1029 Cases – President extends Eastleigh/Mombasa lock down to 6 Jun

Observations Since Last Reporting

- A better-than-expected rate of transmission and/or mortality in the entire East Africa Region.
- The effect of internal movement restrictions to limit the spread to medically under serviced areas is unclear.
- Border closures, small skirmishes, and cross-border blaming are an unsustainable strategy.
- A spike in crime (street crime and residential robberies) in urban areas as closures take effect and the poor take desperate measures.
- Politicians, regional analysts and journalists have tried to fill the vacuum of information with supposition, dispersions, and claims resembling terminal uniqueness.
- Widespread mistrust in authorities and the consequences of a positive test have manifested in poor turnout for randomised testing.

Objective

The objective of this report is to give clients a better understanding of the events over the last two months, possible outcomes of the current situation, and recommendations for potential courses of actions.

Caveats

This briefing note is **not** certain and **not** exhaustive. There is a need to lay out the **probable** and the **possible**. The probable outcomes serve as the basis for planning and preparing; the possible outcomes give a forecast as to the potential of a situation to degrade in order to consider a wider array of impacts and emergency measures. Links are provided throughout and are primarily to media sources but can be followed to the appropriate academic source. This was done on order to allow the reader a sense of the source reporting without requiring a subscription to academic journals.

Situation

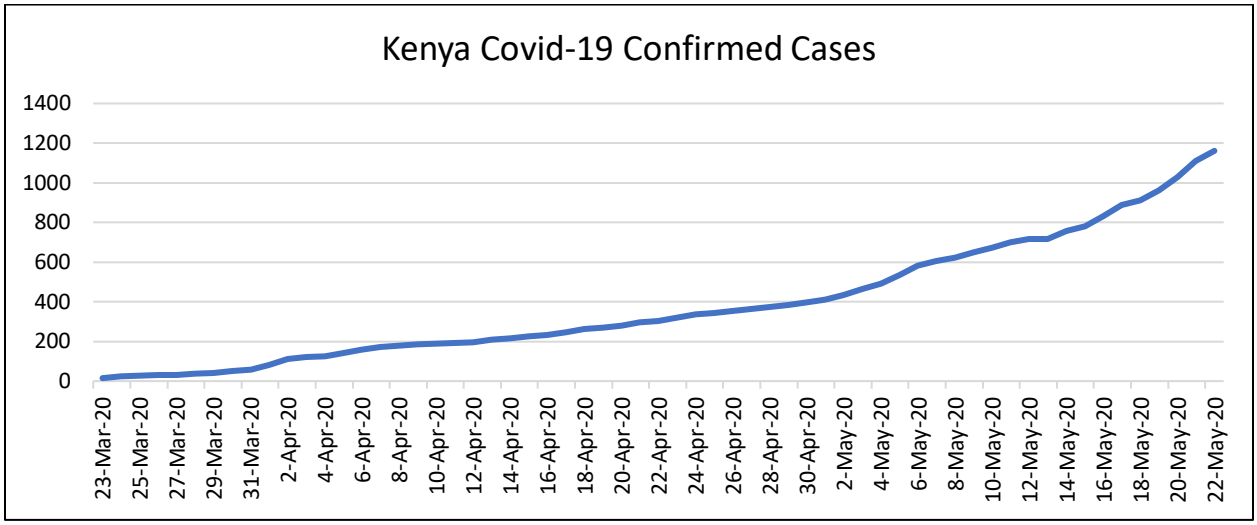
The Disease[1]: COVID-19, primarily a respiratory tract infection with similar symptoms to the flu, was first identified in Wuhan, China in the last quarter of 2019. Despite quarantine measures in Wuhan and the wider Hubei province, the disease spread quickly with a significant death toll. Since spreading to the much of the rest of the world, the virus has had varying impacts and mortality rates. The spread is aided by an incubation period of up to 14 days, hence the common quarantine period for international arrivals, however symptoms tend to present within 5 days of exposure. It remains unclear as to whether those carrying the virus in the incubation phase are contagious or not. The disease is spread largely through bodily fluid (mucous or saliva) in droplets where it is transmitted via contact to eyes, nose, and mouth.

At the time of writing[2] Singapore has 30,426 cases with 23 deaths (0.076% mortality) whereas Sweden has 32,809 cases with 3,925 deaths (12% mortality) and Kenya has 1161 cases with 50 deaths (4.3% mortality). The odds of rolling double-six is 1 in 36 or just under 3% so the mortality rate of COVID-19 in Kenya is worse than a simple roll of the dice.

[1] This is a brief description. For further guidance and understanding, go to www.who.int

[2] Source Johns Hopkins University

What has happened so far? As noted in the timeline, Governments throughout East Africa have taken a wide array of measures, to varying effect. Differing views have formed on the efficacy of control measures and the legitimacy of reporting, notably expressed in the reporting of the Economist and the New Yorker. What is clear is that so far, COVID-19 doesn't seem to be as severe as feared. Mistrust in governments has been difficult to overcome so the reported numbers are dubious because mild sufferers do not wish to be sequestered and pay for it. While at the same time, hospitals have not been overwhelmed with patients suffering from severe chest congestion. It remains unclear if epidemiological models for the spread have been right or wrong if the cases are under-reported or mild. Some locally based analysts are reported to have called epidemiological models "snake oil" however, on the balance of probability, is it more likely that the entire world has it wrong or that the numbers for East Africa are being under reported due to a lack of capacity and severity of symptoms? A look at a world map of cases begs the question. The FT reports that 3 positive cases were reported from a random sample of 400 in the Kibera slum, extrapolated for 250,000 would give 1800 cases in that one community. There is also the possibility that the disease was present before the first case was announced in March; media reports signalled an unattributable increase in pneumonia in Kenya in early 2020.



Kenya Weekly COVID-19 Statistics
(data at Annex A)

	Tested	New Cases	Deaths	Recovered
30 Mar - 5 Apr	2629	100	3	3
6 - 12 Apr	3997	55	4	21
13 - 19 Apr	5780	73	6	42
20 - 26 Apr	4753	85	0	39
27 Apr - 3 May	5788	110	10	59
4 May - 10 May	8317	207	8	74
11 May - 17 May	11615	215	18	74
18 May – 22 May (5 days)	11362	274	0	67

Why isn't it worse? Short answer: no one knows! As Bertrand Russel put it: "One of the painful things about our time is that those who feel certainty are stupid, and those with any imagination and understanding are filled with doubt and indecision." Epidemiological models are based on previous epidemics and how they spread, however, they cannot necessarily account for all of the variations. The BBC published a good explanation of the R_0 factor and why it is so important. Various hypotheses have been suggested for what makes the numbers in Sub-Saharan different, some have potential to explain observations while others are clearly weak when compared to evidence elsewhere.

Altitude? A number of high-altitude cities have much higher infection rates than East Africa, for example: Quito, Ecuador at 2850m.

Heat and humidity? This is the weakest of all theories and touted by selective American outlets in the hopes that it will slow in the summer but less relevant as many parts of East Africa are neither hot nor particularly humid and oblivious of the fact that cases are spiking in the middle of the Amazon rain forest where the daily average temperature is 32C! Nairobi is also heading into the cold season so if this is a factor, it does not bode well for the regional capital.

Race? Statistics emerging from Latin America, the UK, and USA suggest that people of African origin have an increased risk of COVID-19, although it is acknowledge that these are likely due to the racial bias of the respective societies while elsewhere in Africa the impact is severe Such as South Africa and Nigeria. Vitamin D deficiency has been suggested as a link, but this presumes that Mediterranean countries suffer from a lack of sunshine and time outdoors and that seems unlikely. West Africa doesn't seem to regarded itself as immune as Ghana reported 500 new cases in a single factory. But it could become apparent that some people have resistance to COVID simply by genetic good fortune, but it is unlikely and remains to be demonstrated.

Age? This is one of the most prominent differentiators of African countries from their European counterparts and may serve as one of the better explanations. Age is a significant indicator of COVID risk, 22% of Italians are over 65yrs of age whereas in Kenya it is 3%. 80% of Italy's deaths were over the age of 70, and 95% over 60yrs. South Korea has a similar demographic (15% over 65yrs) and 78% of COVID deaths over 70 and 92% over 60yrs. Only 2.4% of Ugandans are in the risk group and 3% of Tanzanians.

A combination of factors or another factor? Probably. But it is unclear what that is. Some have postulated that bad transport and a young population have slowed the spread. There are other factors such as exposure to other maladies and/or high vaccination rates that have been suggested as contributing factors. Further confounding the issue is that governments lack credibility and capacity so there is no way of ascertaining the veracity of published statistics. So, we have to deal with the information available, assess its credibility, and identify probably outcomes based on these less-than-perfect inputs. It was noted two months ago that: "Anyone who tells you they know what is going to happen in the next six months is wrong" and that observation remains poignant.

Are control measures working? Again, no one knows because they aren't actually being implemented as widely as published. In an Expat-filled shopping mall in Nairobi, everyone is

wearing a mask but a walk in a slum or a drive to up-country Kenya quickly reveals that control measures are seldom followed unless there is a direct threat of punishment. This is symptomatic of a population with little trust in the government and with little reason to change their minds. The Kenyan Government finds itself in a paradoxical situation where if the numbers are to be believed, there is little requirement to wear a mask because cases are being located and isolated while at the same time, police are enforcing mask wearing and other measures, often with brutality, where few people are infected or likely to be exposed. Mask wearing is now common **Not sure this is right. KE govt could say masks are working based on this, even if only 50% of the pop is wearing them.**

What about the Madagascar cure!? Depending on who you follow, the president of the USA is crazy for touting a malaria treatment or the President of Madagascar is crazy for touting an herbal treatment. What isn't being shared is that the Madagascar cure **is** a malaria treatment. Artesunate, isolated from *Artemisia annua*, has been used for over 40years and it could help but it is not new, nor is it the invention of Madagascar. The latter is likely a less refined product but should be approached with similar scepticism as all miracle cures.

Security Threats

Crime: The national curfew in Kenya is a security measure that accompanied the COVID-19 control measures to mitigate the impending rise in crime. Nonetheless, **reports of burglaries and muggings have increased significantly**, and it remains to be seen if the vacant houses of those who were evacuated have proven vulnerable.

Reports of runners and other pedestrians being mugged at gunpoint have gone from rare to commonplace.

Residential staff provide a primary means of intelligence for such attacks. Many of the household staff employed by expats and wealthy Kenyans live in slums and will have increased financial pressures from other members of a family or community; they also serve as a COVID vector to import the disease from slum to household.

Armed robberies, muggings, and burglaries will continue to increase as the control measures remain in force and the negative economic impact of the pandemic compounds.

Civil Unrest: There have been a number of protests since the COVID control measures took effect at the end of March. Protests of the control measures will become more frequent and larger if the population does not see the impact of the disease but only suffer the impact of the control measures. In early April, it was reported that the police enforcement of the measures killed more people than the disease. Governments must be wary of the perception that "the cure is worse than the disease" becoming more popular.

Armed Conflict: 2 months ago, this was very unlikely, but as tensions rise and blame is cast across borders, there is potential for small scale skirmishes to erupt. Regionally, 'lighting fires in your neighbour's backyard' has been a political tool used to some effect, so it remains possible but unlikely. Follow ACLED for updates on the violence as a result of COVID and other reasons.

Terrorism: The control measures in place are ideal to foment resentment in a population who provide a captive audience for radicalisation. The Kenyan Government has closed off the predominantly Somali neighbourhood of Eastleigh in Nairobi as well as Mombassa old town;

both of which are predominantly Muslim. Regardless of intention, angry captive minds will be vulnerable to influence and it is unlikely that Al Shabaab and/or ISIS will miss the opportunity to exploit angry youth.

Hazards. COVID will not increase the likelihood of car accident or other hazardous event however it will degrade the ability to respond to such a situation, as the recent water cut to Nairobi and the nationwide power outage demonstrated. As the outbreak spreads, the ability of ambulances to respond may be hampered by their response to COVID. On the positive side, with traffic significantly reduced, the ability for other emergency services is enhanced in the short to medium term. If and when the outbreak increases, those services are likely to suffer manpower shortages.

Effect on All Risks

No risk will be unaffected by COVID spread and subsequent response. The situation will either effect the likelihood or consequence of any significant risk manifesting. This will be from the likelihood of being mugged on a walk down a previously safe path, to the ability of a doctor to respond in a sterile environment to a child's oral abscess.

What happens Next?

The Return to a the 'New Normal'?

As the world starts a phased reopening, significant restrictions will remain in place. There is no vaccine and although there an there is promise in antibody testing, large scale global implementation will take time. Any treatment takes months, or years, to test and no pharmaceutical company will risk serious side-effects of a vaccine to go unnoticed before widespread implementation; they can't risk another thalidomide. What will become rapidly evident as capacities and policies develop is whether the numbers in East Africa are correct, there are two possible outcomes:

1. The control measures are very effective, the numbers of infections are correct, and East Africa will have the numbers down very low soon. This will require sustained national isolation as the infection works its way through other populations around the world (flattening the curve, not ending it) as any reintroduction would require the same control measures. This is the approach New Zealand has taken. It is very unlikely that there is the will or capacity to do this.
2. The control measures are not as effective, and the reported numbers don't reflect the actual situation. This is would allow life to return to normal sooner than the former option however it will be at the cost of antibody tests and the credibility of the East African medical community. This is more in keeping with WHO Africa forecasts that anticipate a slower and longer spread of COVID, a naturally flattened curve, if you will.

The future of international travel:

The first step for travel to recommence is airports at both ends opening for a **financially viable** flow of traffic; if the London Heathrow is still closed for arrivals from Africa, KQ102 cannot leave Nairobi. Moreover, airlines will not see the route as financially viable if flights aren't close to full. Considering the quarantine measures in Kenya and in the West, it is unlikely that tourists are going to take 5 weeks of holiday to spend 4 in quarantine (2 at either end) for a one

week Safari. According to the Kenya Tourism Board's most recent performance report, tourism makes up 74% of arrivals, Europe and Americas making up about 32% of that. Q3 of 2020 will likely see some of the larger carriers returning to flights in the region but they are likely to be less frequent and expensive until demand regularises and that could take well into 2021. And even when travel capacity returns, it is likely that demand will remain low as business realise that they can work effectively via online conferencing rather than flying people around as demonstrated during the lockdown. European countries and beyond will likely demand assurance that passengers have had an antibody tests or similar, and impose distancing and it is unlikely that JKIA will develop required capacities to satisfy partner countries in the immediate future. The EU has issued a COVID-19 Aviation Health Safety Protocol that will be a guide for what we should anticipate.

The earliest bookable flights are:

- British Airways: London, 1 July
- Swiss International: Zurich, 14 June
- KLM: Amsterdam, 9 June
- Qatar Airways: Doha, 16 June
- Emirates: Dubai, 1 July

Kenya Security Recommendations

Advice from the previous report remains extant (Annex C).

Think about your security before leaving the house: This is relevant everywhere, as the London metropolitan police say: "If you have it on show, expect it to go" If you are a pedestrian/runner, routes near roads that allow for a quick getaway are obvious hotspots, that is why the foot paths on the Waiyaki/ Redhill Bypass are preferred by muggers. And don't advertise the fact that you're oblivious to your surroundings by having white earphones leading to a $1000 phone on your arm.

Follow the rules: Avoid using race, wealth, or perceived status as a reason not to conform to laws. Wearing a facemask might be uncomfortable for now but one can only be accustomed to wearing by wearing it. No one became stronger by looking at weights… and traffic is better when we all follow the rules.

Prepare for further localised lockdown: Lockdowns in Eastleigh and Mombasa came with relatively little warning. This response is likely to be repeated in the face of other clusters of cases. If you live in a high population density area, this should be anticipated.

Stay active and positive: A healthy body and a positive state of mind can do a lot to make you feel better, even when ill. At the beginning of work-from-home controls, many people were out and active in Nairobi and numbers have visibly dropped away. This often becomes a self-perpetuating cycle where once active, you're more likely to remain active and once sedentary, you're less likely to start an activity the next day.

Get to where you want to be: COVID is not going away in the near-to-medium term. International travel is infrequent and difficult so international clients who have chosen to remain in country should do so with the understanding that embassies and airlines may not continue to put on special flights. **Plan to be immobile until September.**

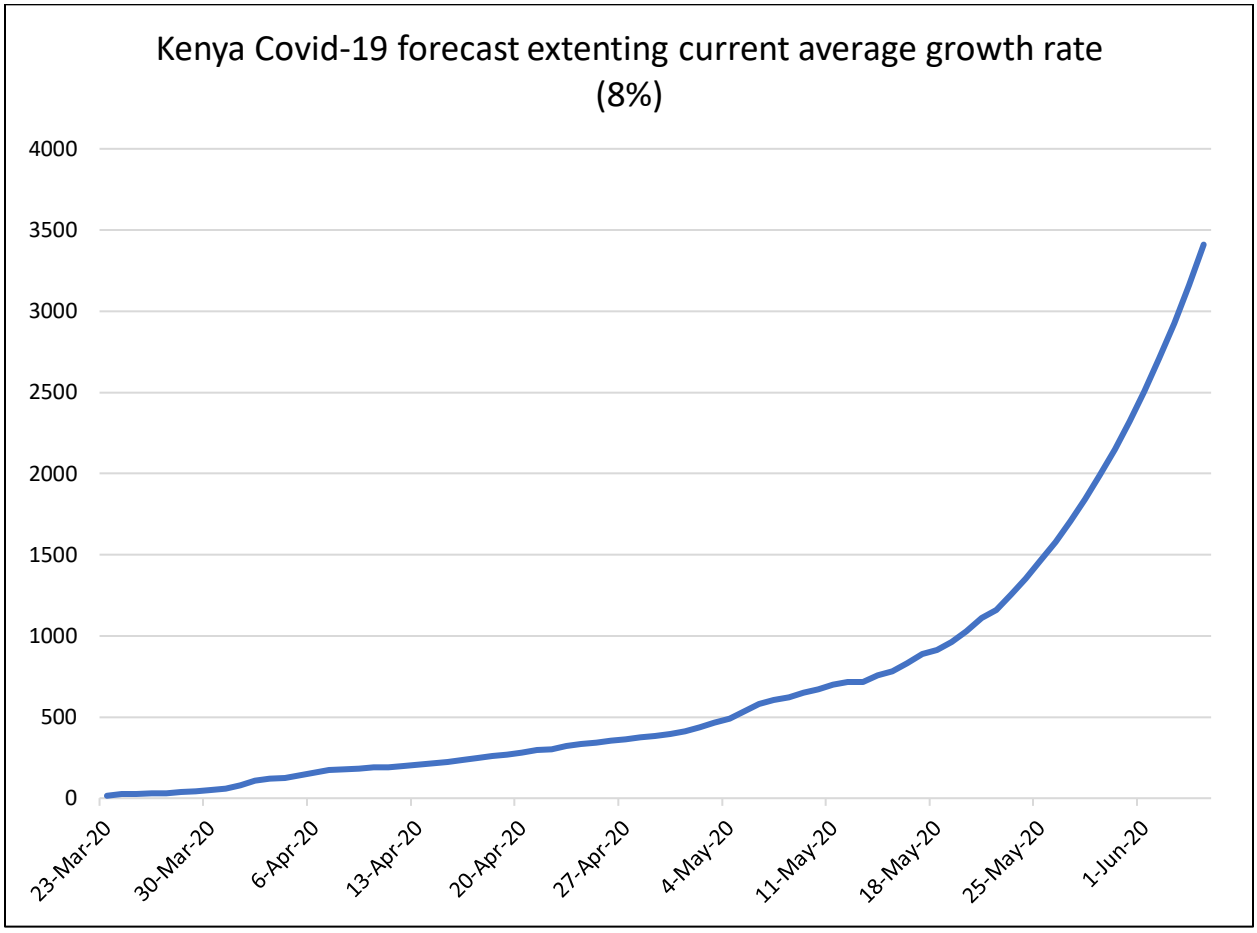
Kenya Conclusion

Forecasting anything is difficult but as more information becomes available, outcomes become more or less likely. The score of a football match might be difficult to predict before kick-off

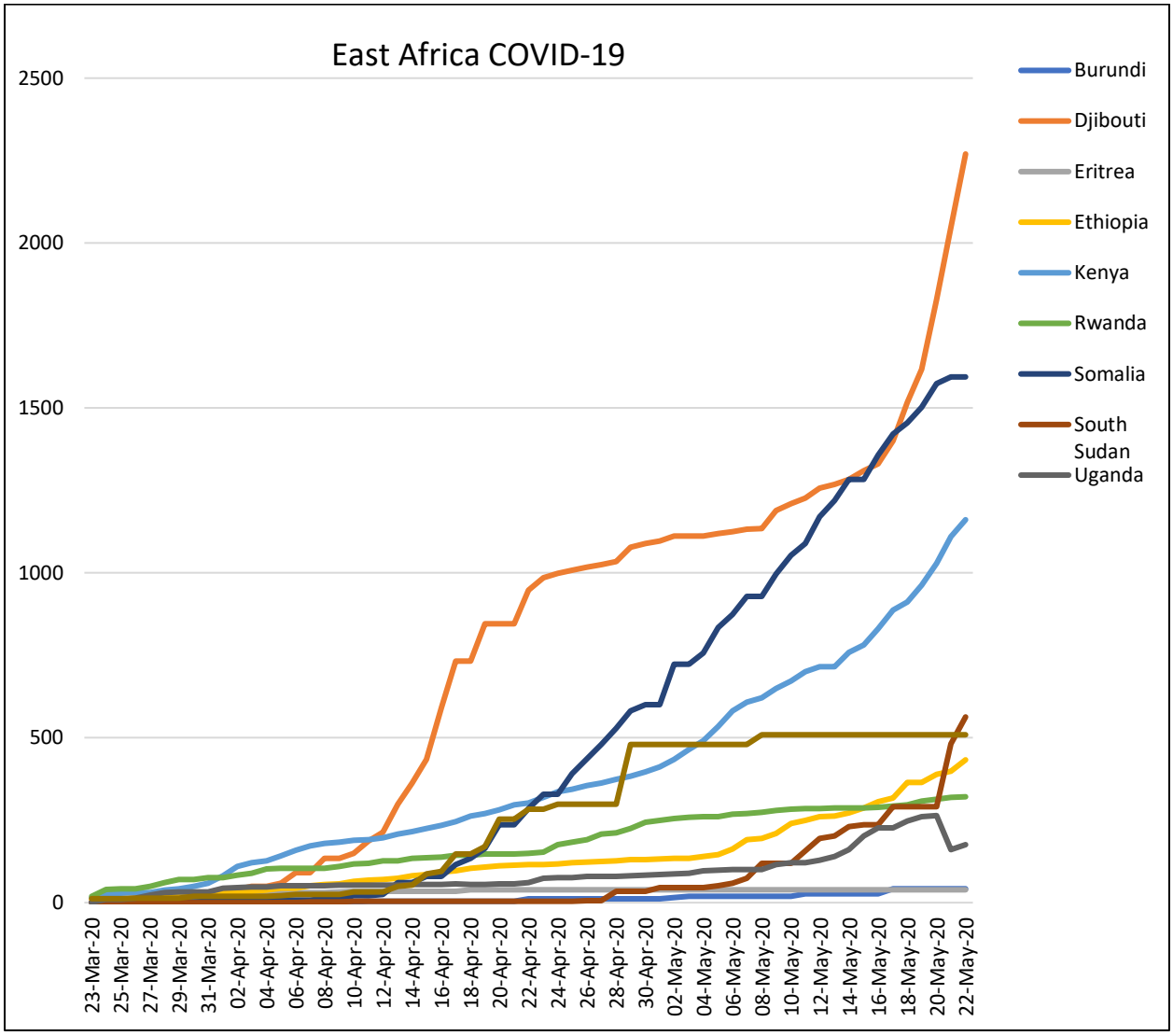
but when one teams is up by 1 in the first 20min, the odds change; if they are tied at half-time, it remains difficult but if one team is winning by 3 in the last 5 minutes, the outcome is more predictable. The world is at half time and up 3-1; we think we have a pretty good idea of what is going to happen, but it is far from certain. The curve of cases in Kenya is looks to be turning upwards away from the arithmetic growth thus far and towards the exponential growth seen elsewhere. Increasing in testing appears to be connected to an increase in cases (no surprise) but with widespread testing is likely to display a situation that is incongruous with government rhetoric so far and response will have to change from forced localised quarantines as mild cases surpass capacity.

Kenya Forecast

Kenya is increasing testing capacity as quickly as possible but the number of tests in the two months since last reporting is barely half of what the UK aims to achieve on a daily basis, noting that Kenya has 85% of the population of the UK. Increase in cases is correlated the increase in testing meaning: 'the more you look, the more you find'. So far, the average increase in case from 24 March to 22 May is 8%. If that is to carry forward for two weeks, the curve of cases looks like this:



East African Regional Insights



Burundi: 42 Confirmed Cases - Presidential Elections held 20 May, with little social distancing in effect. Ejected 4 WHO officials with little explanation 12 May. Burundi is again facing foreign currency reserve shortages and COVID commerce trends are likely to exacerbate pressures. The country has little capacity to deal with a significant outbreak and no willingness to accept external support. Propaganda is strong and honest local journalists live in fear so even if the situation gets bad, news will travel slowly and be muted.

Djibouti: 2270 Confirmed Cases - A small coastal country of less than 1m on a shocking trajectory. After a rampant rise in April, control measures appear to have slowed the trend. Djibouti holds strategic importance for a number of countries that have military ports there but mostly for Ethiopia who, as a landlocked country, use it as a primary port of import. Ethiopia is very concerned about importing cases however the commercial railroad remains open.

Eritrea: 39 Confirmed Cases – Eritrea went from 0 to 39 in 38 days and then claims to have isolated all cases until recovered. Eritrea has declared itself "virus free" whereas in reality, Eritrea stopped reporting cases once the increase was identified. In competition with Burundi for the title of "Africa's hermit kingdom" there is little in the way of freedom and even less in the form of credible information that makes it out of the country. Eritrea should be avoided until some objective assessment emerges of the severity of the situation and the capacity of the country to deal with it. On 15 May, the country declare itself virus-free as the 39 cases recovered and at the same time implemented wide-scale surveying for symptoms.

Ethiopia: 433 Confirmed Cases – Africa's second most populous country has a fraction of the cases of its neighbours. Lead by an authoritarian regime known for shutting down internet access and restricting humanitarian access, the government tightly controls the flow of information. It is highly probable that numerous undetected cases cross the north east border with Djibouti and cases are multiplying without being registered or publicised.

Rwanda: 321 Confirmed Cases – The most advanced country in the region but one that is still led by an authoritarian regime that controls information. Rural communities have little trust in the government and the healthcare system is weak, so the reporting of cases and isolation is difficult because there is a reluctance to report initially and then unwillingness to isolate once identified.

Somalia: 1594 Confirmed Cases – A war torn country in the midst of a 25-year internationally supported conflict with no institutional integrity whatsoever. Somalia has a negligible level of organic capacity and will depend entirely on foreign assistance to manage such a large-scale issue. Sadly, donors and supporters are busy with managing larger conflicts in their own countries while western leaders criticise the agencies that would be providing critical assistance to such underdeveloped countries.

South Sudan: 563 Confirmed Cases – The world's youngest country has been in a state of civil war since its second birthday in 2013. South Sudan boasted more vice presidents (5) than ventilators (4). Like Somalia, South Sudan is entirely dependent of foreign assistance to function. Meanwhile, UN peacekeepers protect 200,000 internally displace people in camps (POCs) that are *de facto* slums with high population density and poor sanitation. There are several alarming stories emerging from the country in the past week:

- **South Sudan has gone from 74 to 563 cases in 14 days!**
- COVID has reached the POCs and further spread is nigh-on inevitable
- Fighting continues in Central Equatoria where a significant number have been displaced
- Several members of the COVID task force have tested positive for COVID including VP R Machar, the leader of one side of the original 2013 government fracture.

Tanzania: 509 Confirmed Cases – After a sharp rise of cases in late April, Tanzania stopped reporting. Therefore, they have not had a new case since 8 May because, according to the logic of the Tanzanian government: if you don't look, it doesn't exist. President Magufuli has been quoted as saying a papaya has tested positive for COVID insinuating that it is all rubbish.

Uganda: 175 Confirmed Cases – Uganda is not known for transparency or institutional strength except when it's executing fraud on an astonishing scale. Uganda may have benefited from some level of preparedness for Ebola in neighbouring DR Congo but numbers tell a different story: 1 to 44 in 10 days; 44 to 56 in 20 days; 101 to 264 in 12 days. The middle period was the opportunity to trace, test, and isolate but that does not appear to have been successful. As the curve steepens, Uganda will continue with control measures, but it remains to be seen if they take a more propagandist approach to report like Tanzania, Burundi, and Eritrea. Other factors effecting Uganda is the high refugee population and its landlocked geography. Refugee influxes from DR Congo were the import vector for Ebola and remain a concern for other diseases as well and once COVID starts spreading in the refugee communities of South Sudanese, Congolese, Burundian, Somalian and others, it will be difficult to control and prevent from spreading to the wider population due to the nature of the refugee integration model of Uganda. With regard to its geographical status, Uganda is beholden to neighbouring Kenya for importing the majority of its wears. Although conflict is unlikely, border closures and skirmishes can lead to protracted disputes that could affect Uganda's ability to respond to the pandemic. Following a presidential directive, Uganda has deducted foreign drivers from its total, reducing it by over 100, standing at 175.

Regional Trends: Burundi and Ethiopia shut down the internet and social networks, Rwanda's president has been in power for 20 years while Uganda's has been in power for 34! Two war-torn countries and another president who thinks the whole thing is a conspiracy and that a papaya tested positive. Strong-man regimes, high levels of corruption, low levels of healthcare; these are the trends in the region that make it impossible to assess the severity of the pandemic or effectiveness of the response. Family-centric culture makes people more reliant on social structures rather than government institutions, so this makes mild symptoms much less likely to self-report and then pass on the disease. Moreover, the corruption in quarantine has been identified as a significant deterrence for self-reporting.

Kenya has blamed Tanzania and Somalia; Uganda has blamed Kenya; Ethiopia has blamed Djibouti… As the disease was not endemic to East Africa, it is true that countries can look elsewhere for its source however blaming other countries now merely acts as a distraction for lack of governmental strategy.

This does not imply incompetence on behalf of the citizens of East African nations, rather a lack of buy-in by the people, and leadership that offers little to be trusted. When the West is doing much to discredit international organisations (WHO), citizens are left with no trusted sources of information and guidance.

The revised WHO forecast notes that the toll of COVID will have second order effects on the treatment of other illnesses that are endemic to the region. For example, people with fever, a symptom of malaria, may avoid seeking treatment for fear of quarantine, and risk death instead. Vaccination rates are going down due to restricted access for agencies and rural citizens while a plague of desert locusts further threatens food security for an already stressed region.

It is difficult to see the positive results of any of these circumstances and plans should be made for negative outcomes however those should not be seen as inevitable; we wear a seatbelt 'just in case' rather than in anticipation of an accident. Likewise, it is wise to be prepared for the situation to degrade but remain positive that capacities coalesce and the impact of COVID is minimised.

Annex A: Raw Data for Kenya Analysis

Source: Kenyan Ministry of Health

Date	Tested	Confirmed	Deaths	Recovered	tests/day	cases/day	Death/ day	Recovered/day
23-Mar-20	177	15	0	0				
24-Mar-20	259	25	0	0	82	10	0	0
25-Mar-20	273	28	0	1	14	3	0	1
26-Mar-20	596	31	1	1	323	3	1	0
27-Mar-20	752	31	1	1	156	0	0	0
28-Mar-20	833	38	1	1	81	7	0	0
29-Mar-20	833	42	1	1	0	4	0	0
30-Mar-20	1005	50	1	1	172	8	0	0
31-Mar-20	1239	59	1	1	234	9	0	0
01-Apr-20	1539	81	1	2	300	22	0	1
02-Apr-20	2201	110	3	4	662	29	2	2
03-Apr-20	2563	122	4	4	362	12	1	0
04-Apr-20	2863	126	4	4	300	4	0	0
05-Apr-20	3462	142	4	4	599	16	0	0
06-Apr-20	4277	158	6	4	815	16	2	0
07-Apr-20	4973	172	6	7	696	14	0	3
08-Apr-20	5278	179	6	9	305	7	0	2
09-Apr-20	5588	184	7	12	310	5	1	3
10-Apr-20	6192	189	7	22	604	5	0	10
11-Apr-20	6683	191	7	24	491	2	0	2
12-Apr-20	7459	197	8	25	776	6	1	1
13-Apr-20	8133	208	9	40	674	11	1	15
14-Apr-20	8827	216	9	41	694	8	0	1
15-Apr-20	9630	225	10	53	803	9	1	12
16-Apr-20	10334	234	11	53	704	9	1	0
17-Apr-20	10784	246	11	53	450	12	0	0
18-Apr-20	11449	262	13	60	665	16	2	7
19-Apr-20	13239	270	14	67	1790	8	1	7
20-Apr-20	13872	281	14	69	633	11	0	2
21-Apr-20	14417	296	14	74	545	15	0	5
22-Apr-20	15124	303	14	83	707	7	0	9
23-Apr-20	15792	320	14	83	668	17	0	0
24-Apr-20	16738	336	14	94	946	16	0	11
25-Apr-20	17492	343	14	98	754	7	0	4
26-Apr-20	17992	355	14	106	500	12	0	8
27-Apr-20	17992	363	14	114	0	8	0	8

28-Apr-20	18089	374	14	124	97	11	0	10
29-Apr-20	18597	384	15	129	508	10	1	5
30-Apr-20	20268	396	17	144	1671	12	2	15
01-May-20	21702	411	21	150	1434	15	4	6
02-May-20	22897	435	22	152	1195	24	1	2
03-May-20	23780	465	24	165	883	30	2	13
04-May-20	24792	490	24	173	1012	25	0	8
05-May-20	25806	535	24	182	1014	45	0	9
06-May-20	27370	582	26	190	1564	47	2	8
07-May-20	28002	607	29	197	632	25	3	7
08-May-20	29430	621	29	202	1428	14	0	5
09-May-20	31041	649	30	207	1611	28	1	5
10-May-20	32097	672	32	239	1056	23	2	32
11-May-20	32938	700	33	251	841	28	1	12
12-May-20	33916	715	36	259	978	15	3	8
13-May-20	35432	715	40	281	1516	0	4	22
14-May-20	36918	758	42	284	1486	43	2	3
15-May-20	39018	781	45	284	2100	23	3	0
16-May-20	39018	830	50	301	0	49	5	17
17-May-20	43712	887	50	313	4694	57	0	12
18-May-20	44851	912	50	314	1139	25	0	1
19-May-20	46784	963	50	358	1933	51	0	44
20-May-20	49405	1029	50	366	2621	66	0	8

Annex B: Raw Data for East Africa

Accumulated total to date.

Source: Johns Hopkins University and the World Health Organisation

Date	Burundi	Djibouti	Eritrea	Ethiopia	Kenya	Rwanda	Somalia	South Sudan	Tanzania	Uganda
23-Mar-20	0	3	1	11	15	19	1	0	12	1
24-Mar-20	0	3	1	12	25	40	1	0	12	9
25-Mar-20	0	11	4	12	28	41	1	0	12	9
26-Mar-20	0	11	4	12	31	41	1	0	13	14
27-Mar-20	0	11	4	12	31	50	1	0	13	23
28-Mar-20	0	14	6	16	38	60	3	0	14	30
29-Mar-20	0	18	12	21	42	70	3	0	14	33
30-Mar-20	0	18	12	23	50	70	3	0	19	33
31-Mar-20	2	30	15	26	59	75	5	0	19	33
1-Apr-20	2	30	15	29	81	75	5	0	20	44
2-Apr-20	3	40	22	29	110	84	5	0	20	45
3-Apr-20	3	49	22	35	122	89	7	0	20	48
4-Apr-20	3	50	29	38	126	102	7	0	20	48
5-Apr-20	3	59	29	43	142	104	7	1	22	52
6-Apr-20	3	90	31	44	158	104	7	1	24	52
7-Apr-20	3	90	31	52	172	105	8	2	24	52
8-Apr-20	3	135	31	55	179	105	12	2	25	52
9-Apr-20	3	135	33	56	184	110	12	3	25	53
10-Apr-20	3	150	34	65	189	118	21	4	32	53
11-Apr-20	5	187	34	69	191	120	21	4	32	53
12-Apr-20	5	214	34	71	197	126	25	4	32	54
13-Apr-20	5	298	34	74	208	127	60	4	49	54
14-Apr-20	5	363	34	82	216	134	60	4	53	55
15-Apr-20	5	435	35	85	225	136	80	4	88	55
16-Apr-20	5	591	35	92	234	138	80	4	94	55
17-Apr-20	5	732	35	96	246	143	116	4	147	56
18-Apr-20	5	732	39	105	262	144	135	4	147	55
19-Apr-20	5	846	39	108	270	147	164	4	170	55
20-Apr-20	5	846	39	111	281	147	237	4	254	56
21-Apr-20	5	846	39	114	296	147	237	4	254	56
22-Apr-20	11	947	39	116	303	150	286	4	284	61
23-Apr-20	11	986	39	116	320	153	328	5	284	74
24-Apr-20	11	999	39	117	336	176	328	5	299	75
25-Apr-20	11	1008	39	122	343	183	390	5	299	75

26-Apr-20	11	1018	39	123	355	191	436	6	299	79
27-Apr-20	11	1025	39	124	363	207	480	6	299	79
28-Apr-20	11	1035	39	126	374	212	528	34	299	79
29-Apr-20	11	1077	39	130	384	225	582	34	480	81
30-Apr-20	11	1089	39	131	396	243	601	35	480	83
1-May-20	11	1097	39	133	411	249	601	45	480	85
2-May-20	15	1112	39	135	435	255	722	46	480	88
3-May-20	19	1112	39	135	465	259	722	46	480	89
4-May-20	19	1112	39	140	490	261	756	46	480	97
5-May-20	19	1120	39	145	535	261	835	52	480	98
6-May-20	19	1124	39	162	582	268	873	58	480	100
7-May-20	19	1133	39	191	607	271	928	74	480	101
8-May-20	19	1135	39	194	621	273	928	120	509	101
9-May-20	19	1189	39	210	649	280	997	120	509	116
10-May-20	19	1210	39	239	672	284	1054	120	509	121
11-May-20	27	1227	39	250	700	285	1089	156	509	121
12-May-20	27	1256	39	261	715	286	1170	194	509	129
13-May-20	27	1268	39	263	715	287	1219	203	509	139
14-May-20	27	1284	39	272	758	287	1284	231	509	160
15-May-20	27	1309	39	287	781	287	1284	236	509	203
16-May-20	27	1331	39	306	830	289	1357	236	509	227
17-May-20	42	1401	39	317	887	292	1421	290	509	227
18-May-20	42	1518	39	365	912	297	1455	290	509	248
19-May-20	42	1618	39	365	963	308	1502	290	509	260
20-May-20	42	1828	39	389	1029	314	1573	290	509	264

Annex C Forecast and Recommendations for Nairobi from previous reporting: 23 March 2020

Outcomes

Most Likely Scenario. COVID spreads in a similar fashion as seen elsewhere in the world, with the speed and virulence seen in the less controlled societies like Italy. Medical systems are overwhelmed and COVID victims are forced to stay at home regardless of severity. As economic pressures mount, restrictions on business and behaviour will be loosened. At some point in this sequence, a concept of 'acceptable loss' of life will have to be recognised as a counterpoint to a disintegration of social fabric and collapse of the entire economy. The end result is significant loss of life but with an economy that still functions.

Best Case Scenario. The spread of the disease is halted with the current measures in place and the 15 cases are isolated, they recover, and global isolation measures prevent an ingress of any further cases. No flights in or out for at least 6 weeks from the time of writing and other major urban centres resolve the spread and institute health checks for travellers.

Worst Case Scenario. A significant degradation in social cohesion leading to widespread violence and crime. If COVID takes hold in the slums, home to 2.5 million people, it will spread quickly and have significant impact. A 4m x4m dwelling can house up to 8 people. There is no means of slowing the spread and even with 1% mortality, it results in 25,0000 deaths. Governments will be beholden to respond but lack capacity leading to a further breakdown. Military and police, already self-interested, fracture along divided loyalties. This is more likely in the event that the government lacks cashflow or the bureaucratic capacity to pay officials on time.

Recommendations

Maintain perspective. This is the beginning of this period in Nairobi and an altered lifestyle should be anticipated for months, if not years. As Prof Medley put it "Anyone who tells you they know what is going to happen in the next six months is wrong." Medical officials are doing their best with what they have, nothing more can be demanded or expected. Expect the situation to worsen and hope that it doesn't; pessimistic and safe is better than optimistic and sick.

Limit the spread. Follow the WHO guidance on protecting yourself[3]. Maintain social distancing measures in wash your hands thoroughly and frequently. Consider enhanced measures for immune-compromised loved ones such as pouring bottle of water into a glass before drinking in order to limit handling of objects brought in from outside the controlled environment.

Prepare for isolation. Plan as you would if members of your household have already been exposed. Have sufficient stocks to remain at home without external interaction for 14 days in order to allow the disease to run its course. There is a very good chance of survival but there is no need to enhance the suffering unnecessarily.

[3] https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

Support those that depend on you. Guards, cleaners, gardeners, cooks, and other staff depend on their employer and are in that category of at-risk people who live hand-to-mouth. They are your link to the outside world and your greatest weakness if mistreated. Over the coming months, expect family members of staff to die of COVID and expect that they will look to their employer for guidance and support. Don't turn an asset into a vulnerability.

Have a plan to leave. This is the least likely outcome, but no one puts a seatbelt on expecting to get into an accident. As the airport closes have an idea of what your options are and what your employer can do. There is a great deal of misplaced faith in the capacity of embassies and the UN to fly over the horizon and pluck citizens for the mouth of catastrophe. Keep ½ tank of fuel in the car and know where the nearest safe space is (police post, etc). If you leave your home for a lengthy period, do so with the assumption that it is likely to be robbed. Remove or secure all valuables and if needs be, leave what can be stolen in the near the entrance to alleviate the need to ransack the place.

South Suite, Ragnall House, 18 Peel Road

Douglas, Isle of Man, IM1 4LZ

24 hr Global Contact: +44 207 754 3555

www.msrisk.com

Directors

S.J. Bingham, P.A. Crompton, P.O.J. Tracy

Registered in the Isle of Man No. 007435V