

April 2020



The State House

Kumba Mbye,  
Marie Thylén & Momodou K. Dibba

Policy Analysis Unit  
Department of Strategic Policy and Delivery  
Office of The President  
State House, Banjul

# FOCUS ON COVID-19 RESPONSES

## ABSTRACT

The circumstances around the novel coronavirus keeps evolving on a daily basis. The speed at which the virus spreads is much faster than the traditional rate of policy making. One recent study that influenced policy circles is the [Imperial College of London's report on the impact of an uncontrolled pandemic \(March 2020\)](#). Using an extremely simplified linear estimation of the Imperial College dynamic model, we present estimates on a regional level under different assumptions regarding contagion and effectiveness of social distancing measures, based on the analysis of social-economic profiles using the Integrated Household Survey (IHS) 2015/2016. These estimates are then used for analytical reasoning regarding the effectiveness and feasibility of social distancing measures. Our findings reveal that Brikama, Greater Banjul, Mansakonko and Basse are the most vulnerable regions in terms of number and share of population belonging to risk groups. In these regions it is important to both take proactive measures to protect these people but also to be prepared to meet healthcare needs should the virus spread as there would likely be a high number of critical cases.

## INTRODUCTION<sup>1</sup>

The emergence of the novel coronavirus disease (COVID-19), first in Wuhan, China, has posed severe public health challenges worldwide, leading to the World Health Organisation declaring it a pandemic in March 2020. History has been littered with epidemics and pandemics but the magnitude of the current one has not been seen since the 1918-1920 Flu (also known as the Spanish Flu), lament commentators. The ramifications have far reaching consequences on the economy with both health and financial impacts on millions of people.

Although the Gambia is yet to experience a surge in cases, with only four confirmed cases at the time of writing this Focus Note, the looming threat could be catastrophic. The average infection rate (in epidemiological parlance  $R_0$ ) globally has been around 3. That is every one person infected person infects 3 other people. Even with less conservative  $R_0 = 2.4$ , the danger of a surge in community infection will be extreme bearing in mind our socio-economic setting. The danger brings back memories of the 1869 Cholera Outbreak in Bathurst (former name of Banjul), that posed extreme difficulties for the health system at the time. COVID-19 will pose similar challenges to our current healthcare system if it moves from imported cases to community transmissions as have been observed in other countries.

Based on scientific evidence, the people mostly at risk of COVID-19 are the elderly and people living with existing health conditions. The Gambia currently only has 3.5% elderly in the population (above 65 years), but the share of people in a morbid condition is higher than the share of elderly in all regions. Therefore, looking at the number of people aged 65+ and the number of morbid people combined may give a better idea of how big the risk groups are, both nationally and regionally (although one should bear in mind that there is likely some overlap between these groups). In this Focus Note, less emphasis is placed on the outcomes of the simulations on the possible trajectory of the infections, but rather on the overall policy guidelines on our state of preparedness when moving from one stage of the outbreak to the other. To allow for more targeted regional policies, should the need arise, the analysis focuses at regional levels across the country.

---

<sup>1</sup> The considerations presented in this Policy Note belongs to the authors and does not necessarily reflect the views of the Department of Strategic Policy and Delivery or the Office of the President.

The Gambia currently only has 3.5% elderly in the population (above 65 years), but the share of morbid people is higher than the share of the elderly in all regions. The two groups constitute the High Risk group.

## LESSONS LEARNED ON POLICY MEASURES

### ITALY: THE VENETO VS THE LOMBARDY EXPERIENCE

Northern Italy is experiencing one of the worst healthcare crisis in the world with regards to the coronavirus outbreak. Within Northern Italy there are two regions that provide an opportunity to compare the impacts of differences in timing, enforcement and comprehensiveness of policy responses. The Lombardy region has been overwhelmed by the coronavirus cases and is beyond struggling with the number of deaths. The Veneto region on the other hand has managed to flatten the curve with at least one city not detecting any new cases since March 13<sup>th</sup>.<sup>2</sup>

The two regions are very similar in terms of demography and economy: both wealthy with a relatively old population, although Lombardy is more densely populated and has more than twice the number of inhabitants<sup>3</sup>. This allows for a comparison of policy responses as many external factors are controlled for due to the similarity.

On February 21<sup>st</sup>, two cases of COVID-19 were detected in the Veneto region and 14 in Lombardy. Two days later, 10 cities in Lombardy and one city in Veneto were put in lockdown with residents not allowed to go in or out. By end February, Veneto had closed its schools and cancelled public events including religious gatherings. They were also quick to launch comprehensive testing (including home-testing reducing the number of infected people who stepped outside to go to a medical facility) and tracing which allowed them detect the virus even with people who did not show symptoms (more than half the cases) and put the people who tested positive in strict quarantine while testing their families. To understand the scale of the testing it can be noted that Veneto has expanded its testing to 11 000 people per day.<sup>4</sup> Whereas Lombardy imposed similar lockdown measures, closing all non-essential shops and urging people to stay inside, they had problems enforcing these measures and people were still socializing out in public and visiting nearby cities. Furthermore they were only testing and

<sup>2</sup> <https://www.voanews.com/science-health/coronavirus-outbreak/italys-veneto-region-test-everyone-coronavirus>, retrieved 30 March 2020

<sup>3</sup> <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/veneto>; <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/lombardy>; <https://ugeo.urbistat.com/AdminStat/en/it/demografia/dati-sintesi/veneto/5/2>; <https://ugeo.urbistat.com/AdminStat/en/it/demografia/dati-sintesi/veneto/5/2>

retrieved 30 March 2020

<sup>4</sup> <https://www.ft.com/content/0dba7ea8-6713-11ea-800d-da70cff6e4d3>,

retrieved 30 March 2020

These experiences suggest that Veneto's proactive response in terms of extensive testing, tracing and strict enforcement was more successful in reducing the spread

quarantining people who showed symptoms, which in the aftermath might have led to more than half of the cases going undetected and spreading the virus. By March 24<sup>th</sup> Veneto and Lombardy reported 2704 and 16 200 cases respectively.<sup>5</sup>

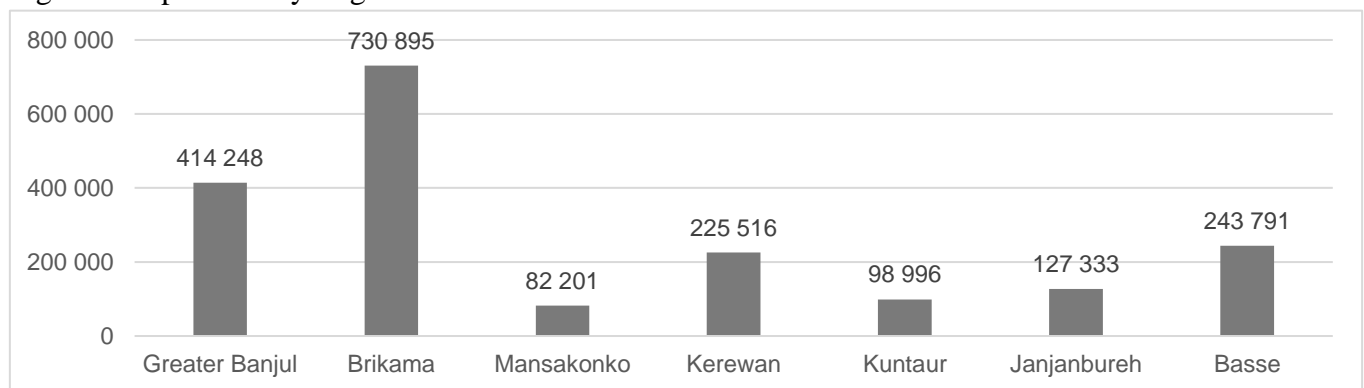
While these experiences suggests that Veneto’s proactive response in terms of extensive testing, tracing and strict enforcement was more successful in reducing the spread there is one important factor not taken into account. When Lombardy detected its first cases the count was already 14, implying that these people might have already spread the virus to a lot more people than Veneto’s two initial cases – especially as Veneto’s evidence suggests that more than half of the infected people were asymptomatic. With regards to Italy’s policy response in general there is another important potential flaw to learn from. Italy announced the regional lockdowns before they were implemented. In Northern Italy this effectively led the regional lockdowns to follow the outbreaks of the virus rather than proactively preventing it. The announcement of lockdowns in Northern Italy also led lots of potentially infected people to leave the region for the more vulnerable southern areas of the country.<sup>6</sup> Avoiding this situation calls for a proactive, predictive and systematic policy response.

## REGIONAL MEASURES IN THE GAMBIAN CONTEXT

Regional lockdowns have less severe economic consequences and allows funding, food supplies, and health efforts to be channeled to a smaller area and be used more efficiently to remedy the impact of the lockdowns. Enforcement of the lockdown will also likely be easier and more effective in a smaller region. However, the efforts required in each region and the suitability of different measures will vary between regions, among other things depending on the socio-economic and demographic profile of the region.

Using data from the Integrated Household Survey 2015/16 we analyse the impact of regional lockdowns based on the socio-economic and demographic profiles of the different regions in The Gambia.

Figure I. Population by Region.

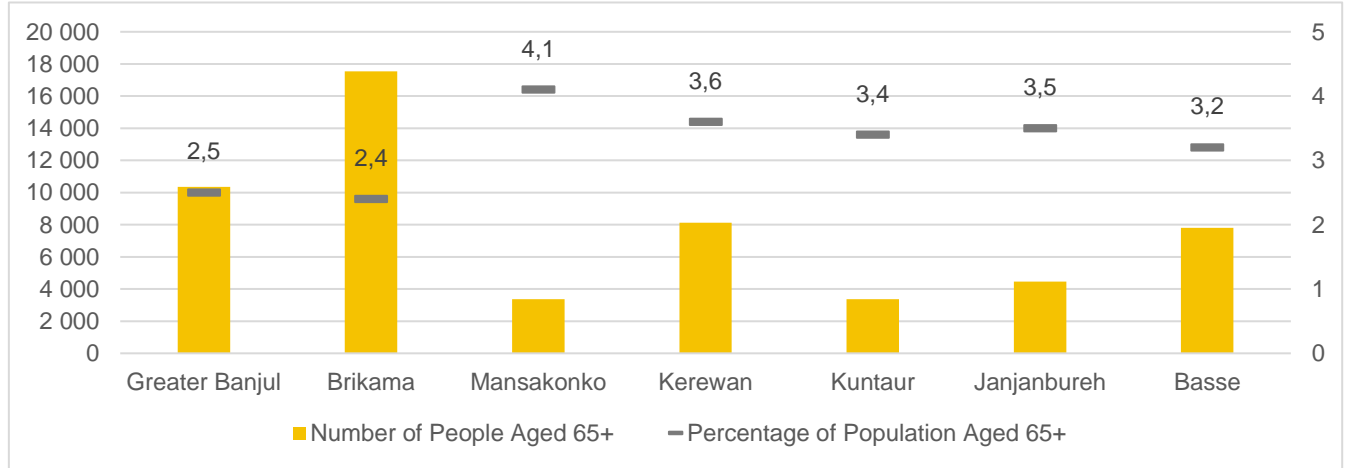


<sup>5</sup> <https://www.businessinsider.com/italy-provinces-aggressive-coronavirus-response-leads-to-fewer-cases-2020-3?r=US&IR=T>, retrieved 30 March 2020

<sup>6</sup> <https://hbr.org/2020/03/lessons-from-italys-response-to-coronavirus>, retrieved 30 March 2020

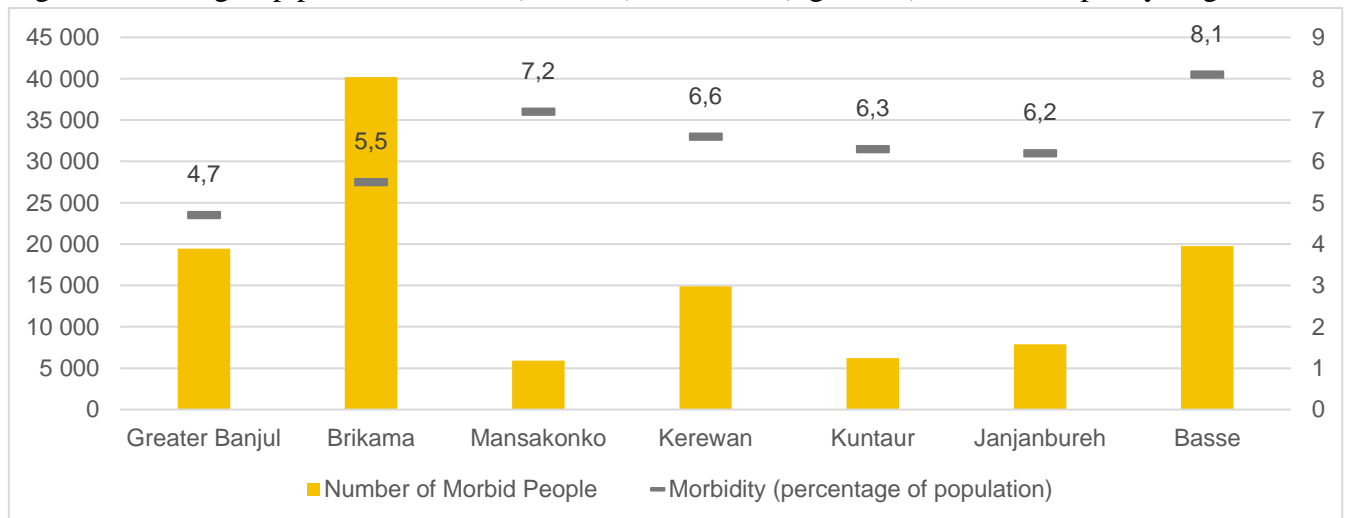
The population in different regions gives an idea of how many people would be directly affected by lockdowns in each region. Brikama and Greater Banjul (BCC and KMC) are the two most populated regions, and also the two most densely populated areas. Imposing measures in these regions will affect almost 1.15 million people, more than half of the country’s population. Nonetheless, some measures might be necessary, especially in the regions with a lot of people belonging to the risk groups that are more vulnerable should they be infected by the coronavirus.

Figure II. Risk group profile: Number (left axis) and Share (right axis) of People Aged 65+ by Region.



The figure above shows that the share of the population aged 65 or above is generally low in all regions (between 2.4 and 4.1). The region with largest share of the population belonging to this risk group is Mansakonko, where 4.1 percent would be especially likely to have severe or lethal cases of the coronavirus should they be infected. However, in terms of number of elderly people, Brikama is the region that is most vulnerable with about 17 500 elderly, followed by Greater Banjul with a bit more than 10 000 elderly. While the elderly population in The Gambia can be considered small, there are also other risk groups that needs to be considered. Moreover, while people over 65 are considered a risk group in developed countries, the general health of people in The Gambia is likely lower, and therefore the elderly risk group “age limit” could be lower than 65. Figure III on morbidity illustrates this point.

Figure III. Risk group profile: Number (left axis) and Share (right axis) Morbid People by Region.

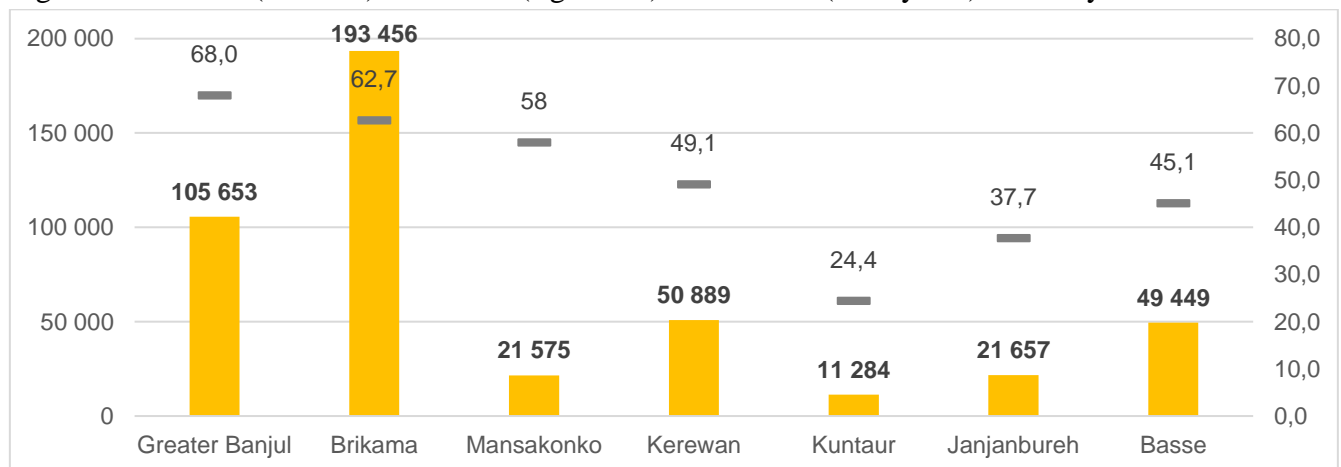


In terms of morbidity Mansakonko and Basse are especially vulnerable as their morbidity rates are the highest in the country (7.2 and 8.1 percent respectively). However, Brikama is again the region with the highest number of people belonging this risk group, with about 40 000 morbid persons. Similarly, Greater Banjul and Basse has high numbers of morbid persons, around 20 000 in each region.

Brikama, Greater Banjul, Mansakonko and Basse are the most vulnerable regions in terms of number and share of population belonging to risk groups. In these regions it is important to both take proactive measures to protect these people but also to be prepared to meet healthcare needs should the virus spread here as there would likely be a high number of critical cases.

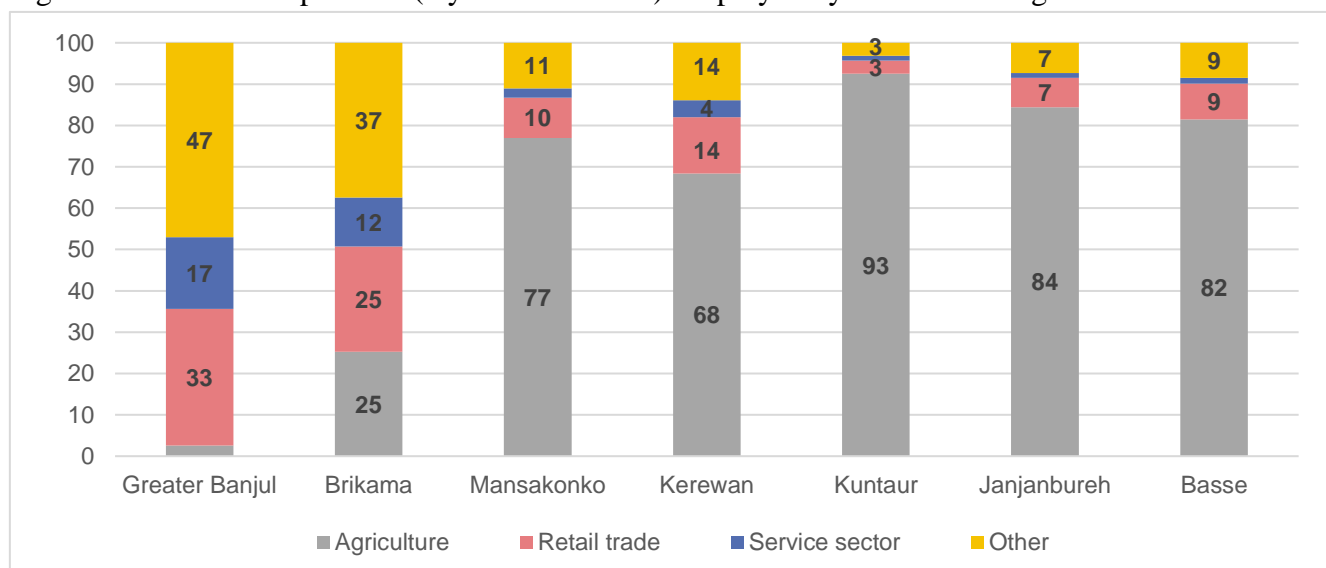
In response to protecting these risk groups and the general population against the direct health effects of the virus many countries, including The Gambia, has introduced several measures aimed at reducing social interactions. These measures include urging people to stay at home and not go outside other than when it is absolutely necessary, limiting public gatherings, closing schools and non-essential businesses, etc. However, these policy responses will in turn also have impacts that needs to be taken into consideration.

Figure V. Number (left axis) and Share (right axis) of Children (3-18 years) currently In School.



One of the first measures taken in several countries, including in The Gambia, has been to close the schools. As can be seen in Figure V this affects many children currently attending school. Most severely affected by this measure is Greater Banjul and Brikama, where approximately 300 000 children are unable to go to school. The Ministry of Basic and Secondary Education has provided for alternative learning methods which includes the use of TV and radio as a medium to dispense learning and they are currently making provisions for distance learning materials. Although this type of home learning can partially serve as a substitute, if the pandemic continues for a prolonged period of time (as it likely will), the knowledge gap and loss of human capital can have long term consequences for these children's income when they become older and hence the whole Gambian economy and the country's level of human capital. Furthermore, a prolonged period with no school may lead to some children dropping out of school, further decreasing the school attendance rate, which in most regions is already below 50 percent (Kerewan, Kuntaur, Janjanbureh, Basse).

Figure VI. Share of Population (7 years and above) Employed by Sector and Region.



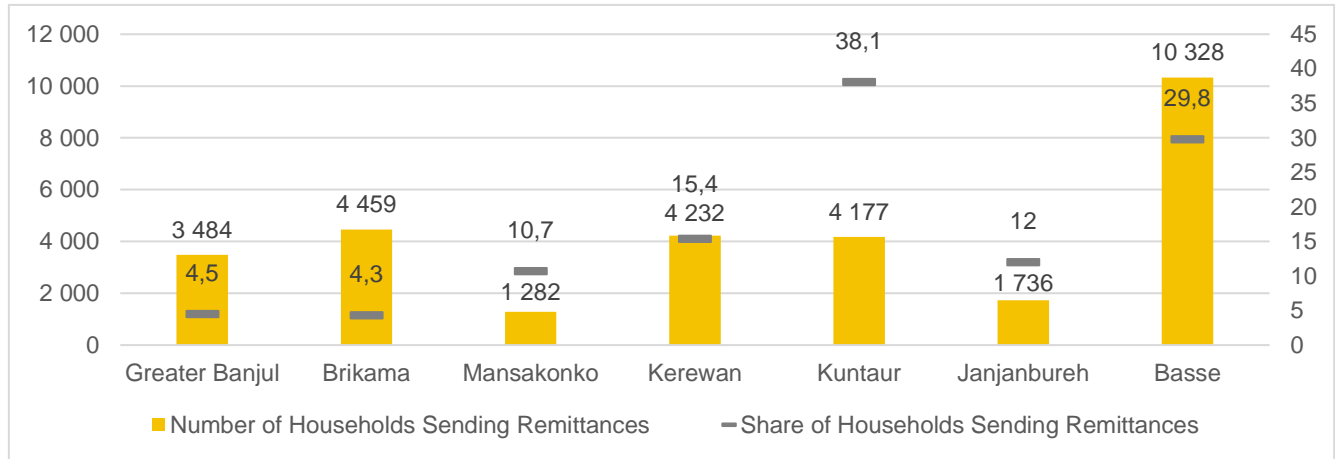
\*Other sectors include manufacturing, mining, public administration, education, health, electricity and water supply, and international actors (NGOs, Foreign government institutions, etc.).

Besides the closure of schools, there are other measures that needs to be evaluated in terms of impact on both personal lives and the economy at large. Figure VI shows the share of the population employed in different sectors by region. As evident from the chart; agriculture, retail and services are the sectors that employ most people in The Gambia. Closing down non-essential businesses may therefore affect a large share of the working population and lead to great income losses, which in turn will reduce tax revenues and therefore government resources. On an individual level, the severity of income losses vary greatly, but for a significant number of people it could lead to them not affording accessing necessary healthcare or even buying food to feed their families.

While agriculture may be less affected by lockdown measures, as some people have their plot of land next to their homes and can therefore still access them, selling the crops may prove more difficult and people working on the farms from other households may not be able or allowed to go to work in a stricter lockdown scenario.

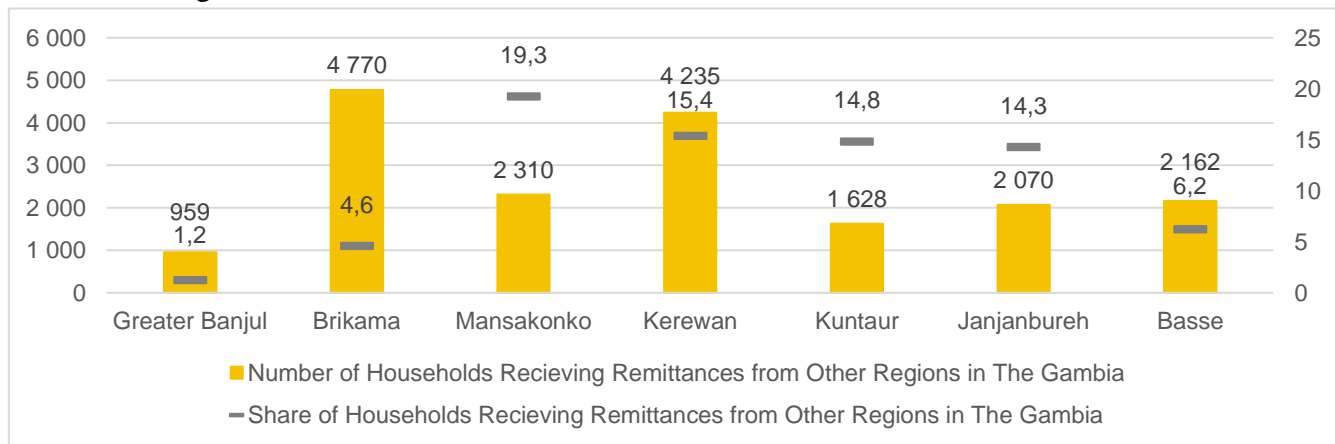
Although some of the businesses that falls under the retail trade category may be classified as essential and therefore allowed to operate, the retail sector will likely be severely impacted by lockdown measures. Similarly to retail, almost the entire service sector would likely have to close in a lockdown scenario. However, in The Gambia where many jobs in the service sector are related to tourism, the income losses may already be caused by the air traffic suspension (both by The Gambia but perhaps even more from other countries). As can be seen in Figure IV, closing non-essential businesses will have most severe economic consequences in Brikama and the Greater Banjul where 37 and 50 percent of the working population respectively are employed in the retail and service sectors. Moreover, besides the direct impacts of income loss on the employee and its household, there are others that will likely be affected by it as well.

Figure VII. Number (left axis) and Share (right axis) of Households Sending Remittances.



Both by a national or a regional lockdown, loss of income may not only affect the employee and its direct family, but also extended family and friends. Almost 40 percent of households in Kuntaur, 4177 households, and 30 percent in Basse, 10 328 households, send remittances. A lockdown or closure of non-essential businesses might imply a loss of this source of income for the receivers in The Gambia or abroad. Figure VIII below shows that almost 20 percent of households in Mansakonko, 2310 households, and 15 percent of households in Kerewan, 4235 households, receive remittances from other regions in The Gambia. These peoples could potentially lose this stream of income should the senders be unable to work and earn an income due to a national lockdown with closure of non-essential businesses.

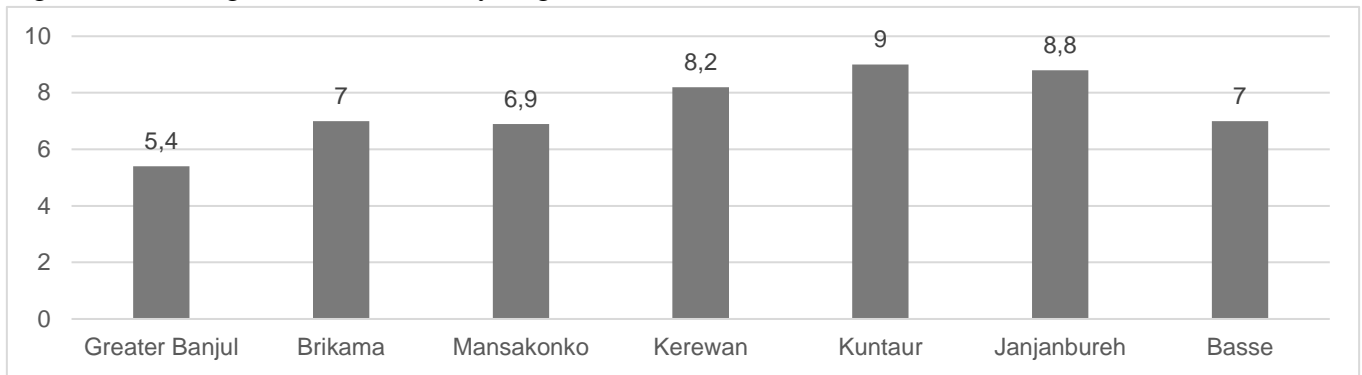
Figure VIII. Number (left axis) and Share (right axis) of Households Receiving Remittances from Other Regions in The Gambia.



However, before imposing measures to reduce the spread of the coronavirus there is a need to assess the efficiency of these measures, both on a national and on a regional basis. Social distancing measures to stop, reduce and slow down the spread of the coronavirus are taking place in almost all countries across the world. In The Gambia public gatherings has been restricted to 10 people, all beaches have been closed, public transport are directed to only transport half the number of passengers that are allowed by law, and non-essential businesses have been ordered to close to reduce social interactions. The question is whether social distancing is actually plausible in a country like The Gambia?

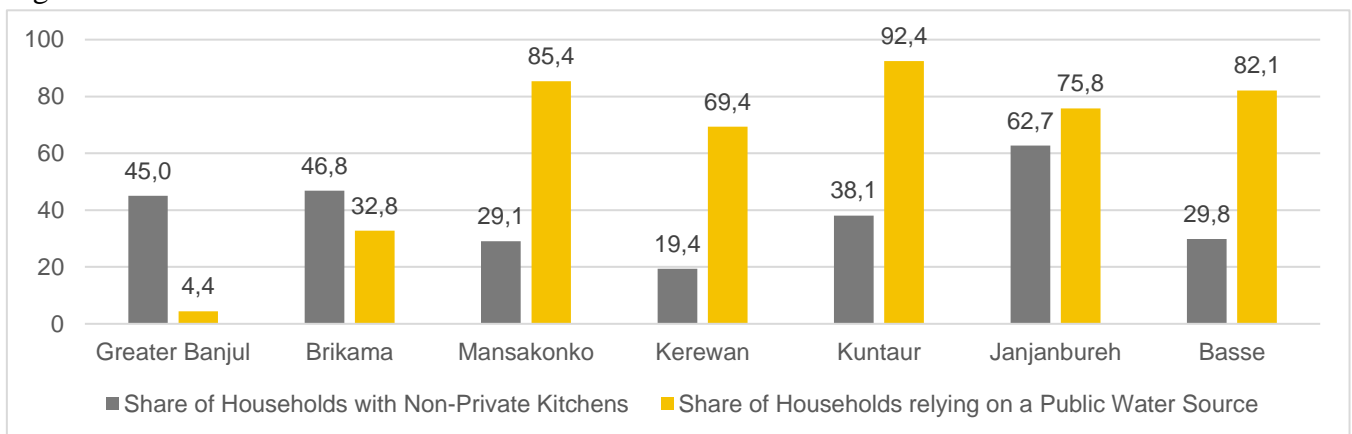


Figure IX. Average household size by Region.



If we assume that an infected person will at least spread the virus to the others in the same household, Figure IX shows that one infected person in Kuntaur will likely spread it to at least 8 other people on average, regardless of existing lockdown or social distancing measures. In general, the average household sizes suggest that social distancing measures in The Gambia may not be as effective as in other countries where it is more common to live alone or in smaller households of 2-4 people. Moreover, besides large household sizes, there are other factors that imply social distancing may not be feasible in the Gambian context.

Figure X. Share of Households with Non-Private Kitchens and Reliance on a Public Water Source.



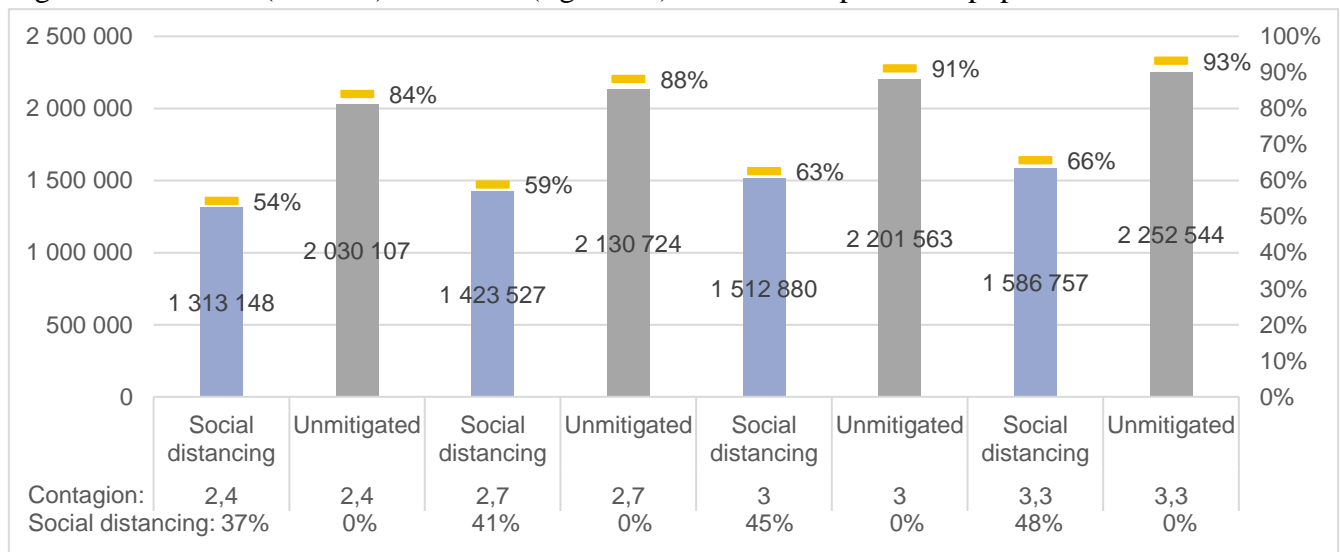
Despite spreading the virus to family members in the same household, the infected person is likely to spread it to its neighbours, especially if the person is in the asymptomatic stage. Figure X shows that a large share of households lack private kitchens and water sources, meaning that they are forced to use shared or communal options for pure survival and sanitation reasons. In 5 out of 7 regions around 70 percent of households or more rely on a shared public water source, with Kuntaur having the highest share – 92.4 percent. Due to the necessity of food and water, even an infected person will likely have to disobey social distancing rules.

All in all, the average household sizes and the reliance on shared facilities suggests that social distancing measures are likely to be unfeasible or less effective on most regions of the country.

## SIMULATION ANALYSIS

Researchers at Imperial College London has developed a dynamic model to estimate the number of infected persons, critical cases, people in need of hospital care, and deaths in each country under different assumptions. The model allows for different assumptions regarding contagion (the number of people one infected person will pass on the virus to), policy responses (no policy responses or imposed social distancing measures) and the effectiveness of social distancing measures (how many percent people manage to reduce their social interaction by). Figure XI and XII below shows their estimations for The Gambia on a national level using this dynamic model.

Figure XI. Number (left axis) and Share (right axis) Infected People of the population on National Level.

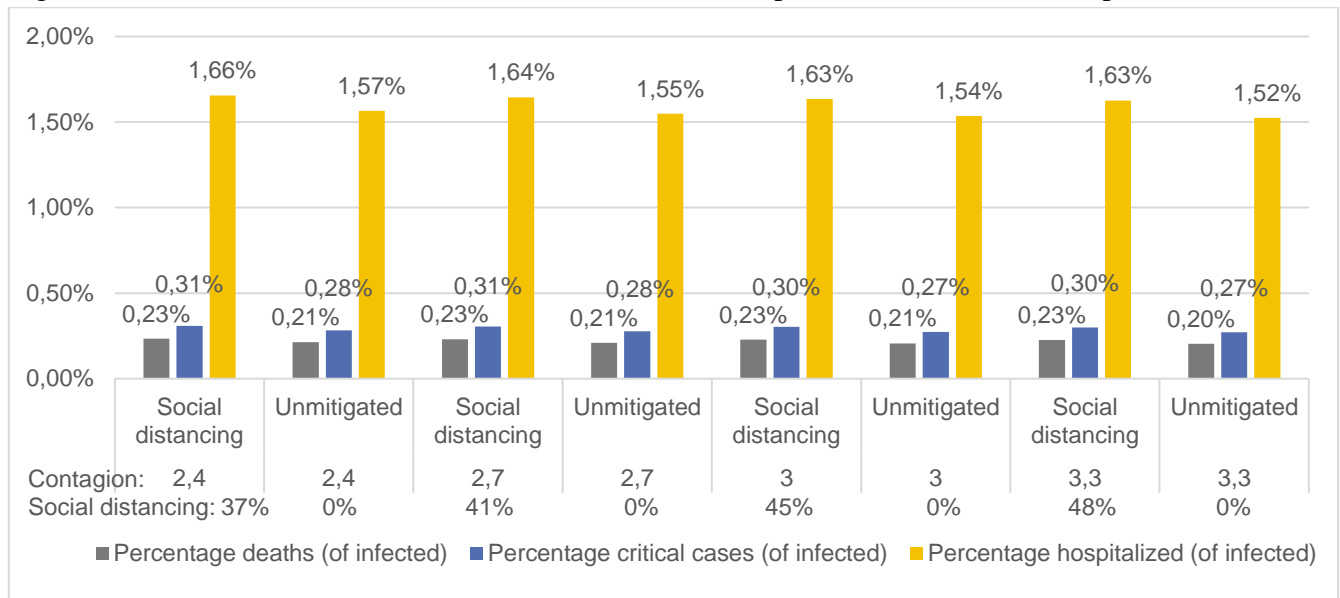


Source: Simulations from Imperial College London.

In Figure XI above we see the estimated number of infected people under different assumptions. The contagion shows how many people one infected person is assumed to pass on the virus to. For each contagion value there is one scenario where the state impose social distancing measures and one where the spread of the virus is left unmitigated, that is: without any measures. When social distancing measures are imposed they are assumed to not be a 100 percent effective, but rather they reduce social interactions by the percentage shown at the bottom of the figure.

According to the estimates by Imperial College London there is a lot to be gained in terms of infection rates by imposing social distancing measures. Left unmitigated between 84-93 percent of the population may be infected, depending on contagion and social distancing assumptions. By comparison, if social distancing measures are in place 54-66 percent are estimated to be infected, roughly around 70 000 people less. However, the study assumes fairly effective social distancing measures, with interaction reduced by 37-48 percent. As discussed earlier this may not be feasible in the Gambian context.

Figure XII. Share Deaths, Critical Cases and in need of Hospital Care of Infected People.



On a national level, the estimated share of infected people that will die from the coronavirus is around 0.2 percent and the share that will be critical cases is around 0.3 percent, regardless of the different assumptions. These numbers are very low and also suggests that there is nothing to be gained by social distancing measures. On the contrary, this model gives a slightly higher share of deaths, critical cases and people that will need hospital care when social distancing measures are introduced. The explanation is that the difference in number of infected people between the mitigated and unmitigated case is much greater than the difference in number of deaths, critical cases and people that will need hospital care. Thus, when expressed as a percentage the share will be bigger in the mitigated case by comparison to the unmitigated case. However, there is no significant difference and as stated the shares are generally very low. The share of people that will need hospital care is around 1.6 percent, which also is seemingly low, however for planning purposes one should keep in mind that this translates to around 29 000 persons.

Using an extremely simplified linear estimation of the Imperial College dynamic model, we below present estimates on a regional level under different assumptions regarding contagion and effectiveness of social distancing measures, based on the analysis of social-economic profiles in the previous section. As such we assume that social distancing measures are less effective and contagion is higher in the regions with larger household sizes and a vast majority of the population relying on shared kitchens and water facilities (Kuntaur, Janjanbureh, Mansakonko and Basse). Please note that these estimates are purely for illustrative purposes and should not be interpreted as an accurate projection of the spread of the coronavirus.

Figure XIII. Number (left axis) and Share (right axis) Infected of the Regional Populations.

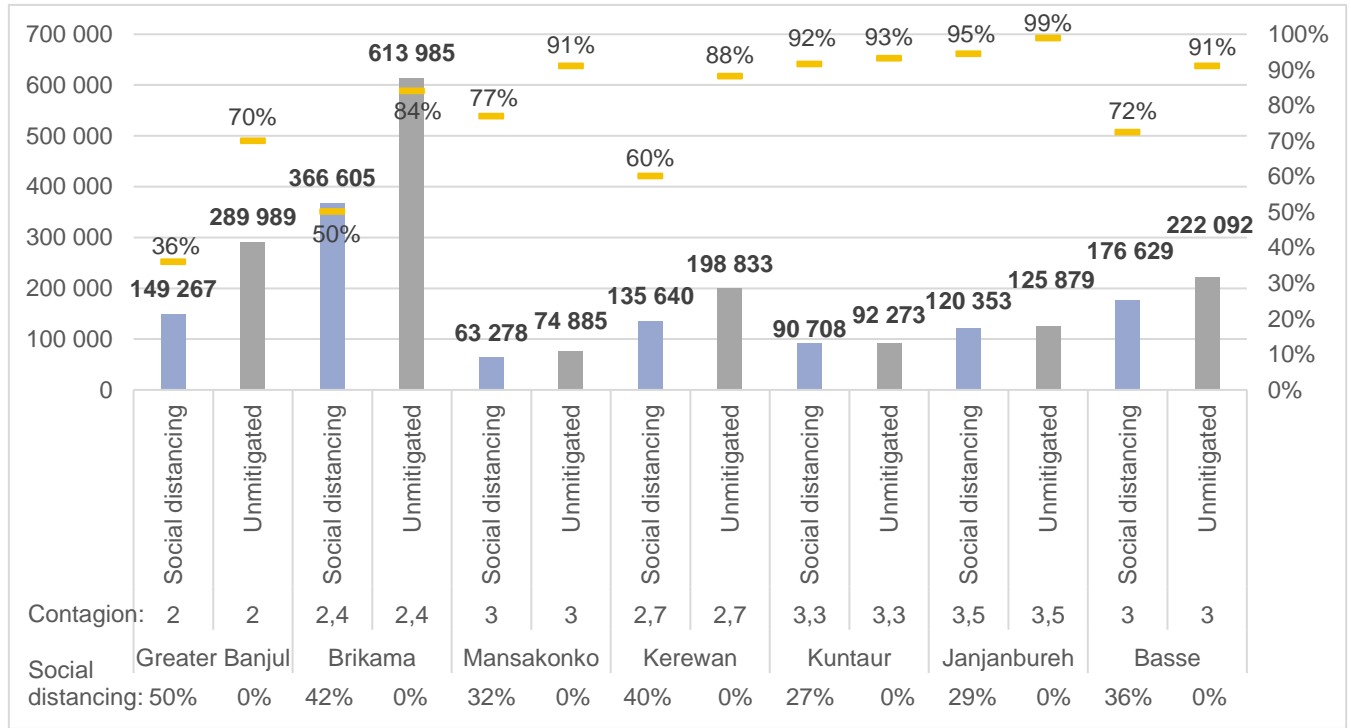
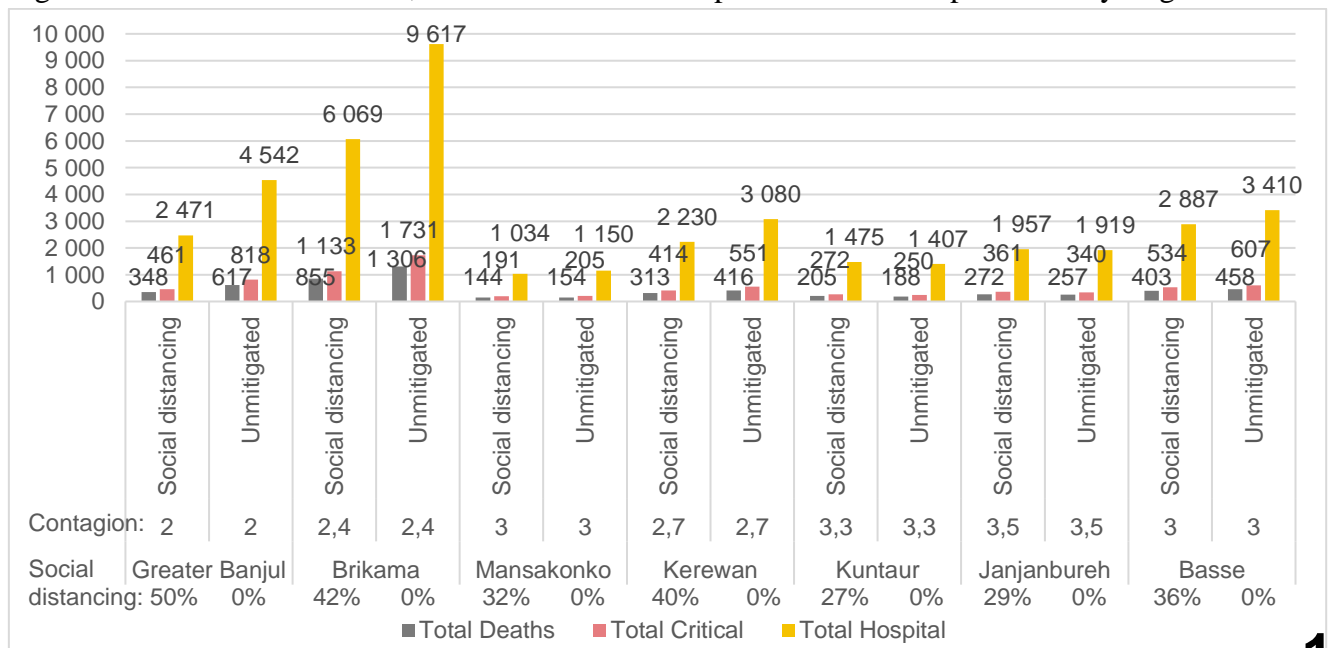


Figure XIII above shows that in regions where social distancing is somewhat feasible and the contagion rates are fairly low (Greater Banjul, Brikama and Kerewan) regional policy responses to reduce the spread of the virus could make a big difference in terms of the number and share of infected persons. This is true even in regions with intermediate contagion rates and less effective social distancing (Mansakonko and Basse). However, in the regions where contagion rates are higher than 3 and imposed measures reduce social interactions with less than 30 percent, there is not much to be gained by imposing social distancing or lockdown measures.

Figure XIV. Number of Deaths, Critical Cases and People In need of Hospital Care by Region.



Similar to the previous figure, again using an extremely simplified version of the Imperial College model, Figure XIV shows estimations of the number of deaths, critical cases and people in need of hospital care under the same assumptions.

This figure contains a lot of information. First of all, the difference in number of deaths in mitigated and unmitigated scenarios is very small, almost regardless of assumptions on efficiency of social distancing measures and contagion rates (except for in Greater Banjul and Brikama where reducing the spread can be more effective). The same observation can be made for critical cases – the difference between the mitigated and unmitigated scenarios is very small in essentially all regions. Secondly, in the regions for which social distancing measures is assumed to be somewhat efficient and where populations are fairly big (Greater Banjul and Brikama) there is a significant reduction in the number of people in need of hospital care when social distancing measures are introduced. However, in regions where social distancing is likely to be ineffective, the number of people needing hospital care is very similar whether you introduce measures or not.

All in all, the simulation exercise offers some insightful observations: (i) the efficiency of social distancing measures in reducing the number of infected persons and people in need of hospital care is highly dependent on the feasibility of social distancing; (ii) the feasibility of social distancing in this analysis is based on household size and reliability on shared kitchen and water facilities and vary between regions; and (iii) the share and number of cases that will cause death or develop into critical cases is generally low, regardless of social distancing measures or not.

## THE GAMBIAN POLICY RESPONSE

The closest comparison to the potential threat of COVID-19 in Gambian history is the Bathurst (previous name of Banjul) Cholera outbreak of 1869. The first non-pharmaceutical policy measure taken by Governor Patey, at the time, was confinement of people of Bathurst not to travel out to the Kombos.<sup>7</sup> This was later heightened to a complete lockdown of movement in and out of the city. Furthermore, all boats/ships bringing groundnuts and other cargoes from other harbours such as Georgetown, Kuntaur, Fatoto, etc. were stopped.<sup>8</sup> Due to the pressure on the healthcare system, two temporary hospitals were established for the dispensing on medicines to patients.<sup>9</sup>

Similar to the above, the government has taken several policy measures since the outbreak of the pandemic and confirmation of the first case in the country. The most pronounced being the closure of Banjul International Airport to all commercial flights. In addition, schools were ordered much earlier to be closed and all forms of public gatherings are now considered banned following the declaration of a State of Emergency in accordance with Section 34 of the Constitution of the Republic of The Gambia 1997, initially for 7 days, now extended to 45 days.

---

<sup>7</sup> National Archives, April 1869

<sup>8</sup> <http://thepoint.gm/africa/gambia/article/historian-ceesay-recalls-1869-cholera-epidemic-in-bathurst-to-fight-covid-19>, retrieved 8 April.

<sup>9</sup> Additional facts and clarifications provided by Historian Mr Hassoum Ceesay.

Following the declaration and in accordance with the Emergency Powers Act, 4 the following regulations have been affirmed by the National Assembly namely:

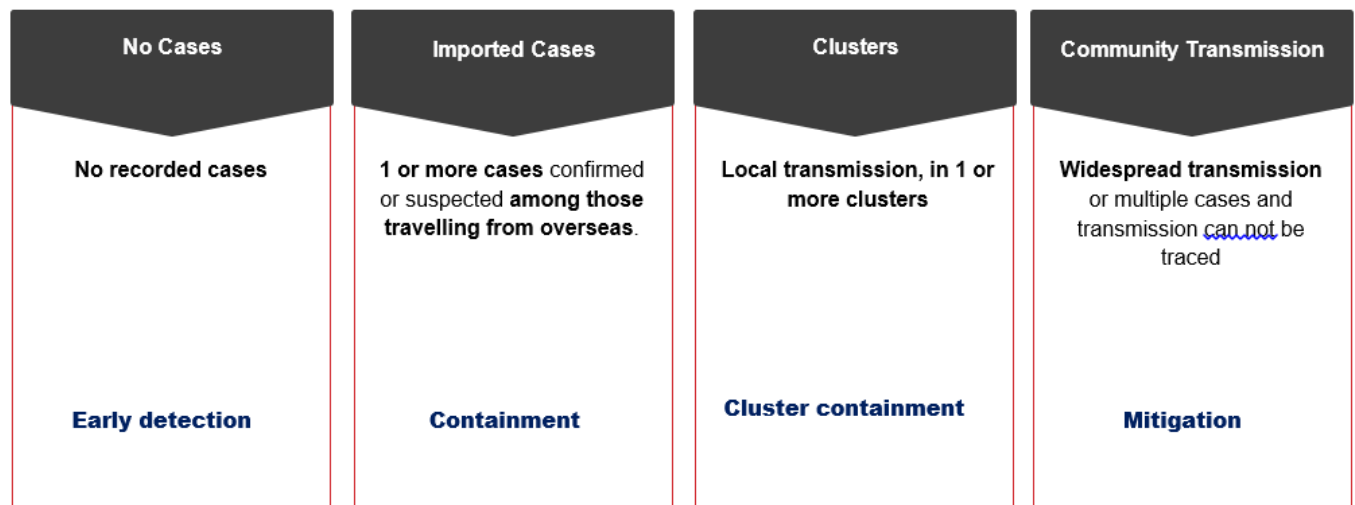
- I. Essential Commodities Emergency Powers Regulations 2020
- II. Restrictions on Open Markets and Shopping Areas Emergency Powers Regulations 2020
- III. Closure and Restrictions on Non-Essential Public Places Emergency Powers Regulation 2020
- IV. Restrictions on Public Transportation Emergency Powers Regulations 2020

The other natural policies that arose due to the policy measures were the quarantine, testing and isolation policy, all intractably linked. Based on data from the situation report on April 3<sup>rd</sup>, not all people that were quarantined were tested. A cumulative total of 212 persons were quarantined and 310 asymptomatic people with travel history to affected areas completed follow ups. However, only 134 were tested.

In view of the foregoing, the quarantine and testing policies needs review. As in the case study presented earlier on Veneto and Lombardy in Italy, massive testing of both symptomatic and asymptomatic people, traced to potentially have been in contact with infected people, was one of the major policy differences that led to success in controlling the surge in cases. In addition, the Gambian situation report data also revealed that not all people under quarantined were tested a second time before being released.

Empirical evidence on the coronavirus so far reveals that most countries go through different phases of the crisis, in accordance with Figure XV below.

Figure XV. Phases of an epidemic outbreak.



Current Position

Beginning from the third stage of cluster transmission, to community transmission, this stage has exhibited exponential growth of cases in most countries. Bearing in mind the socio-economic situation in the country, resulting to difficulties in social distancing measures, we believe most of the resources in the fight towards the COVID-19 should be geared towards suppression. The scenario analysis presented earlier revealed a stark deficit on the healthcare system in the event of any surge in cases. It is therefore prudent to strategize temporary hospital structures for isolation to cater for at least the best-case scenarios

in each region as was the case in the Cholera outreach mentioned earlier. For perspectives, the total number of hospital beds at national level is 2447 (GBOS, 2015).

In view of the impending monumental challenge, the best policy measure now is a massive test program to ensure early detection as depicted in Figure XV above. It could be recalled that half of the cases in Veneto, Italy were asymptomatic.

The extension of the State of Emergency with the associated partial lockdown will result in difficulties in the daily lives of Gambians. One of the most significant lessons learnt during the Cholera outbreak was the importance of fast support programs to the citizenry. The empowerment of the Office of the Vice President, through the National Food Security Council, to strategize this endeavour is timely. We strongly recommend they coordinate all forms of relief by government and/or support from partners. This will ensure that there is less fragmentation and the support reaches its intended targets.

Moreover, given the potentially severe consequences on both personal incomes, human capital, government resources and the Gambian economy by strict lockdown measures (including closure of non-essential businesses) and limited effectiveness of softer social distancing measures, it is our notion that evidence-based analysis, planning and preparedness for targeted regional measures is a more efficient response at this stage. National restrictions on shops and movement will damage the economy and social distancing measures are unfeasible in some parts of the country given large household sizes and dependency on shared facilities. Therefore these measures might cause more financial damage than it can make up for in reducing the spread of the coronavirus. Instead building preparedness for rapid regional responses (including extensive testing and contact tracing, strong enforcement of lockdown measures – especially not letting people leave or enter the region, and targeted support for the most vulnerable groups) would be a more appropriate response at this early stage, especially given the limited government resources that The Gambia have at hand.