

**EPHI, National Data Management Center for health (NDMC)
Quick update on COVID-19, 029**

This update summarizes	Ethiopia's COVID-19 situation update
	Global and regional burden of COVID 19
	Regional and global contributions of air pollution to risk of death from COVID-19
	Essential Lessons from the Coronavirus Pandemic
	Most Fatal Pandemic COVID-19 Outbreak: An Analysis of Economic Consequences

Ethiopia's COVID-19 situation updates

As of October 29, 2020, there were a total of 94,820 COVID-19 cases and 1,451 deaths across the country. Compared to the cases and deaths reported a week ago, the cumulative cases and deaths have increased by 3%. So far 49,886 cases have recovered from COVID-19 (Fig 1). Of the 43,796 active cases, 315 are critical. The total number of tests stands at 1,461,340 showing a 2% increase compared to last week.

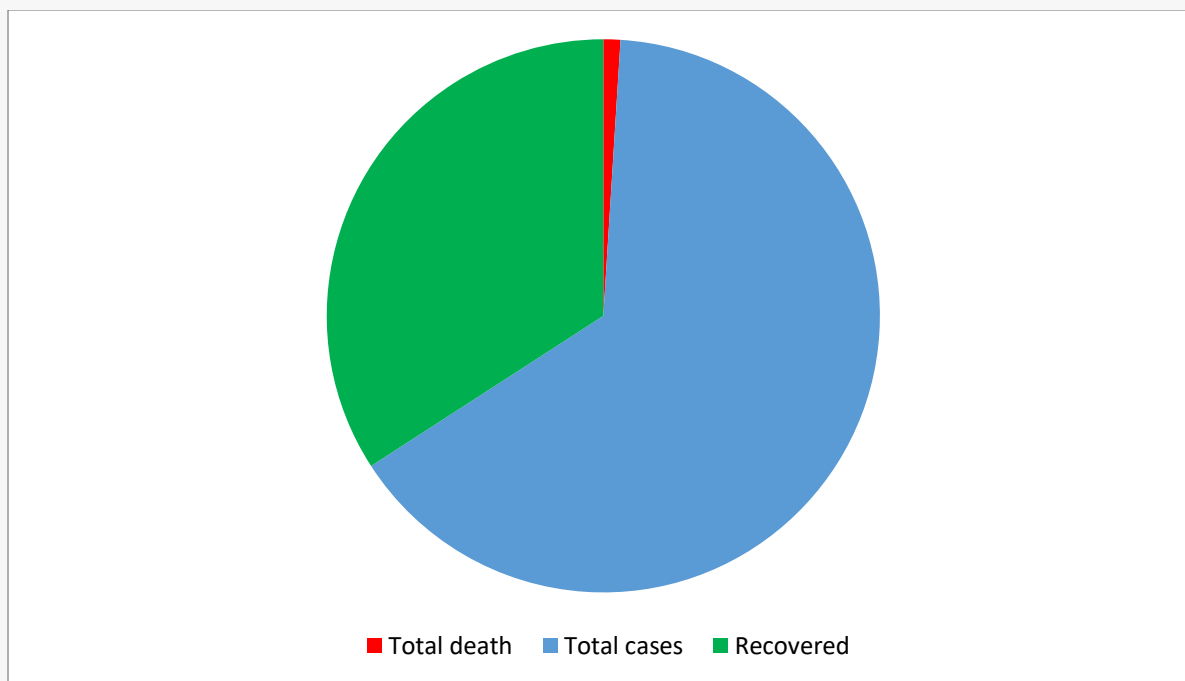


Fig. 1. Showing cumulative COVID-19 cases, recoveries and death as of October 29, 2020.

EPHI and FMOH COVID 19 response highlights of the week

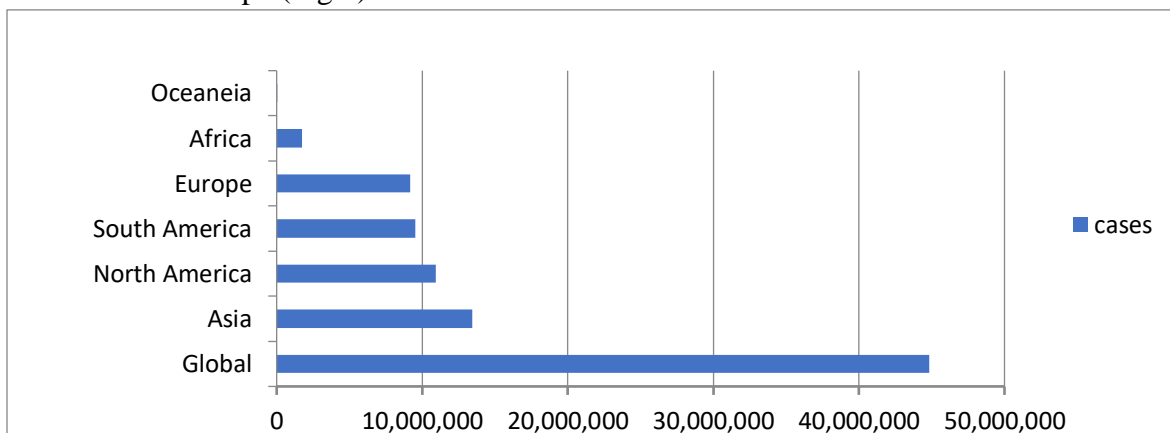
- Since Home Based Isolation and Care (HBIC) have started in Ethiopia, a total 26, 389 COVID-19 confirmed cases have been followed as of October 29, 2020. Of which, 19,981 recovered and 6,356 cases are currently on follow up. Five COVID-19 related deaths have been reported 240 cases have been transferred to treatment centers while, 193 cases have been transferred from treatment centers to HBIC.
- From Oct 23-25, 2020, three days comprehensive COVID-19 training were provided for 50 health professionals at Bishoftu town.
- On Oct 26, 2020, Orientation on COVID-19 prevention and control were provided for militaries in South Omo zone.
- From Oct 26-28, 2020 three days training were provided on COVID-19 Outbreak risk communication and community engagement Campaign Strategy for 20 professionals from different organizations at Bishoftu town.

References

- www.covid19.et/covid-19/
- Public Health Emergency Operations Centers (PHEOC), Ethiopia
- https://twitter.com/lia_tadesse

Global and regional burden of COVID-19

- Globally the total number of cases extends to 44,841,231 as of October 29, 2020. A total of 32,770,227 cases recovered and 1,180,349 people have died since the beginning of the outbreak. Globally, in a week time, from October 22, 2020 to October 29, 2020, COVID-19 cases increased by 7.9% and deaths by 3.78%. Asia is the leading in terms of cases followed by North and South America. North America leads the number of deaths followed by South America and Europe (Fig 2).



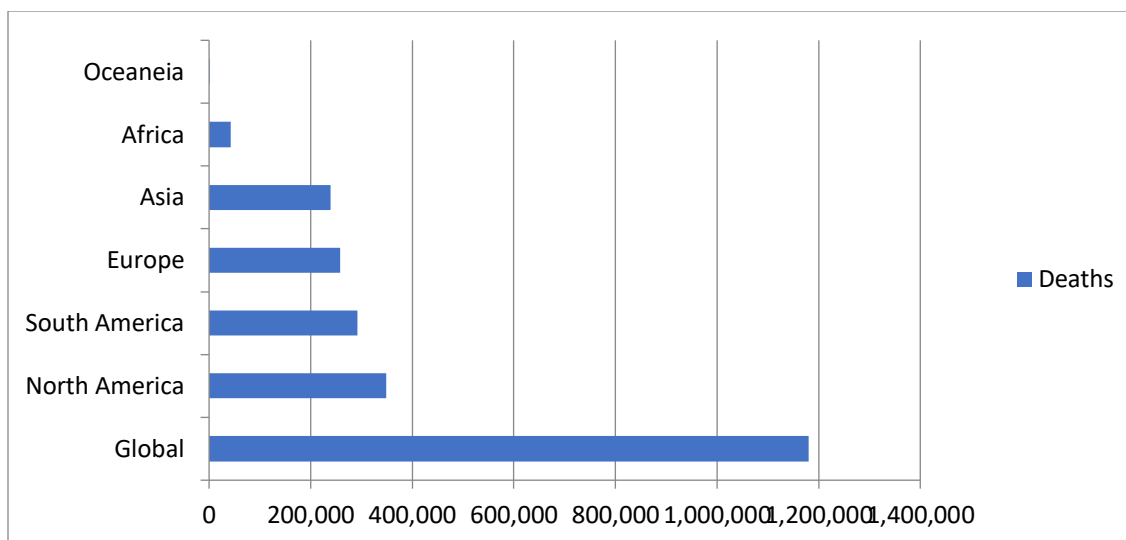


Fig 2. Global cases (top) and deaths (bottom) reported as of October 29, 2020.

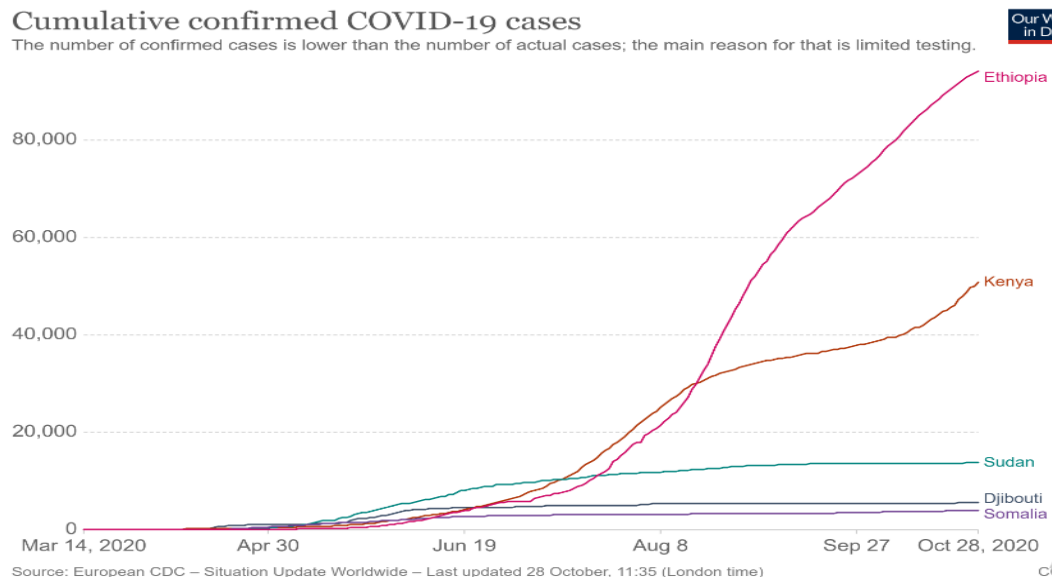
- USA has recorded the highest number of cases (9,121,800 cases, 233,137 deaths) that accounts 20.34% of the total global cases and carried 19.75% of global deaths as of October 29, 2020.
- India became the 2nd in terms of cases following USA. The number of cases in India has increased in a week time by 4.3% (7,708,947 to 8,041,051) and deaths by 3.34% (116,681 to 120,583).
- The number of cases in Brazil has increased by 3.19% (5,300,649 to 5,469,755) and deaths by 1.94% (155,459 to 158,468) in a week time.
- Russia has continued reporting the highest number of cases in Europe, with 1,581,693 cases.
- France ranked 5th in the world with 1,235,132 cases.
- The line share of Africa to the global COVID-19 pandemic has still been low (only 3.92% of the global cases and 3.58% of deaths as of October 29, 2020). However, within the continent the number of cases has increased by 4.4% in a week time (1,685,503 to 1,759,578 cases). Similarly, the total number of deaths in Africa has increased from 40,546 to 42,218 showing a 4.12% increase in a week time.
- South Africa ranked 12th worldwide in terms of cases and leading in the continent with 719,714 cases and 19,111 deaths. Morocco (207,718 cases, 3,506 deaths), Egypt (107,030 cases, 6,234 deaths), Ethiopia (94,820 cases, 1,451 deaths), and (Nigeria (62,371 cases, 1,139 deaths) are the most four leading countries next to South Africa in reporting COVID-19 cases in the continent as of October 29, 2020. (See table below).

Africa	October 22		October 29	
	Cases	Death	Cases	Deaths
South Africa	708,359	18,741	719,714	19,111
Morocco	182,580	3,079	207,718	3506
Egypt	105,883	6,155	107,030	6234
Ethiopia	91,118	1,384	94,820	1451
Nigeria	61,667	1,125	62,371	1139

- In East African, COVID-19 cases and deaths have shown fast progress. In a week time, COVID-19 cases and deaths were increased by 3% in Ethiopia and 12.4% and 8.9% in Kenya. As of October, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries. The epidemic appears plateauing in Sudan showing only 0.3% cases and 0.1 deaths and in Djibouti 0.8% cases and zero deaths. Similarly, 1.3% cases and 3% deaths reported in Somalia in a week time.

Cumulative confirmed COVID-19 cases

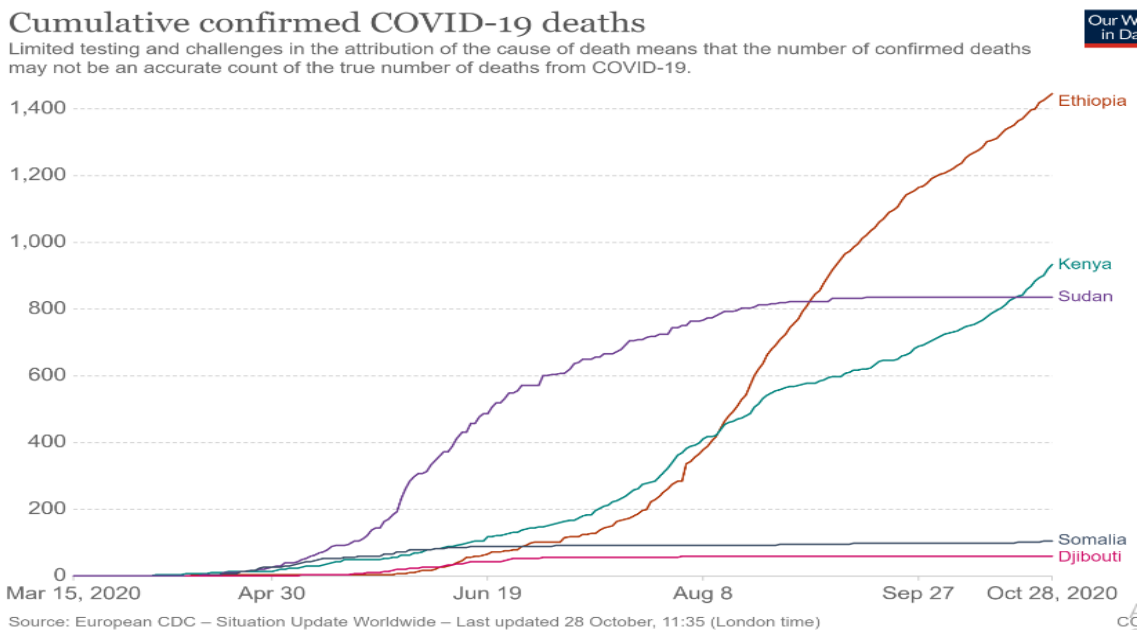
The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.



Source: European CDC – Situation Update Worldwide – Last updated 28 October, 11:35 (London time)

Cumulative confirmed COVID-19 deaths

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.



Source: European CDC – Situation Update Worldwide – Last updated 28 October, 11:35 (London time)

References

1. John Hopkins, Corona Virus Resources <https://coronavirus.jhu.edu/map.html>
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3. Africa CDC: COVID 19 Surveillance; <https://au.int/covid19>
4. Our World: <https://ourworldindata.org/covid-cases>

Regional and global contributions of air pollution to risk of death from COVID-19

- Poor air quality, especially from fine particulate matter with a diameter <2.5 μm (PM_{2.5}), is one of the leading risk factors, and responsible for many excess deaths. The global loss of life expectancy from long-term exposure to ambient air pollution exceeds that of infectious diseases and is comparable with that of tobacco smoking. The risk of mortality from the coronavirus disease that emerged in 2019 (COVID-19) is increased by comorbidity from cardiovascular and pulmonary diseases. Air pollution also causes excess mortality from these conditions.
- In addition, advanced age is a strong risk factor for cardiovascular disease, and the effects on immune function may be equally important for COVID-19 susceptibility. The age dependency coincides with that of excess mortality from inhaled polluted air. The COVID-19 mortality rate has been estimated to be 4% in symptomatic cases, in part because pre-existing conditions such as cardiovascular and respiratory disorders increase the risk.
- COVID-19 is associated with a combination of respiratory and cardiovascular complications, which may comprise myocardial infarction, heart failure, venous thromboembolisms, and increases in biomarkers, which are also found in connection with high levels of air pollutants.
- In a recent analysis of 5700 patients hospitalized with COVID-19 in the New York City area, the most common comorbidities were hypertension (57%), obesity (42%), and diabetes (34%), representing cardiovascular risk factors that are also observed in relation to elevated PM_{2.5} concentrations, suggesting additive or synergistic effects on the cardiovascular system.
- When people inhale polluted air, the very small polluting particles, the PM_{2.5}, migrate from the lungs to the blood and blood vessels, causing inflammation and severe oxidative stress, which is an imbalance between free radicals and oxidants in the body that normally repair damage to cells. This causes damage to the inner lining of arteries, the endothelium, and leads to the narrowing and stiffening of the arteries. The COVID-19 virus also enters the body via the lungs, causing similar damage to blood vessels, and it is now considered to be an endothelial disease.
- Considering the cardiovascular and respiratory health impacts of air pollution, the relationship to COVID-19 mortality is not unexpected. Preliminary studies addressed the influence of air pollution on COVID-19 in different regions. In China, the incidence of COVID-19 was found to be significantly enhanced by PM_{2.5}, while a correlation between ambient PM_{2.5} and the mortality rate was also established. In Italy, it was found that the high pollution concentrations that are typical for the Po valley were associated with a high mortality rate. Furthermore, in the USA the severity of COVID-19 outcomes was linked to PM_{2.5} exposure, making use of Medicare data for >60 million people and nationwide air quality measurements. The results showed significant overlap between the causes of death in COVID-19 patients and those that lead to mortality from very small polluting particles.

- Finding from current study revealed that, in regions with strict air quality standards and relatively low levels of air pollution, such as Australia, the attributable fraction by human-made air pollution to COVID-19 mortality is found to be a few percent only. This represents potentially avoidable, excess mortality. Relatively high fractions occur in parts of East Asia (35%), central Europe (25%), and eastern USA (25%).
- Estimates for individual countries show, for example, that air pollution contributed to 29% of coronavirus deaths in the Czech Republic, 27% in China, 26% in Germany, 22% in Switzerland, 21% in Belgium, 19% in The Netherlands, 18% in France, 16% in Sweden, 15% in Italy, 14% in the UK, 12% in Brazil, 11% in Portugal, 8% in the Republic of Ireland, 6% in Israel, 6% Ethiopia, 3% in Australia and just 1% in New Zealand. Using data from a number of recently published epidemiological studies, the researchers confirmed that in areas with moderate air pollution, the risk of dying from the disease compared to areas with relatively clean air was more than 80% higher, while in heavily polluted regions the risk was twice as high.
- Globally, long-term exposure to air pollution contributes 15% (7 – 33%) to COVID-19 mortality, which could have been largely prevented, for example by adopting the air quality regulations applied in Australia (annual PM_{2.5} limit of 8 mg/m³). The global mean contribution of fossil fuel use to the anthropogenic fraction is 56%, being highest in North America (83%), West Asia (75%), and Europe (68%). This represents potentially avoidable, excess mortality. The links between economic activity, traffic, energy use, and public health have been illustrated by the strong reduction of air pollution in many locations during the lockdown measures.
- A lesson from our environmental perspective of the COVID-19 pandemic is that the quest for effective policies to reduce anthropogenic emissions, which cause both air pollution and climate change, needs to be accelerated. The pandemic ends with the vaccination of the population or with herd immunity through extensive infection of the population. However, there are no vaccines against poor air quality and climate change. The remedy is to mitigate emissions. The transition to a green economy with clean, renewable energy sources will further both environmental and public health locally through improved air quality and globally by limiting climate change. Finally, this result suggests that air pollution is an important cofactor increasing the risk of mortality from COVID-19. This provides extra motivation for combining ambitious policies to reduce air pollution with measures to control the transmission of COVID-19.

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Essential Lessons from the Coronavirus Pandemic

- The world is experiencing a once-in-a-lifetime pandemic, causing countless human suffering and death, breakdown of social relationships, and depriving individuals of livelihoods and countries of prosperity. The coronavirus pandemic has strained health systems, revealed unacceptable inequalities, and overturned international institutions.
 - The most important element of pandemic preparedness is a resilient health system to rapidly detect, assess, report, and respond to the outbreaks. pandemic response, require all countries to have core health system capacities, including surveillance, laboratories, human resources, and risk communication. Health systems also need capacity to test for, diagnose, and treat infectious diseases. Even countries having robust health systems, often lacked sufficient capacity to treat large numbers of patients during the outbreak.
 - Leadership and public trust are the greatest indicator of success in pandemic control. Although health systems are important, COVID-19 demonstrated that even countries with strong capacities usually poorly performed. The coronavirus pandemic teaches that leadership is crucial. Population-based health behaviors handwashing and other aspects of personal hygiene, physical distancing, and face covering can significantly reduce the spread of the infection
 - Defending the integrity of science and sustainable investment in biomedical research and development, not just during a health crisis but also during interpandemic periods.
 - Fund and Support Robust Global collaboration. A once-in-a-lifetime threat that all the world shares in common should bring people, health and research institutions throughout the world bring together. Yet, there are also hopeful signs of international cooperation. Governments and international institutions have clear choices on how best to respond to COVID-19 and to prepare for future pandemics. Choosing science, the rule of law, and equity as core values would be transformational. Building universal health systems would not only prepare countries for epidemic response, it would also vastly improve the health and well-being for all people, across the full spectrum of health threats faced by humankind.

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3. Barro, Robert J., José F. Ursúa, and Joanna Weng. *The coronavirus and the great influenza pandemic: Lessons from the "spanish flu" for the coronavirus's potential effects on mortality and economic activity*. No. w26866. National Bureau of Economic Research, 2020.

Most Fatal Pandemic COVID-19 Outbreak: An Analysis of Economic Consequences

- The outbreak of the COVID-19 is spreading fears around the globe and is severely disrupting the global economy. It creates many serious challenges at national, regional, and global levels. Global economics decline remarkably during the pandemic COVID-19.
- The COVID-19 has already brought considerable human suffering and jeopardized global economies. According to the International Monetary Fund (IMF), the COVID 19 pandemic will cost the world economy up to \$9 trillion, which is the combined GDP of Japan and Germany, or roughly half that of the USA.
- It is estimated that global lose could be up to 18% of the usual output. Small and medium sized enterprises (SMEs) are completely closed during COVID-19 infections. China deals more than 18 million SMEs. About 80% of enterprise jobs and 50% of private firms' exports are partially or completely closed.
- It has affected workplaces throughout the world. It shocks to both the supply and demand for goods and services that effect on the economy. The EU, USA and Japan account for half of the world's GDP, the Chinese economy accounts for about 16% of global GDP, and these economies are based on trade, services and industries. Closing borders, lockdown, and home quarantine drastically reduce global economic activities.
- The top tourism destinations in the World are France with about 89 million tourist arrivals per annum, Spain with about 83 million; the USA (80 million), China (63 million), Italy (62 million), Turkey (46 million), Mexico (41 million), Germany (39 million), Thailand (38 million), the UK (36 million), etc. Tourism together with travel supports one in 10 jobs (319 million) in the world and generates 10.4% of world GDP.
- Since the spread of COVID-19 to May 2020, about 7-13% workers lost their jobs in the airline workforce. Air travel restrictions have created negative impacts to numerous industries. Reduction of international tourism and travels is of course an economic implication of infectious pandemics COVID-19. About 20-80% of international flights are remaining closed due to this pandemic.
- The top five African economies (Nigeria, South Africa, Egypt, Algeria, and Morocco) account more than 60% of Africa's GDP. The tourism and petroleum sectors represent on average a quarter (25%) of the economy of these countries.
- Top tourism destinations in Africa include Morocco with around 11 million tourist arrivals per annum, Egypt (11.35 million), South Africa (10.47 million), Tunisia (8.3 million) and Zimbabwe (2.57 million). IATA estimates the economic contribution of the air transport industry in Africa at \$55.8 billion, supporting 6.2 million jobs and contributing 2.6% of African GDP. African airlines have already lost \$4.4 billion in revenue by 11 March 2020 and expect more loss in rest of the year.

Economic Recovery Steps

- The economic loss globally is estimated to be \$3-6 trillion. The UN is calling for \$500 billion in aid to help low- and middle-income countries to face the pandemic. This aid must be used for supporting prevention measures, health systems, social protection, and food security (UN, 2020). Oxfam calculates that OECD countries' fair share of this response would be closed to \$300 billion, which is also less than the combined wealth of the world's three richest men.
- Donors must urgently respond to food insecurity caused by coronavirus and provide food directly low- and middle-income countries mostly in Africa and Asia. Donors must uphold humanitarian principles; provide feminist humanitarian assistance; protect refugees, migrants and internally displaced persons; and work towards protecting civic space for the vulnerable people. They must continue humanitarian aid to protect future famine; help to keep gender equality and women's rights in the low- and middle-income countries.
- As a result, global economic loss will become a large amount. It is estimated that more than 2 billion people (addition of new half a billion) of the world will be extremely poor (whose income is \$1.90 a day) due to the pandemic COVID-19.
- The governments, civil societies and employers must take necessary actions to minimize the economic losses and mitigate the economic damages due to COVID-19 outbreak.

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