

Design of Dashboard and Web platform for COVID-19 Data Analysis and Visualization in Ethiopian Context

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Submitted to ILRI and CIAT

1 Background

ILRI and CIAT have partnered to support the government of Ethiopia in its fight against COVID-19. An initial discussion between ILRI experts and the Health Ministry (HM) focused on ‘mass-sampling’ to seed up texting aligned with the financial and human resources of the country. While a protocol was being drawn for pooled sampling, a request from the HM came to support them identify vulnerable areas so that they can prioritize their testing.

With this, ILRI colleagues explored within the CGIAR and found CIAT to have good experts in geospatial analysis. This was discussed between ILRI and CIAT experts and an agreement was reached to support the government exercise. CIAT then pooled experts from the so called ‘coalition of the willing (CoW) – soil scientists, agronomists, geospatial analysis experts and data scientists who volunteered to join forces and support the agricultural transformation agenda of the country through embedding ‘digital solutions’ and also engage in emerging issues.

Accordingly, the CoW team has been participating in the intervention for the fight against corona virus in Ethiopia. As part of the CoW team, the consultant has been working on data management and web-based visualizations on COVID-19 related information/data of Ethiopia in general and Addis Ababa in particular

2 Objective of the Assignment

The objectives of the assignment were to develop a digital platform such that COVID-19 related resources can be kept, shared and updated. In addition, technical support on data analysis and coding was also a part of the assignment.

3 Expected Deliverables

In this assignment, a COVID-19 Dashboard with technical support and final report were expected to be delivered as the final outputs. The dashboard is a web-based platform that helps to keep, update and share informational resources related to COVID-19 in Ethiopia.

4 Deliverables Completed

The consultant has completed both of the expected deliverables of the assignment:

a) Web-based COVID-19 Dashboard.

Having reviewed the available codes and free platforms on the web for data management and visualization, the consultant has selected tableau public, an online and free data analysis and visualization tool. The tool was selected for its simplicity and the consultant's prior knowledge on the tool, which in a way helped to develop the dashboard in a relatively shorter time than could have been possible using other tools. Using a desktop app tableau provides, a device independent web-based dashboard was designed and developed for storing, analysing, updating, visualizing and sharing COVID-19 related information in the Ethiopian context with a focus on cases in Addis Ababa, where most of the cases are from.

The link to the web-based COVID-19 Dashboard is

<https://public.tableau.com/profile/cowcovid19ethiopia#!/>

The screenshot in Figure 1 shows the main dashboard for the web-based data visualizations created.



CoW Edit

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These visualizations are results of the interventions of the Coalition of the Willing (CoW) in the fight against Corona Virus in Ethiopia.

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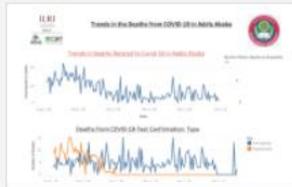
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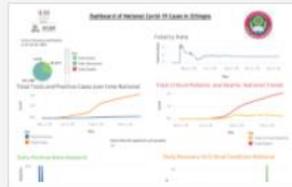
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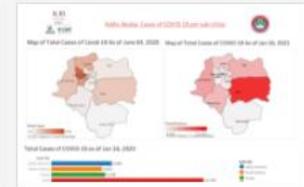
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Figure 1 The Covid-19 Dashboard for Ethiopia

As shown in the screenshot above, there are different visualizations on different aspects of the pandemic in Ethiopia. Users can click on the thumbnails of the visualizations to get the details of the graphs and charts for the particular visualisation. For instance, the screenshot in Figure 2 shows the national covid-19 case data with different indicators of the pandemic.

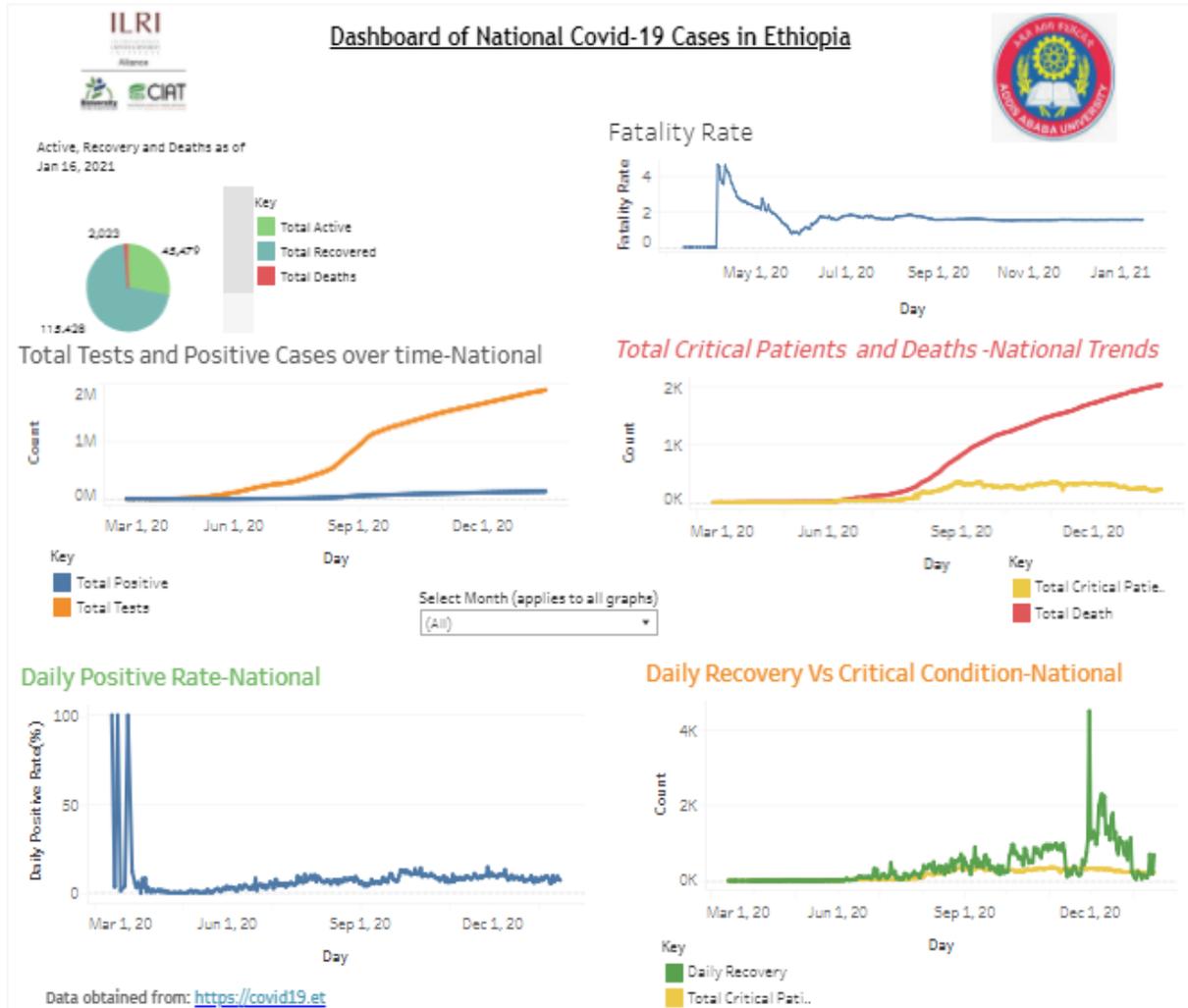


Figure 2 Dashboard of latest national Covid-19 case data in Ethiopia

Also, a spatial data visualization is combined with covid-19 data to show the geographic variations in the spread of the pandemic. The screenshot in figure 3 below shows a spatial map showing the variation of confirmed COVID-19 cases of the 10 sub cities in Addis Ababa. As can be seen in the screenshot, as of 13 December 2020, **Bole** sub city has the highest number of cases while **Lideta** has the lowest.

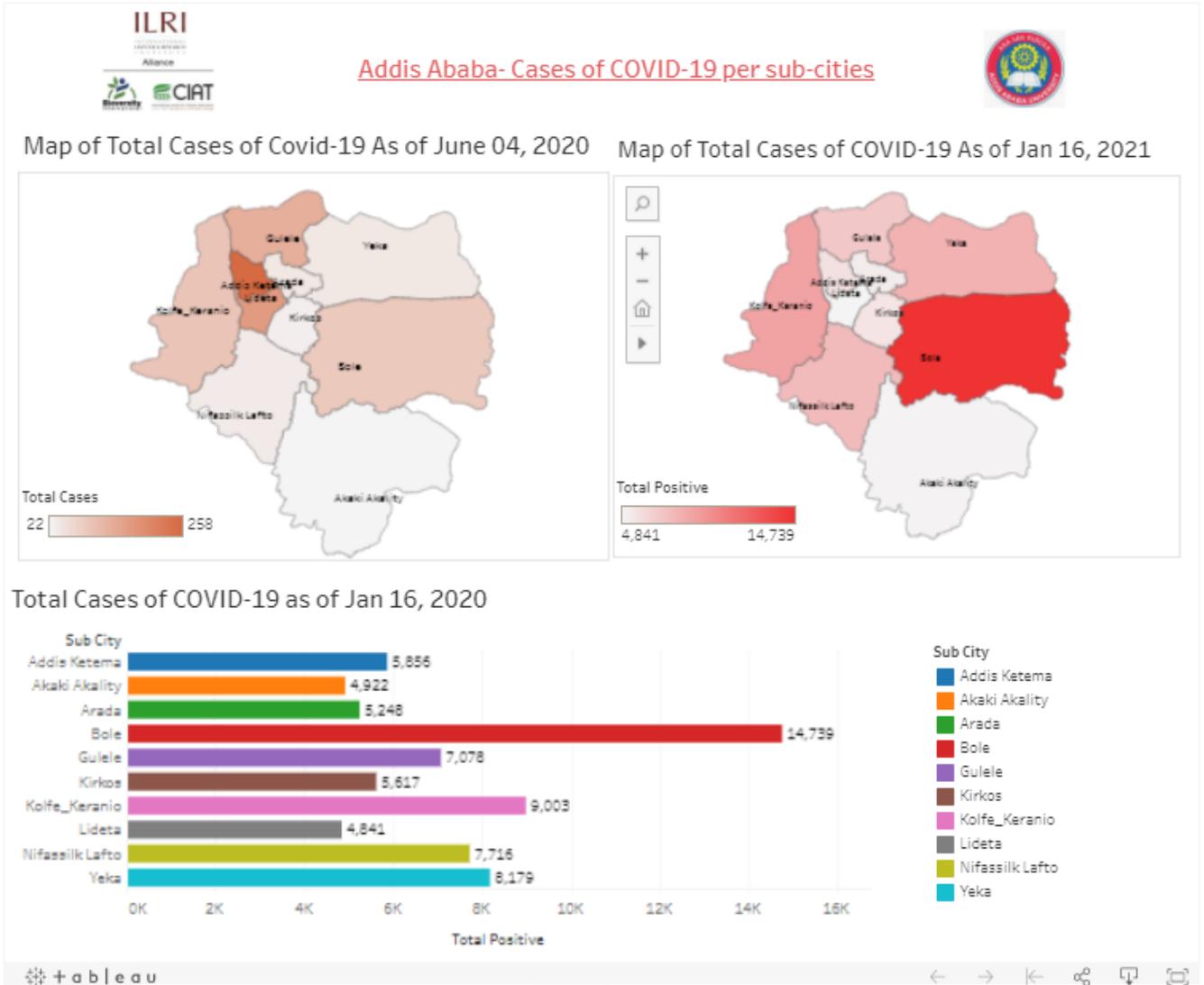
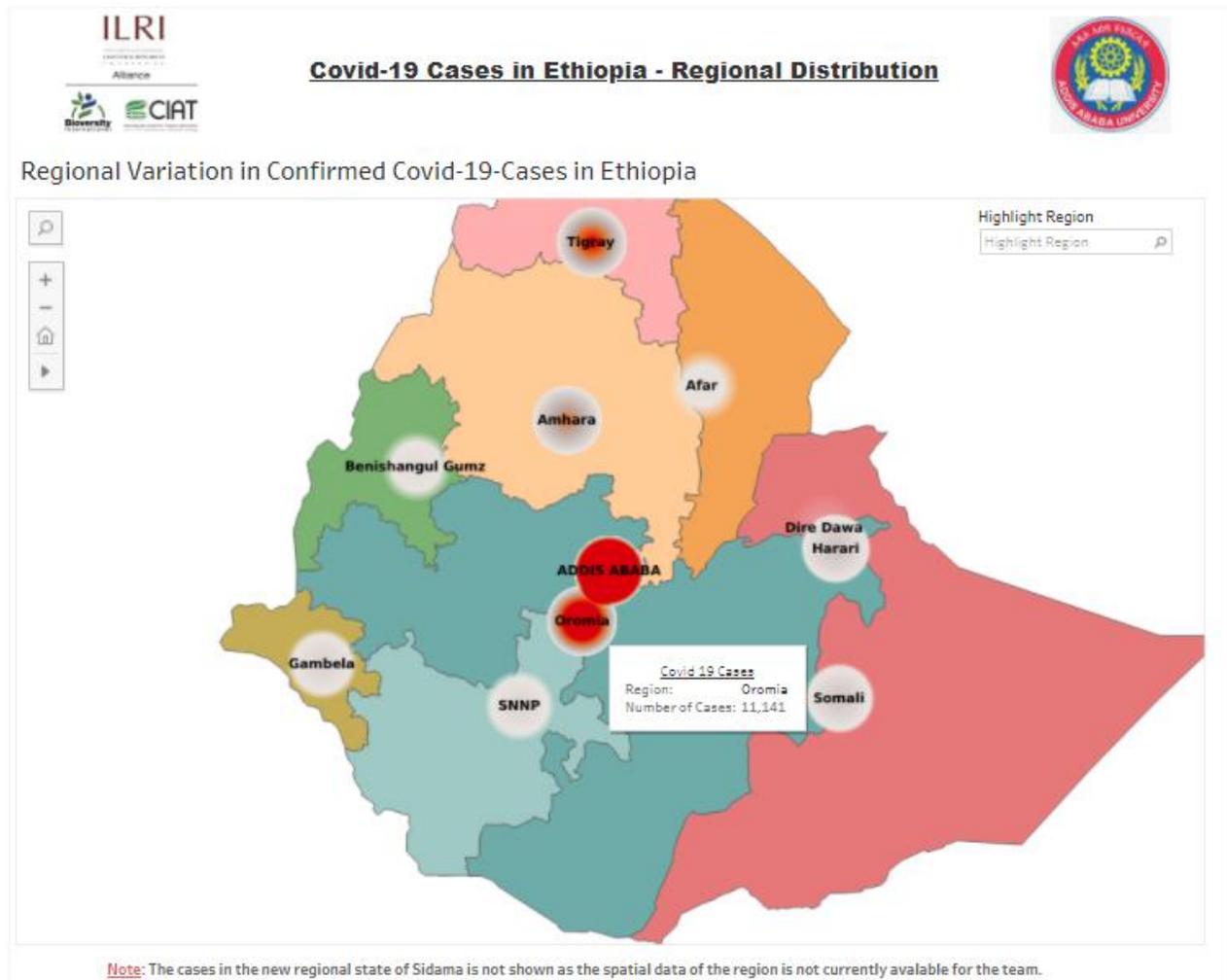


Figure 3 Spatial comparison of COVID-19 cases per sub city

A spatial visualization of the spread of COVID-19 across the regional states was also attempted (shown in figure 4 below), but only with a snapshot of the data at a particular point in time. If data for the regions was available, a time series of the variation in the spread across the regions could be easily visualized.



b) **Technical Support.**

The consultant has provided the necessary technical (IT) support on data management and visualization of COVID-19 related resources.

5 Conclusion and recommendation.

As part of the assignment, the consultant has successfully concluded his assignment by delivering the expected results. The dashboard developed shows important indicators on the spread of COVID-19 in Ethiopia. However, recency of the data used for the dashboard is critical for the usefulness of the information presented. Hence, it is highly recommended that the dashboard is fed with updated, complete and quality data about the pandemic in Ethiopia.