



YEAR 2020-21

MODULE CODE:	GEOG0162
MODULE NAME:	Cartography and Data Visualization
COURSE PAPER TITLE:	Poverty Investigation
WORD COUNT:	1437

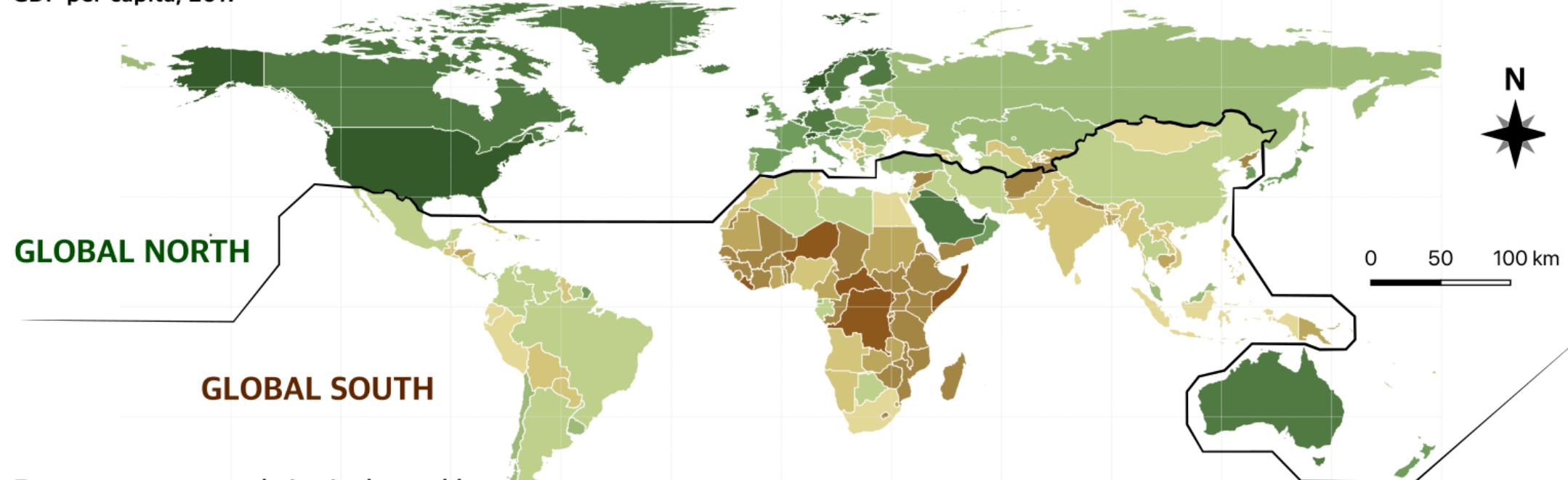
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Poverty Investigation

According to World Bank Group (2020), COVID-19, armed conflict, and climate change may drive additional people into poverty and global extreme poverty might be increasingly concentrated. Therefore, nations over the world will need to prepare forward to provide humanitarian assistance help vulnerable citizens and restart inclusive growth. This report will map the poverty at global, regional and national levels, identifying the poorest regions. Then, based on the previous literature, possible reasons of poverty will be discussed. The main audiences would be those who concern about the global inequality or humanitarian assistance.

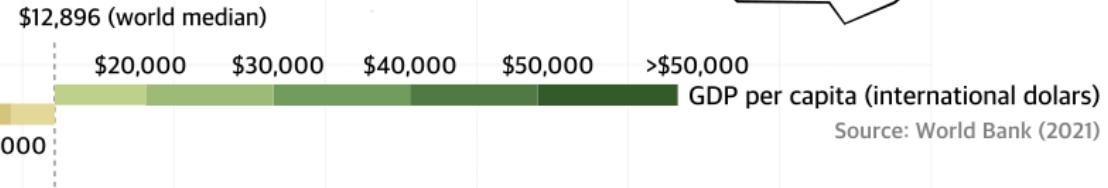
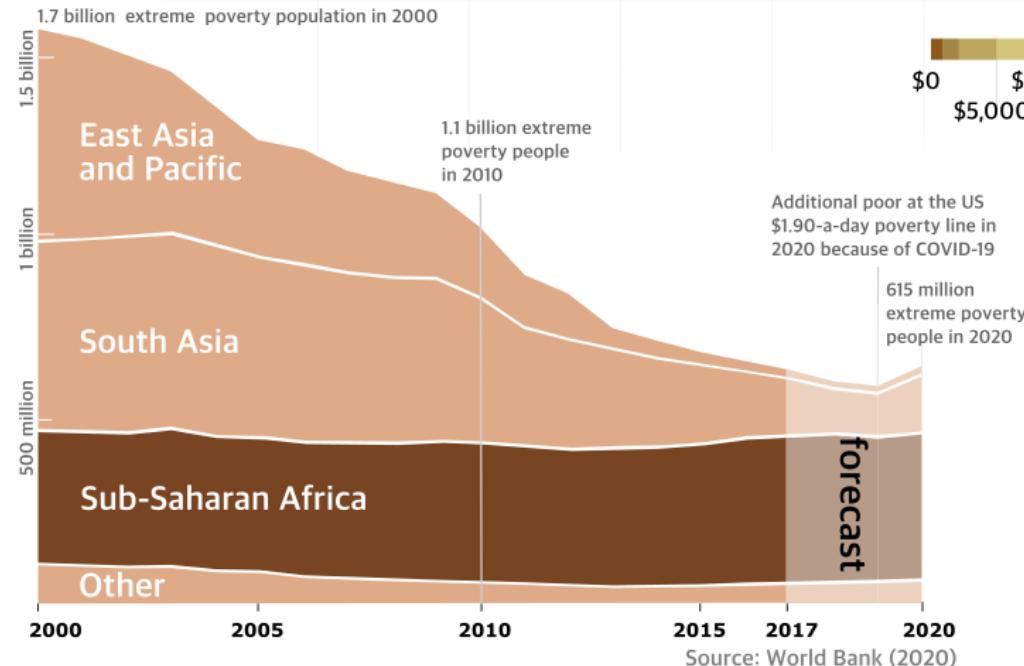
World Wealth Inequality

GDP per capita, 2017



Extreme poverty population in the world

Measured by US\$1.90-a-day poverty line

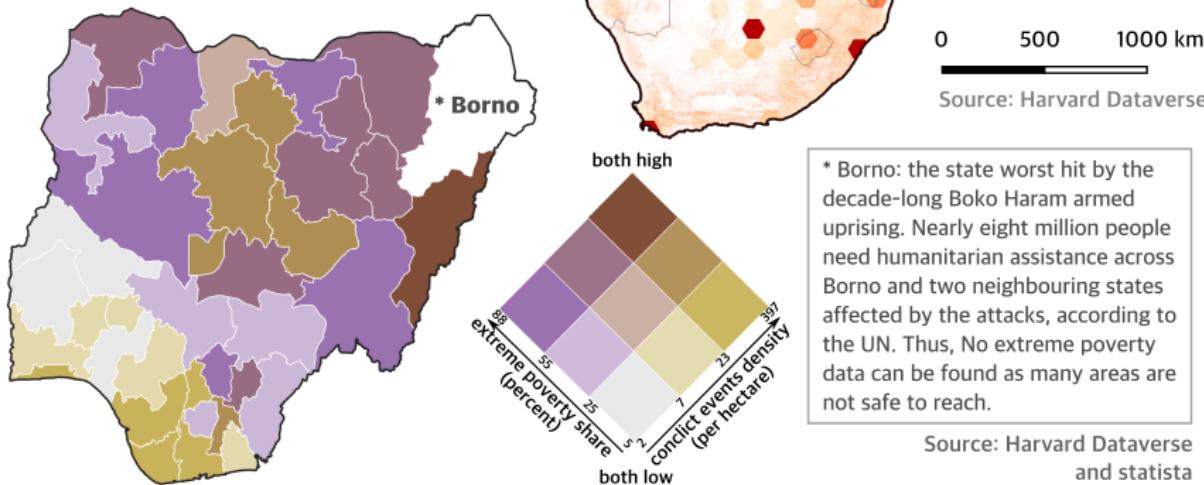
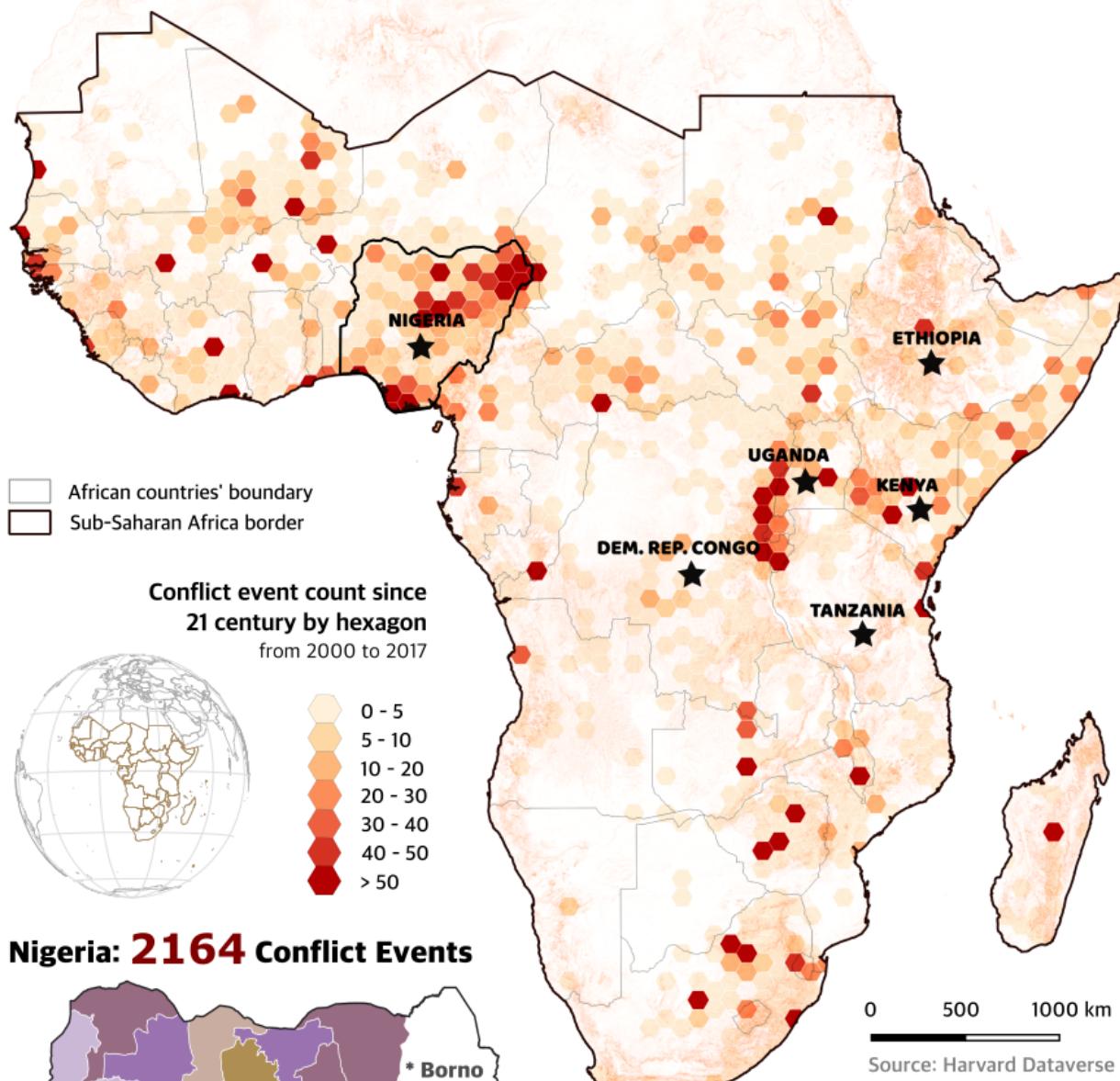


There is a gap between rich global north and poor global south. In the 1980s, the Brandt Line (the black line in the figure above) was defined as an approach geographically splitting the world into relatively richer and poorer nations. Around 90 percent of countries with GDP per capita under world median (\$12,896) are in global south. Besides, considering the extreme poverty measured by 'international poverty line' as living on less than \$1.90/day, more than one billion people lifted themselves out of extreme poverty range since the 21st century. However, those poor people seem to be concentrated in Sub-Saharan Africa, which would increase the world wealth inequality.

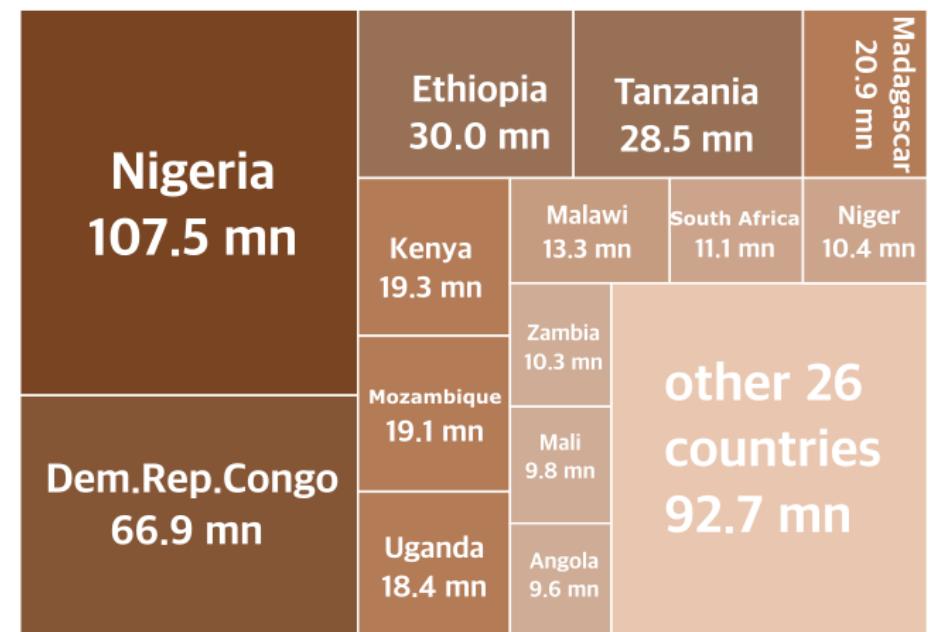
World wealth inequality may associate with the natural resources availability, natural hazards, health and education level, industry structure, international markets, and conflict (Royal Geographical Society, 2021). Barne and Wadhwa (2018) have mentioned that the higher-level poverty in Africa might probably be relevant to the conflict event occurrence and weak institutions. In addition, according to World Bank (2020), COVID-19 pandemic will negatively affect the global per capita GDP growth pushing additional population into extreme poverty, especially, affect those in South Asia and Sub-Saharan Africa.

Is conflict a diver of poverty?

A large number of previous articles have identified the relationship between terrain features and political violence, especially terrain conditions could probably influence the frequency and character of violence (and even the control capacity of states (Shaver, Carter & Shawa, 2019). The left figure can also illustrate this relationship, especially in Nigeria and the areas around the common boundary of Uganda and Democratic Republic of the Congo (Dem.Rep.Congo). In addition, comparing with the treemap bellow showing extreme poverty population in Sub-Saharan countries, it is safe to say that conflict is indeed a diver of poverty, which confirms the previous theory. Among them, Nigeria has the largest poorest group (107.5 million) with the most frequent conflict events occurring.

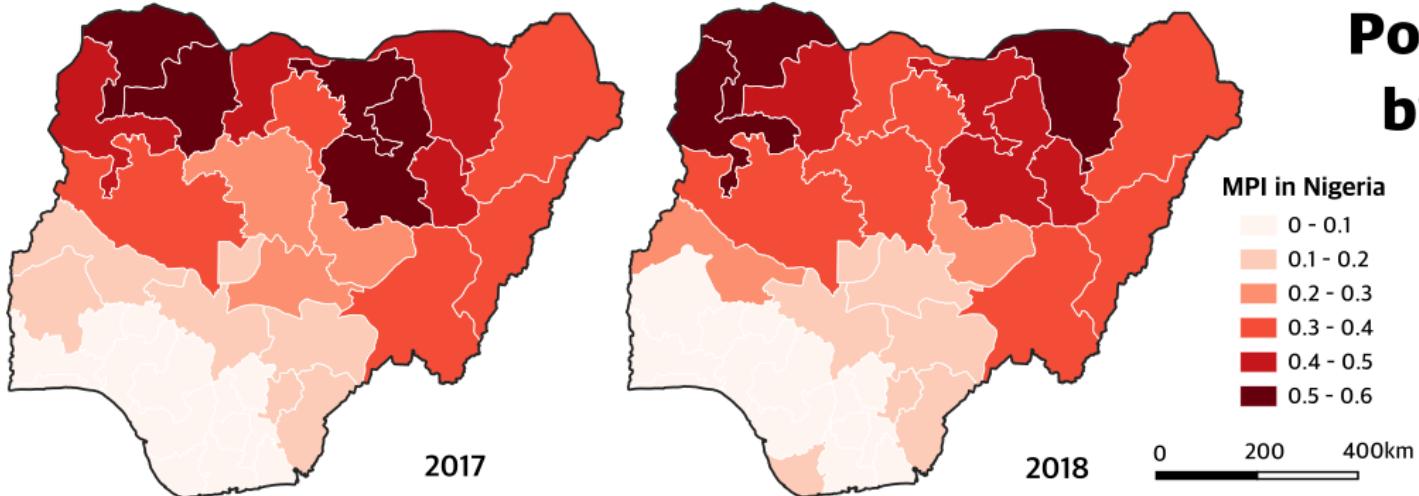


Extreme poverty population in Sub-Saharan Africa countries (2017)
Measured by US\$1.90-a-day poverty line (mn = million)

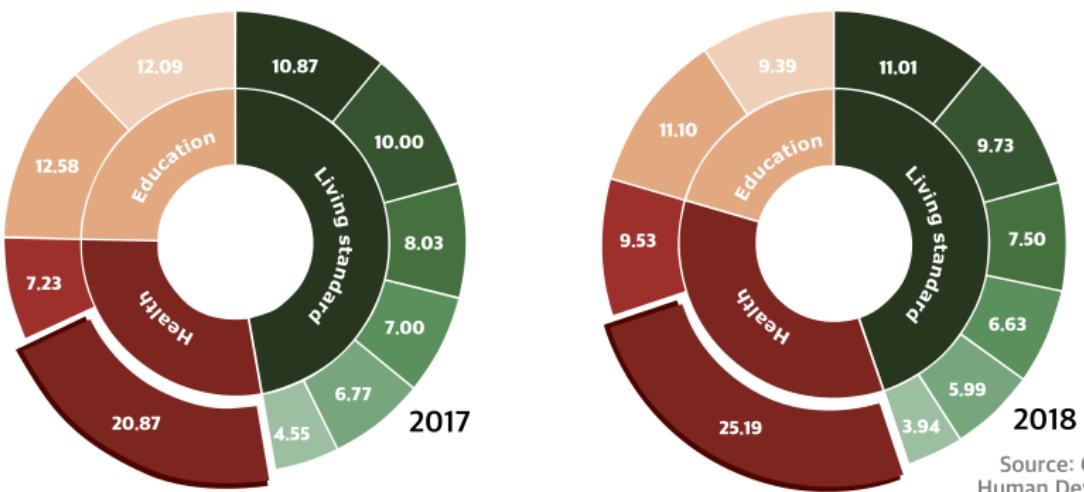


Calculated by QGIS, since 21 century 2164 conflict events has happened in Nigeria, where totally 43 percent of total population were classified as poor. Figure on the left has demonstrated the relationship between conflict event density and extreme poverty share in Nigeria, applying bivariate map. Although data for Borno state are unaquirable influenced by Boko Haram, there is still a trend that northeast regions experienced more frequent conflict events and higher extreme poverty share. On the contrary, southwest regions had better conditions, with relatively low-frequent conflict events and lower extreme poverty share. In any case, at the national level, it seems that conflict is still one of the reasons of poverty.

Poverty in Nigeria measured by Global Multidimensional Poverty Index (MPI)



The 2030 Agenda for Sustainable Development reaffirmed the importance of strategies for poverty eradication that go beyond economic deprivation. The Multidimensional Poverty Index (MPI) measures the progress against Sustainable Development Goal 1, aiming to end poverty in all forms by 2030. It also intends to achieve social protection for poor and vulnerable people, to increase access to basic services, and to support people harmed by conflict and climate-related disasters (United Nations Development Programme, 2019).

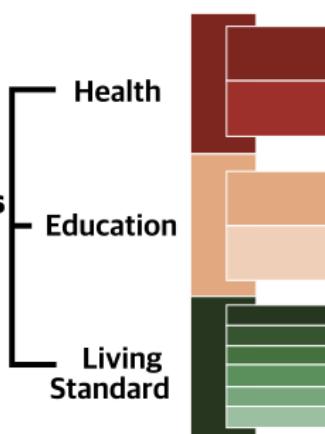


The MPI accounts for the incidence and intensity of poverty, ranges from zero to one, considering three dimensions illustrated at bottom (including health, education and living standard). From the figure above, Nigeria's poorest states are almost located at the North Eastern areas, with MPI scores between 0.3 and 0.6, while the least poor states are situated in the South Western regions, with MPI scores ranging from 0 to 0.3.

From the sunburst chart, the root of poverty lies in the deprivation of accessibility to basic necessities such as nutrition, education, sanitation and so forth. Among them, the accessibility to nutrition seems accounts for the most average percentage contribution to overall poverty in both 2017 and 2018. Besides, the proportion is increasing from 20.87% to 25.19%. Therefore, improving nutrition should be emphasized.

Average percentage contribution of deprivations of each dimension to overall poverty

Three Dimensions of Poverty



Nutrition: An adult under 70 years of age or a child is undernourished.

Child mortality: Any child has died in the family in the five-year period preceding the survey.

School attendance: Any school-aged child is not attending school up to the age at which he/she would complete class 8.

Years of schooling: No household member aged 10 years or older has completed six years of schooling.

Cooking Fuel: The household cooks with dung, wood, charcoal or coal.

Sanitation: The household's sanitation facility is not improved or it is improved but shared with other households.

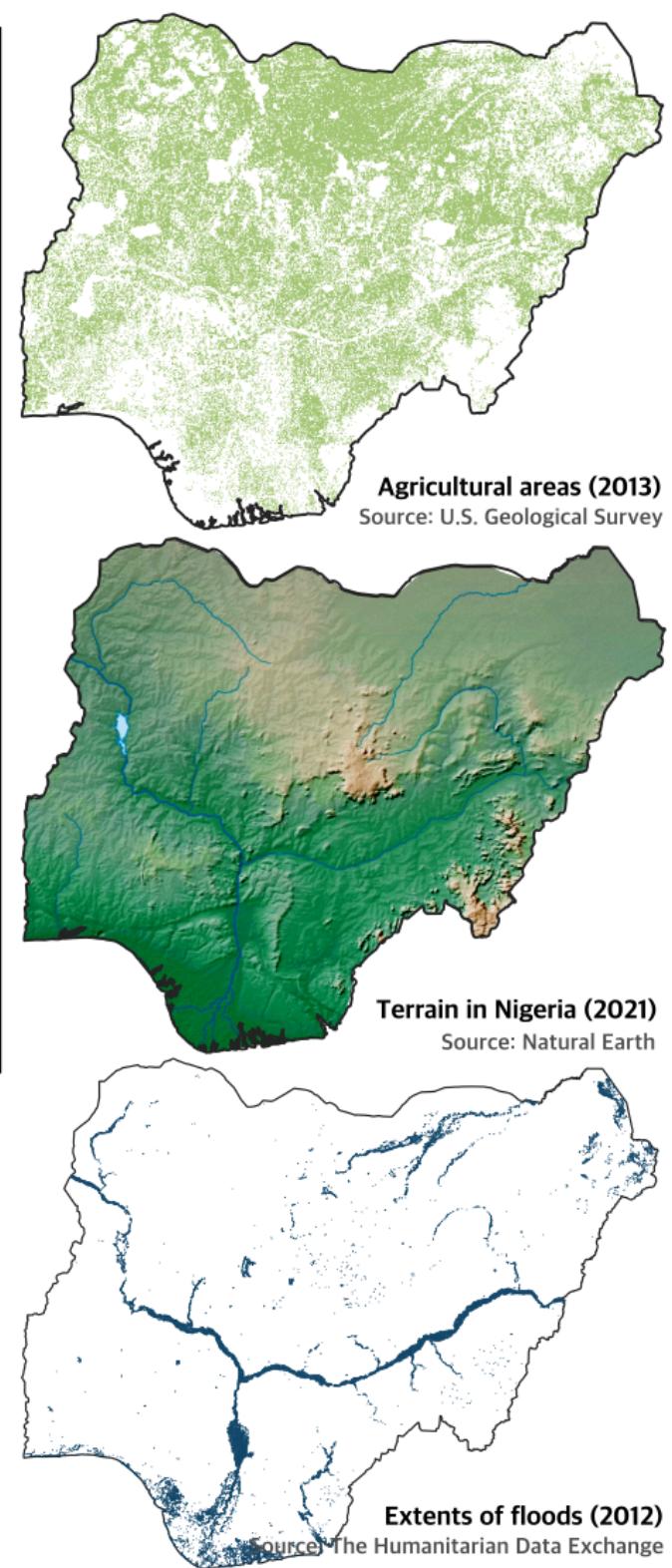
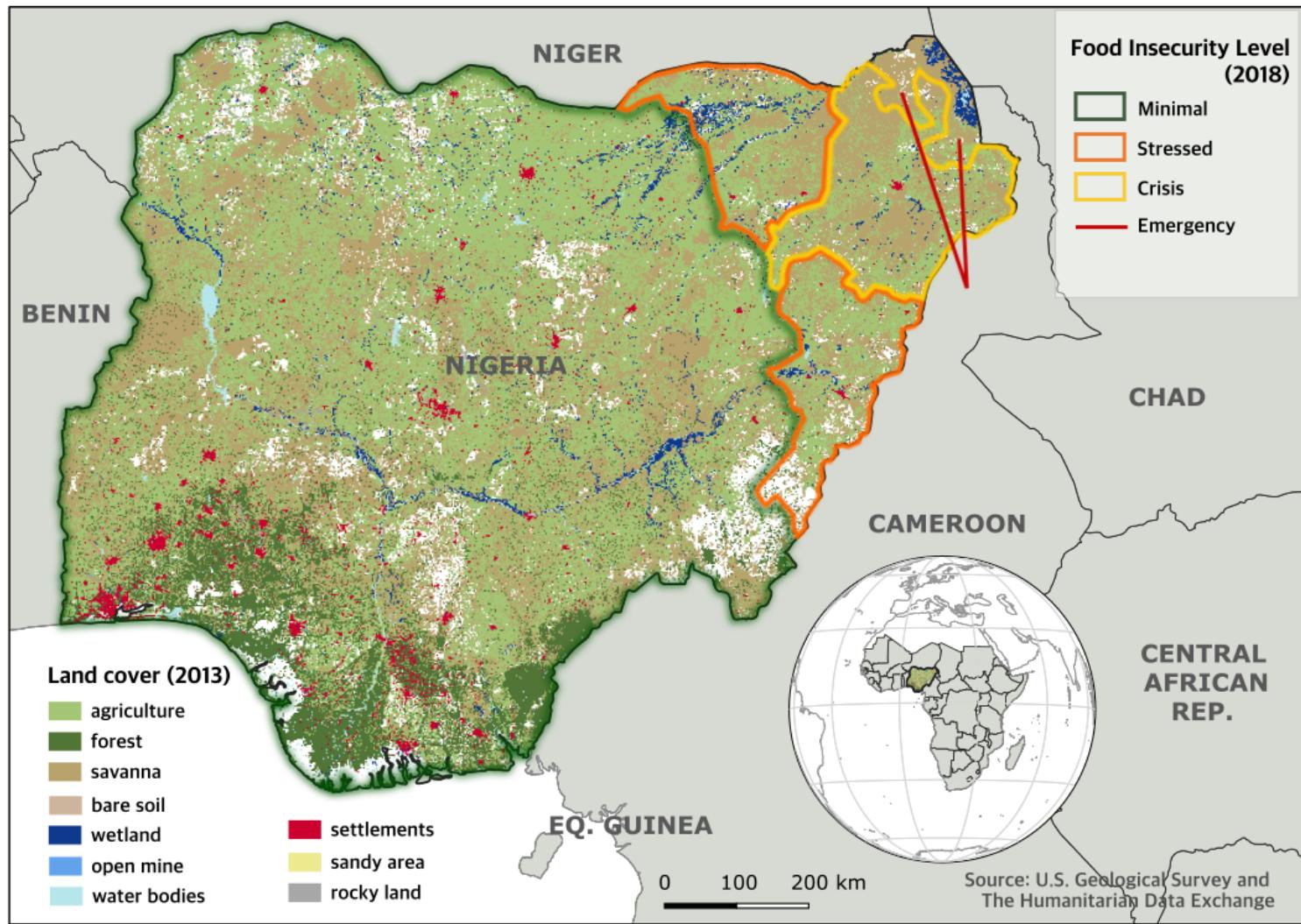
Electricity: The household has no electricity.

Drinking Water: The household does not have access to improved drinking water or safe drinking water is at least a 30-minute walk from home.

Housing: Housing materials for at least one of roof, walls and floor are inadequate.

Assets: The household does not own more than one of these assets.

Source: United Nations Development Programme



What causes malnutrition?

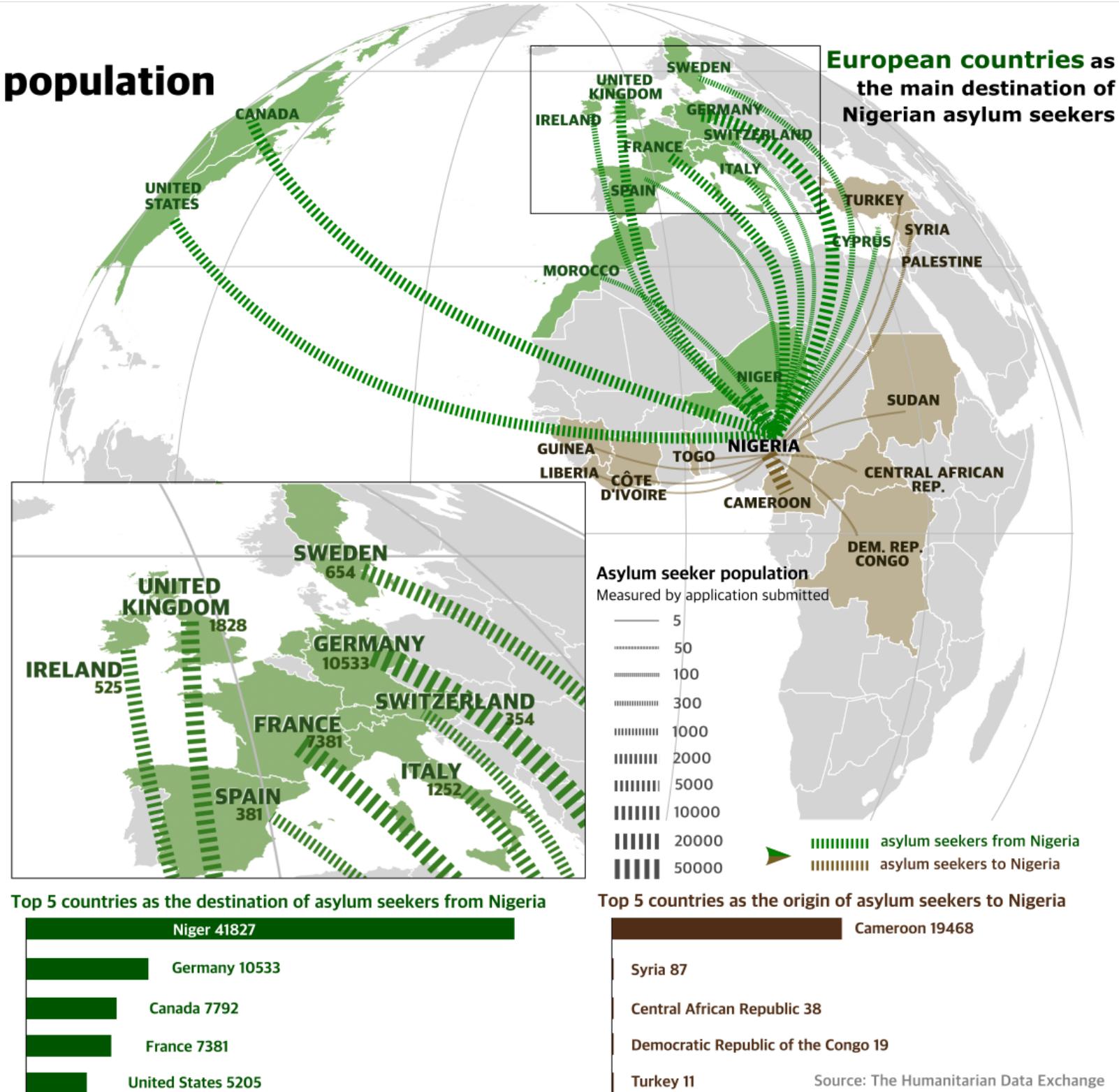
As mentioned, nutrition element is the most influential factor for poverty in Nigeria, measured by MPI, which might be relevant to the distribution of natural resources. The figure above has displayed the relationship between land cover characteristics and food insecurity level. It seems the farther to the northwest of the country, the more serious the food security issues are, from minimal to emergency level. As represented, southern part of the country has more agricultural land and water bodies, where most settlements are situated, while the northern regions are relatively barren with more savanna and bare soil. Apart from the land cover characteristics, food insecurity might also be relevant to the accessibility of food sources, which might be negatively affected by tensions between the national and regional governments. In that case, the comprehensive effects of the distribution of land cover and the impact of conflict event occurrence might probably be the reasons of food insecurity, which would further lead to undernourishment issue in specific areas. Considering the terrain and flooding aspects, the low-lying areas are also areas with severe flooding issues, which will inevitably affect the local agricultural industry and even the safety of life and property.

Where the poverty population would like to go?

Regarding Nigeria, the country with the most extreme poverty population in Sub-Saharan Africa, as a node, the will of the asylum seekers has been represented. Overall, European countries are the main destinations of Nigerian asylum seekers, while Nigeria is the destination of asylum seekers from countries in Southern Africa.

Considering the share the those destinations, the most preferred end point of Nigerian asylum seekers is Niger (neighboring country) with 41827 applications in 2017 (more than 4 times that of other regions). Other than that, Germany, Canada, France and United States also seem attractive to them. For people come to Nigeria for humanitarian assistance, 19468 applications have been submitted from Cameroon (neighboring country) in 2017, accounting for 99% of total asylum seekers.

There is a possibility that the applications are rejected. In that case, corresponding social issues might be increased. According to FEWS NET (2021), Conflict increased in early march 2021, which resulted in an escalation in the displacement rate and a decrease in humanitarian access. It is important to predict the will of those asylum seekers, in order to prepare in advance and provide timely humanitarian assistance.



Self-Critique

Research found problems following hierarchical levels first and then found corresponding datasets. Therefore, some datasets are not up to date, although the latest available datasets are applied. The usage of different years' datasets in the study might cause inconsistency in the analysis, resulting in inaccuracy to some extent.

In addition, because of the limit of map count, the comprehensive analysis for Nigeria is not possible, therefore, the discussions only focused on the significant elements, which had been identified throughout the process. Considering the multidimensions of MPI, issues related to education and living standard have not been analyzed, which are also critical to be understood. However, this essay only emphasized the nutrition element because of the highest percentage contribution of its deprivation to the overall poverty.

Natural Earth (2021). 1:10m Cross-blended Hypsometric Tints. Available at: <https://www.naturalearthdata.com/downloads/10m-raster-data/10m-cross-blend-hypso/> (Accessed: 22 April 2021).

Royal Geographical Society (2021). 60 second guide to: Global North South Divide. Available at: <https://www.rgs.org/schools/teaching-resources/60-second-guide-to-global-north-south-divide/> (Accessed: 20 April 2021).

Salehyan, I. (2019). Social Conflict Analysis Data, Harvard Dataverse, V1. Available at: <https://doi.org/10.7910/DVN/WF9QC6> (Accessed: 20 April 2021).

Shaver, A., Carter, D.B. & Shawa, T.W. (2019). 'Terrain ruggedness and land cover: Improved data for most research designs', *Conflict management and peace science*, 36 (2), pp. 191-218.

The Humanitarian Data Exchange (2012). *nga_floods_2012.shp.zip*. Available at: <https://data.humdata.org/dataset/nigeria-flood-extents-nov-2012-fod/resource/3c6a77da-be1a-4437-b04f-9e1a47a601a7> (Accessed: 20 April 2021).

The Humanitarian Data Exchange (2014). Food Insecurity Mapping - West Africa (April - June 2014). Available at: <https://data.humdata.org/dataset/food-insecurity-mapping-west-africa-april-june-2014> (Accessed: 20 April 2021).

United Nations Development Programme (2019). The 2019 Global Multidimensional Poverty Index (MPI). Available at: <http://hdr.undp.org/en/2018-MPI> (Accessed: 20 April 2021).

U.S. Geological Survey (2020). West Africa Land Use Land Cover Time Series. Available at: <https://www.sciencebase.gov/catalog/item/5defffc05e4b02cae0f4f3fc> (Accessed: 22 April 2021).

Varrella, S. (2020). Poverty headcount rate in Nigeria 2019, by state, statista. Available at: <https://www.statista.com/statistics/1121438/poverty-headcount-rate-in-nigeria-by-state/> (Accessed: 20 April 2021).

World Bank (2020). Poverty and shared prosperity. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/34496/9781464816024.pdf> (Accessed: 20 April 2021).

World Bank (2021). World development indicators. Available at: <https://datacatalog.worldbank.org/dataset/world-development-indicators> (Accessed: 20 April 2021).

Reference List

Abdullahi, M.S. (2019). Three things Nigeria must do to end extreme poverty. Available at: <https://www.weforum.org/agenda/2019/03/90-million-nigerians-live-in-extreme-poverty-here-are-3-ways-to-bring-them-out/> (Accessed: 20 April 2021).

Alkire, S., Kanagaratnam, U. and Suppa, N. (2019). 'The Global Multidimensional Poverty Index (MPI) 2019', OPHI MPI Methodological Notes 47, Oxford Poverty and Human Development Initiative, University of Oxford.

Alkire, S., Kanagaratnam, U. and Suppa, N. (2020). 'The Global Multidimensional Poverty Index (MPI) 2020', OPHI MPI Methodological Notes 49, Oxford Poverty and Human Development Initiative, University of Oxford.

Barne and Wadhwa (2018). Year in Review: 2018 in 14 Charts. Available at: <https://www.worldbank.org/en/news/feature/2018/12/21/year-in-review-2018-in-14-charts> (Accessed: 20 April 2021).

FEWS NET (2021). Areas of Highest Concern. Available at: <https://fews.net/> (Accessed: 22 April 2021).