A space-data platform to analyse converging climate and environmental stressors

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Earth Blox

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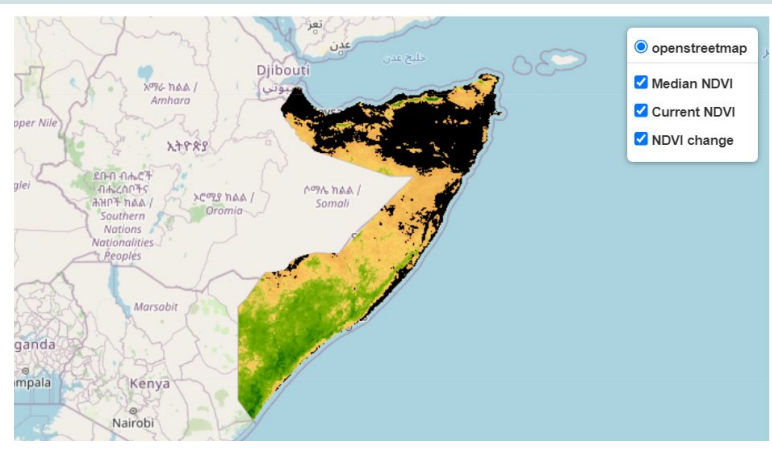
Abstract: Satellite data is a vital tool in monitoring the state of the planet. It is therefore important that it is accessible to everyone, in order for it to be fully utilised for addressing climate and environmental issues.
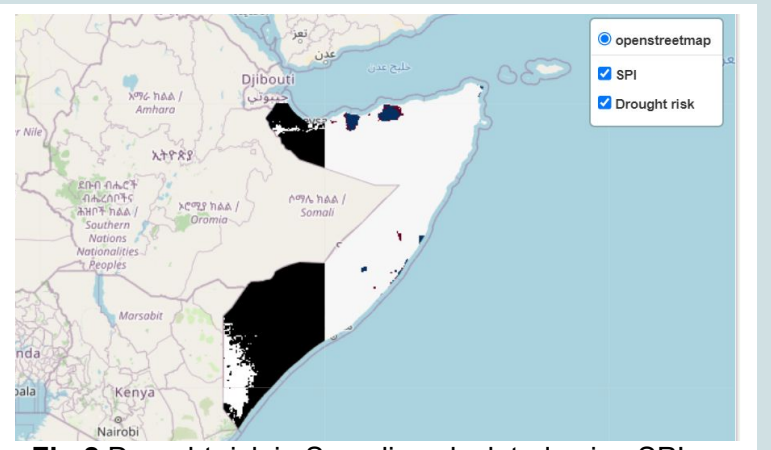
Introduction

Earth Blox's intention is to simplify access to earth observation data by removing the need for coding skills. This allows anyone to access data and is particularly important for those in environmental consultancies and decision-making positions. It is powered by Google Earth Engine, giving access to a large range of datasets.The UNEP STRATA platform aims to provide analysis of climate and environmental stressors in areas also experiencing socio-economic stress.

My responsibilities

I was primarily responsible for developing algorithms for indicators of climate and environmental stressors. This was achieved using the Python Earth Engine API. Algorithms were written for a range of indicators including deforestation, coastal inundation, NDVI, SPI and temperature. Furthermore, I aided exploration of API's to be used to obtain socio-economic data. This involved investigating access to the API as well as ensuring data was correctly formatted to be incorporated into Earth Engine.

Fig.1 NDVI change in Somalia.

Fig.2 Drought risk in Somalia calculated using SPI (Standardised Precipitation Index).

Outcomes

Through the work of my internship I have developed my skills in Python, particularly with the Earth Engine API. I have also developed my understanding of cloud based processing. Through research into the stressors to be used in indicators, I have furthered my knowledge of datasets available for use in Google Earth Engine. This has also allowed me to gain a better understanding of the climate and environmental stressors. Finally, I have developed soft skills in teamwork and collaborative coding using Google Colab notebooks.

Next steps

I would like to establish a career in earth observation building on the skills I have learnt both through my internship and masters degree. I would also like to continue developing my coding skills, particularly in Earth Engine.

Acknowledgments

I would like to thank everyone on the Earth Blox team.