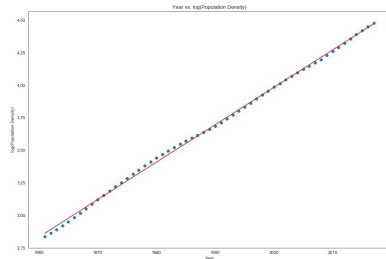


# Effects of Climate Change on Iraqi and Syrian Agricultural Industry

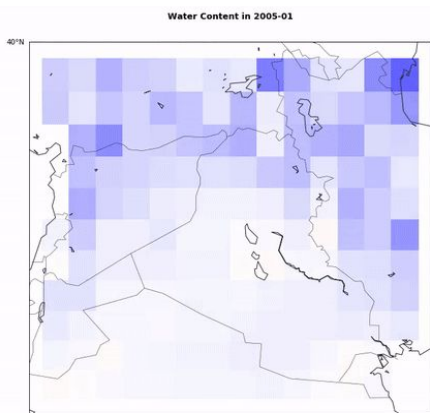
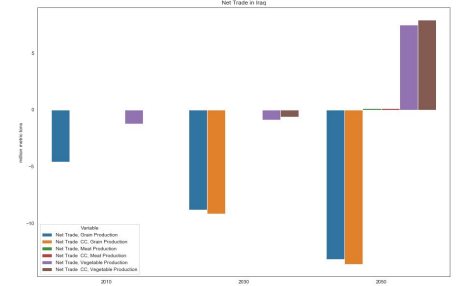
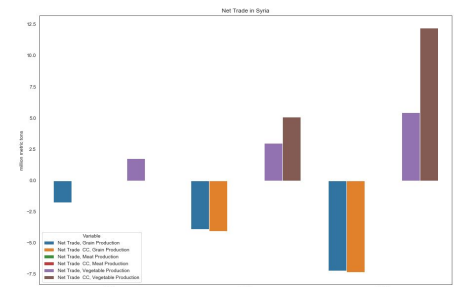
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While some of the first agricultural practices in history has its roots in the Mesopotamian region, its pedigree in modern day Iraq and Syria are now challenged by the threats of climate change. In our preliminary analysis of the region's economic, social, and climate data, we conclude that while climate change issues are not as discussed as the political and social unrests of the region, climate-based impacts of the changing agricultural landscape cannot be overlooked due to its effects on **population migration and standard of living**.



Using economic and social indicators data from the World Bank, we established baseline general trends despite signs of volatility likely due to conflicts, noting that the urban population is increasing at about **1% per year since the 1960s** until it plateaued in 1985 at roughly **70%**. Even during times of war, population density is growing exponentially, suggesting that the ever-growing amount of people are forming densely packed communities.

Furthermore, using agricultural production, and net trade projections to 2050 from the International Food Policy Research Institution, climate change correlates with reduced agricultural production and increases in food imports. Interestingly, in Syria's data, we see that vegetable production actually doubled by 2050 with climate change. Unfortunately, all other agricultural sectors suffer a loss in production. With Iraq's data, we see the same pattern: vegetable production increased (albeit marginally), while all others have a loss due to climate change. We believe that perhaps hotter weather simply provides a better condition for vegetables to grow, but damages the growth of all other products.



The reduction of rainfall over the past two decades has made matters worse. In 2006, Syria began to suffer its worst drought in 900 years, which caused a **steady decline in soil quality** over the next seven years. From our visualization on the left, we can see the effects of the drought on both Syria and Iraq, displaying a much redder map that represents poorer soil quality relative to 2005 and 2013-2014 when rainfall was at more regular levels. (<https://www.pbs.org/newshour/economy/a-major-contributor-to-the-syrian-conflict-climate-change>)

One issue raised is the exacerbation of a **core-periphery dependency**; with climate change negatively impacting agricultural production, Iraq and Syria would be forced to meet that gap through **net trade or foreign aid**. This inability to be self-sufficient means Syria is heavily relying on UN-led humanitarian efforts. Unfortunately, the Council on Foreign Affairs found in 2018 that Assad had taken control over those humanitarian efforts and was **using those funds to further war efforts and dodge sanctions**.

As more people migrate to urban centers in search of a steady income and the amount of agricultural land steadily decreases, the agricultural industry suffers from a **positive feedback loop** and farmers are unable to profit. This furthers the **production gap**, which is then exacerbated by the violence in the region that sows destruction on the country's arable land.