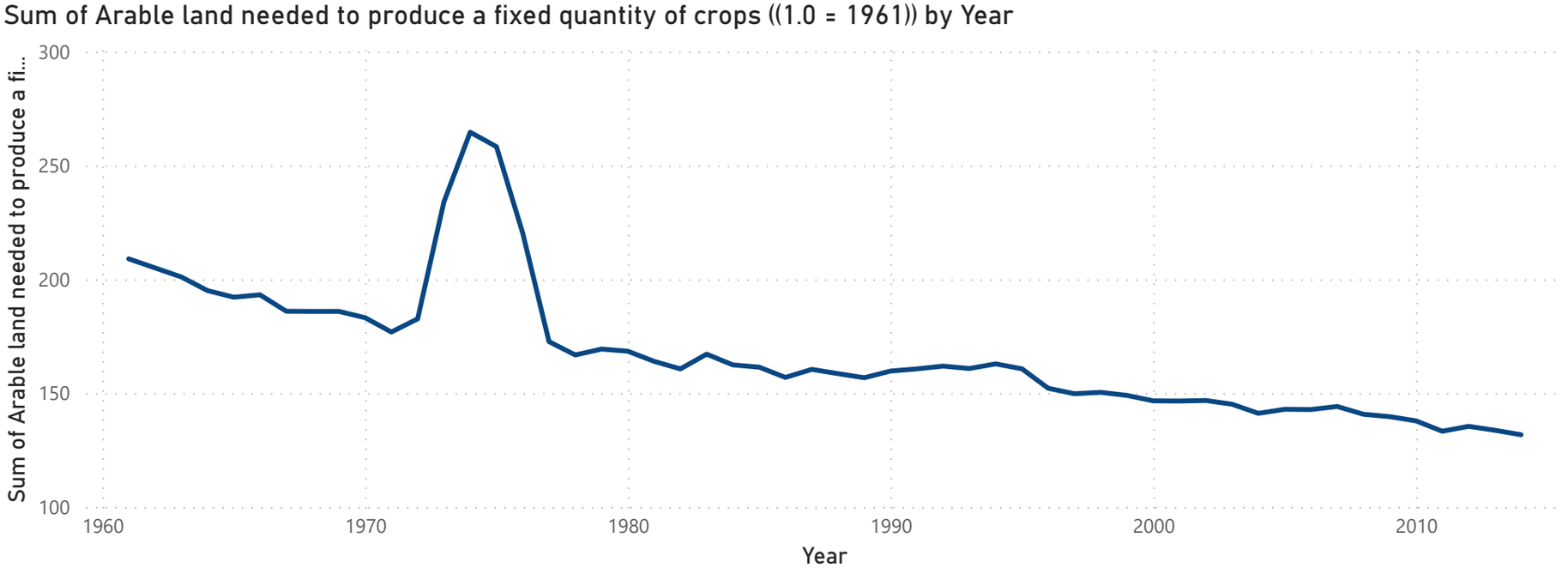
Global Crop Yields Analysis

Due to increasing world population there is a need to practice efficient farming with a focus on maximum output on whichever size of land there is to farm (Gilbert, 2014).This coupled with changing climate conditions has led to the need of smart farming using fertilizers to boost the crop yield production as well as tractors to mechanize crop production and improve yields. Nitrogen fertilizer is among the most important components for plant growth as it is an essential macronutrient for plant function.

Arable land



Since 1961 there was a steady decline in the sum of arable land needed to produce a fixed quantity of crops , this was followed by an increase between1972-1977 then a steady decline sic. this trend may be due to various factors such as more efficient agronomic practices such as fertilizer application and mechanization of farms that lead to better land utilization and higher yields another factor may be due to improved crop varieties hence less plants are grown to produce high yields.

Nitrogen fertilizer use(kilograms per hectare)

159.74K

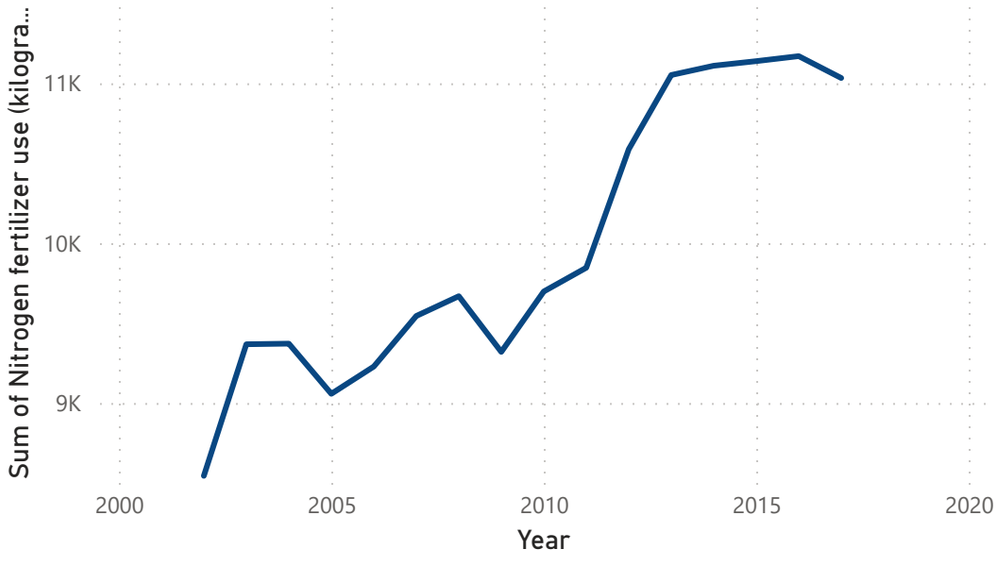
Sum of Nitrogen fertilizer use (kilograms per hectare)

53.00

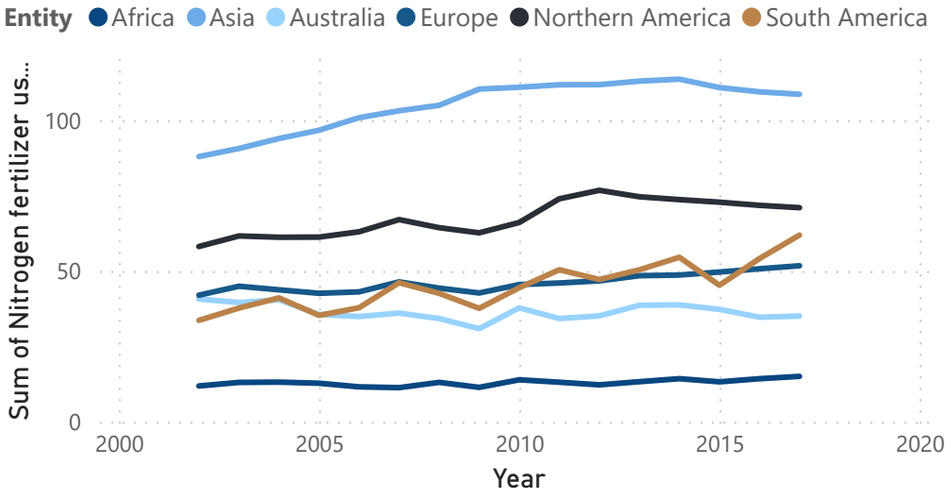
Average of Nitrogen fertilizer use (kilograms per hectare)

According to FAOSTAT 2021 the recommended Nitrogen fertilizer amount is 40 kilograms per hectare therefor the average amount of Nitrogen fertilizer used worldwide is within the right range though slightly above the recommened amount it is important to maintain the Nitrogen fertilizer levels at a safe amount in the soil for good production.

Sum of Nitrogen fertilizer use (kilograms per hectare) by Year

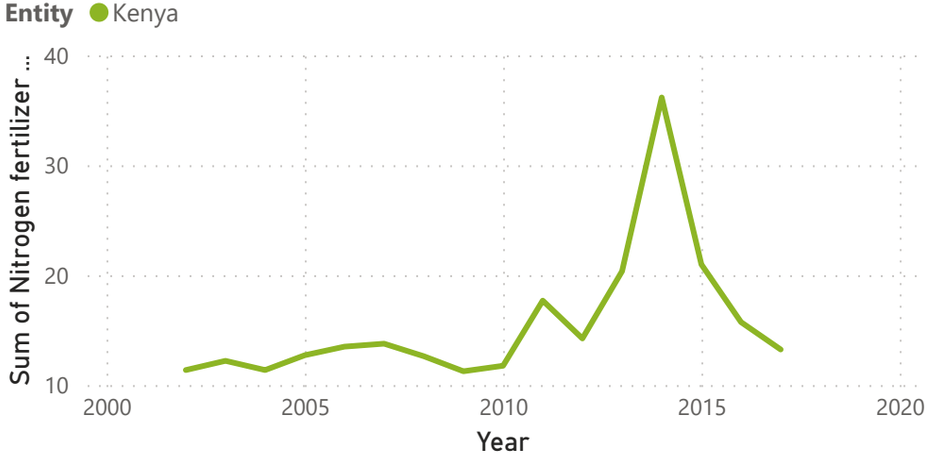


Sum of Nitrogen fertilizer use (kilograms per hectare) by Year and Entity



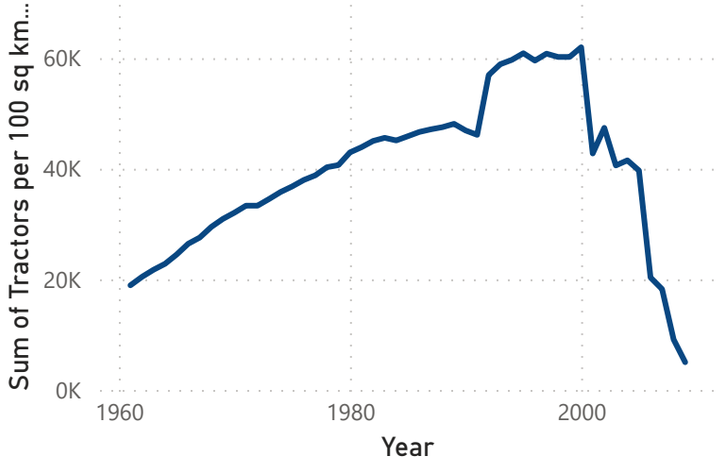
From the graphs shown above understand that generally the global sum of Nitrogen fertilizer used per year increases from 2010 but takes a slight dip in 2016. Among the continents Asia has the highest Nitrogen fertilizer use whereas Africa has the lowest fertilizer use this can also account for the low fertilizer use in Kenya which only seems to pick up shortly between 2013 and 2015 then gradually reduces. It is important for kenya and the rest of Africa to increase fertilizer use to improve the yield of cereals most of which are climate smart and can tolerate the changinging climatic conditions

Sum of Nitrogen fertilizer use (kilograms per hectare) by Year and Entity

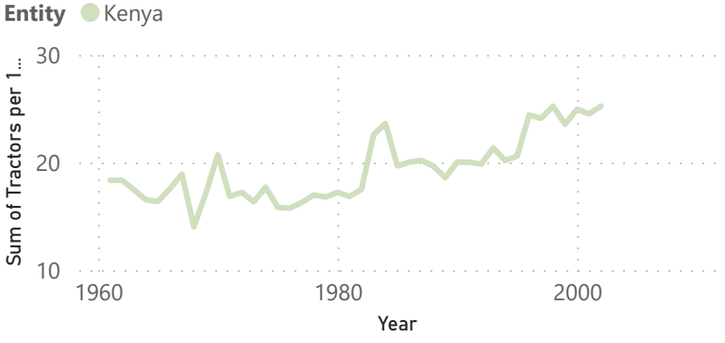


Tractor Inputs in Agriculture(tractors per 100sq Km arable land)

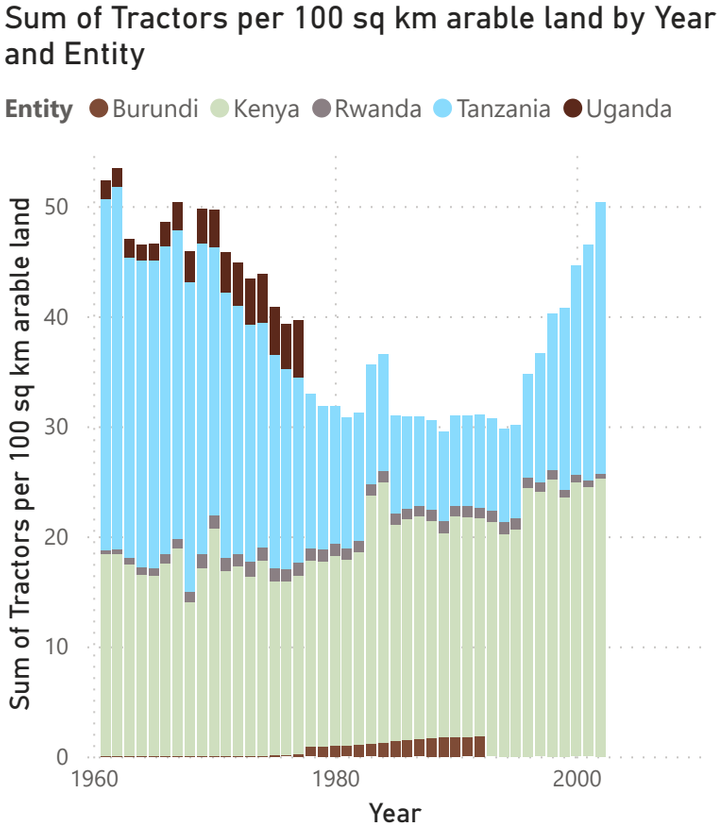
Sum of Tractors per 100 sq km arable land by Year



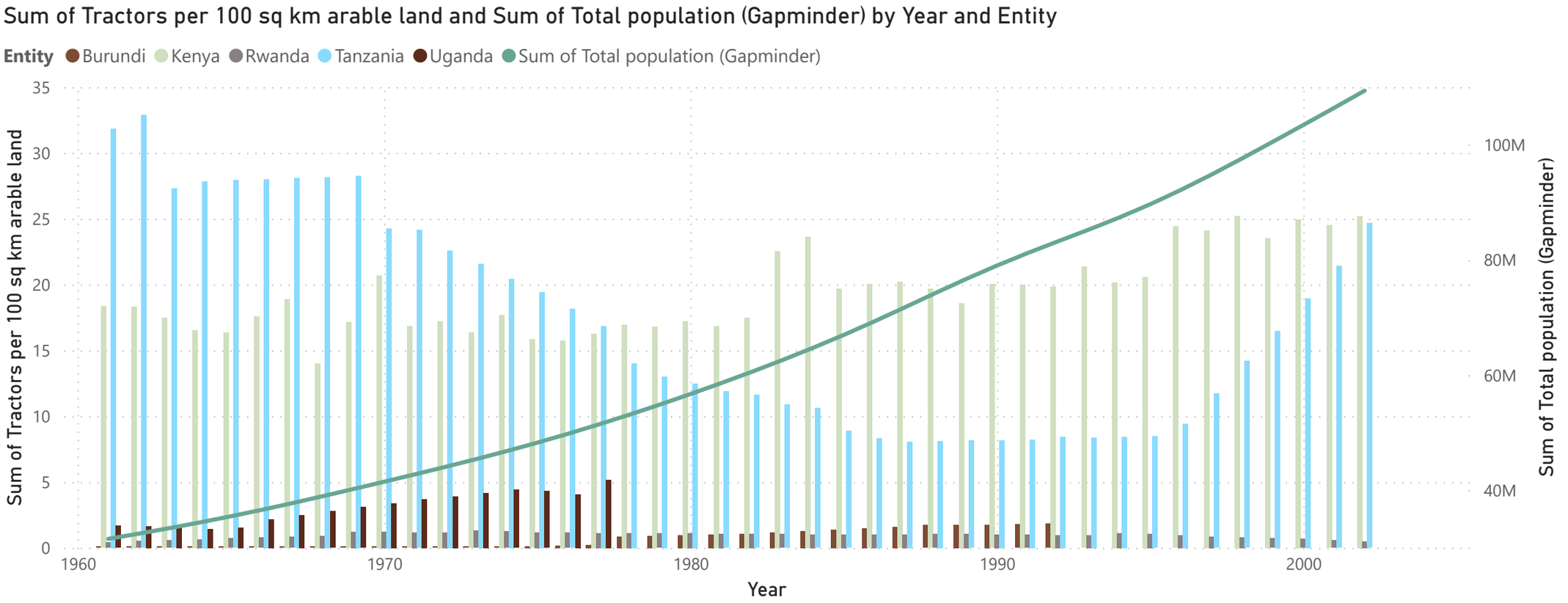
Sum of Tractors per 100 sq km arable land by Year and Entity



Sum of Tractors per 100 sq km arable land by Year and Entity



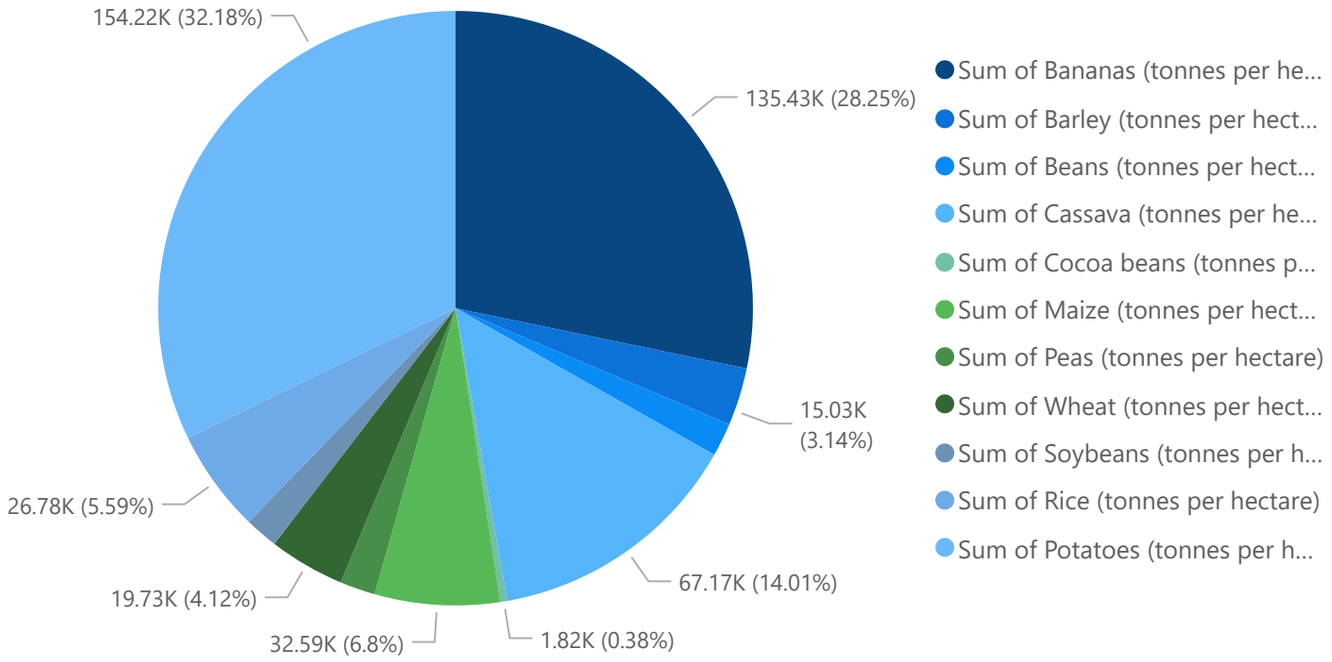
Globally the sum of tractors per 100sq Km arablle land has declined over the last 30 years, however among the East African community there has been a steady increase in tractor input over the last 40 years for especially for Kenya and Tanzania. In kenya there has been a slow increase in the input of tractors per 100sq Km



From the graph above we can tell that there is a steady increase in the sum of total population. This is important to note because the increase in total population in Kenya is accompanied by an increase in the number of tractors per 100 sq Km this is compared to the rest of East Africa that does not exhibit the same trend. This may be due to unsustainable farming therefore the farmers are not able to invest in the purchase of tractors to increase production.

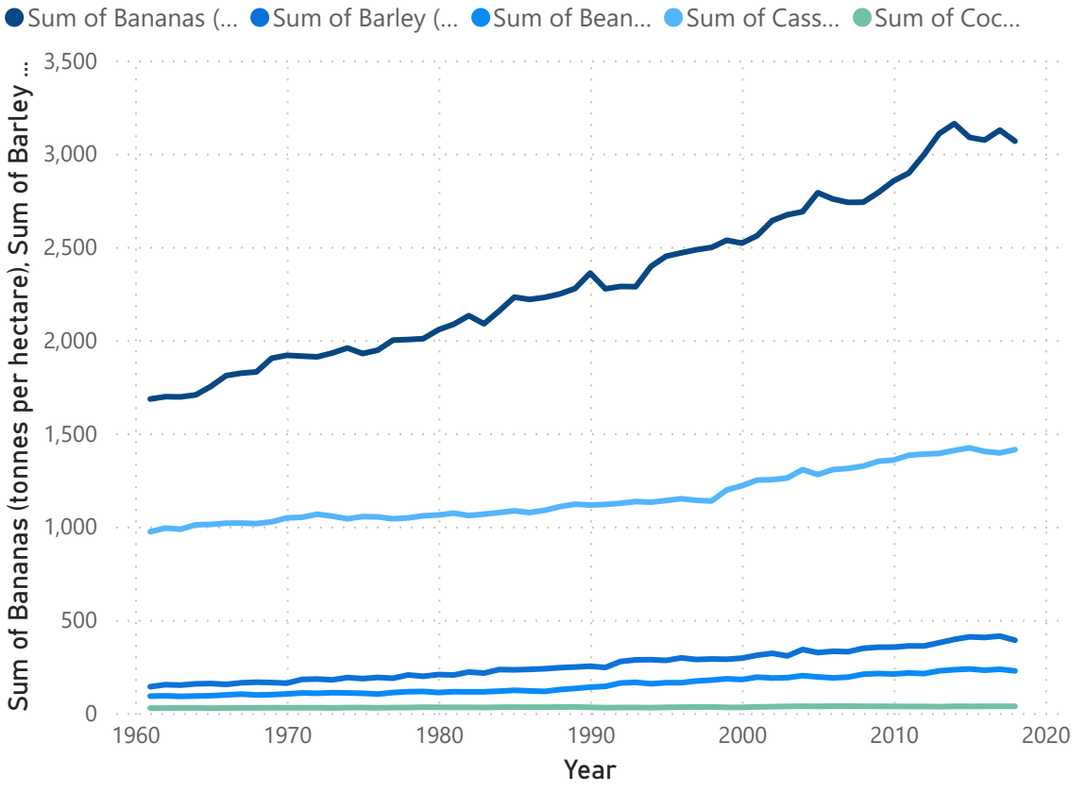
Key Crop Yields

Sum of Bananas (tonnes per hectare), Sum of Barley (tonnes per hectare), Sum of Beans (tonnes per hectare), Sum of Cassava (tonnes per hectare), Sum of Cocoa beans (tonnes per hectare), Sum of Maize (tonnes per hectare), Sum of Peas (tonnes per hectare), Sum of Wheat (tonnes per ...

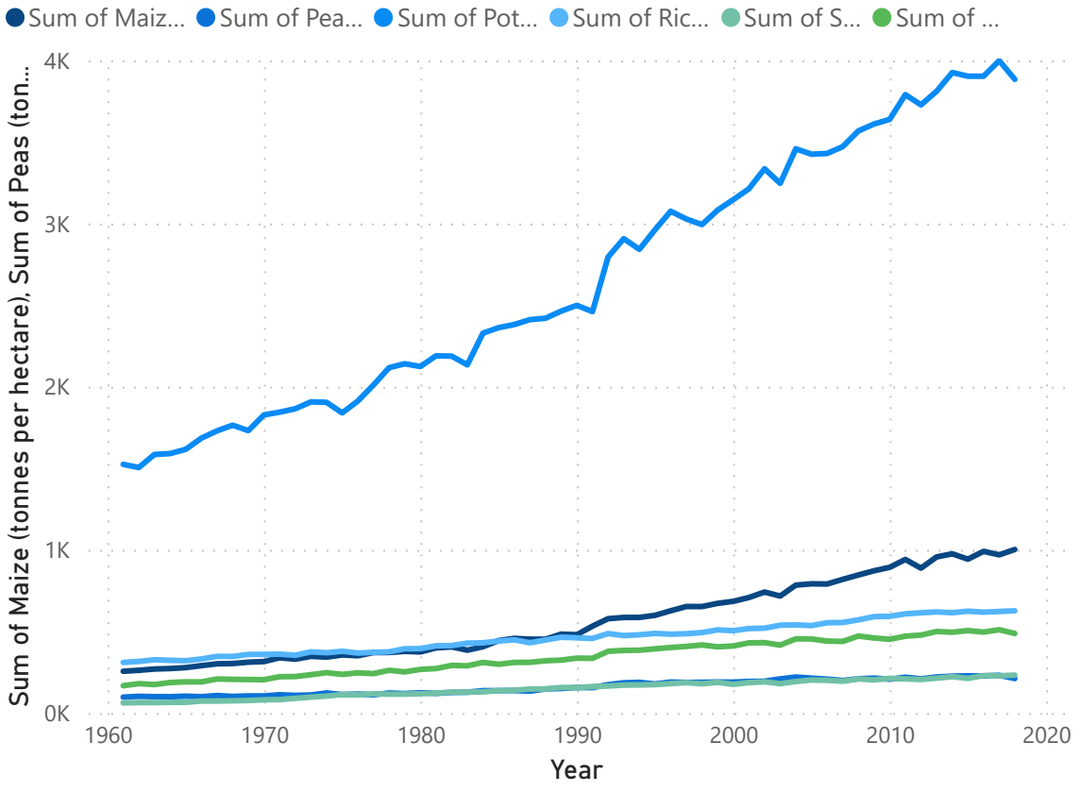


Globally there is production of 11 key crops shown in the Pie chart shown. Potatoes and bananas take up the two most produced crops globally with Potatoes at 32.18% which is 154.55K tones per hectare and Bananas take up second place at 28.25% which is 135.43K tones per hectare. the least produced crop is Soybeans at 1.8% which is roughly 8.63K tones per hectares

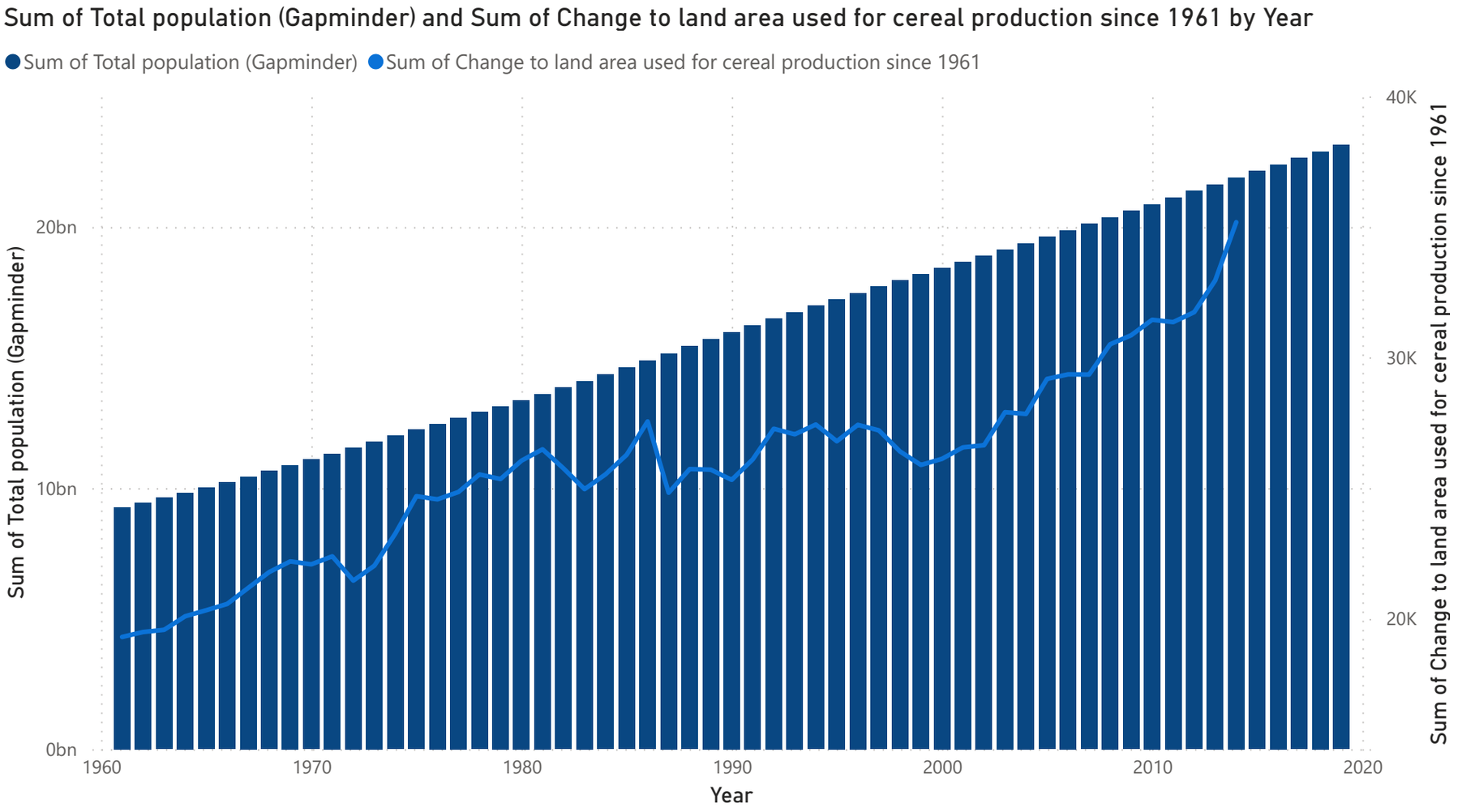
Sum of Bananas (tonnes per hectare), Sum of Barley (tonnes per hectare), Sum of Beans (tonnes per hectare), Sum of Cassava (tonnes per hectare) and Sum of Cocoa beans (tonnes per hectare) by Year



Sum of Maize (tonnes per hectare), Sum of Peas (tonnes per hectare), Sum of Potatoes (tonnes per hectare), Sum of Rice (tonnes per hectare), Sum of Soybeans (tonnes per hectare) and Sum of Wheat (tonnes per hectare) by ...



Since 1961 the production of cassava, rice and bananas has increased steadily whilst the other key crops growth curve plateau.



There is a steady increase in the sum of the total population since 1961 this with a similar increase in the change in land are used for crop production. This is a positive observation because the increase population requires food and there being an increase in the production of crops leads to food security and economic development.