research

2022-05-20

```r
# loading libraries
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 4.1.3
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.6      v purrr   0.3.4
## v tibble  3.1.6      v dplyr   1.0.8
## v tidyr   1.2.0      v stringr 1.4.0
## v readr   2.1.2      v forcats 0.5.1
```

```
## Warning: package 'ggplot2' was built under R version 4.1.3
```

```
## Warning: package 'tibble' was built under R version 4.1.3
```

```
## Warning: package 'tidyr' was built under R version 4.1.3
```

```
## Warning: package 'readr' was built under R version 4.1.3
```

```
## Warning: package 'dplyr' was built under R version 4.1.3
```

```
## Warning: package 'forcats' was built under R version 4.1.3
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```r
library(ggplot2)
library(ggpubr)
```

```
## Warning: package 'ggpubr' was built under R version 4.1.3
```

```r
# reading csv file
dietary_csv <- read.csv("Data/dietary-composition-by-country.csv")
```

Research Question 1 # How much FAO i.e. Fats Animal Oil is in Vegetable Oil in Australia that is consumed by people in different year?

```r
# filter the data
country_vege_oils <- dietary_csv %>%
  filter(Entity == "Australia")
# selecting particular columns
selection <- country_vege_oils %>% select(Year, Vegetable.Oils..FAO..2017..)


# arranging in descending order based on Vegetable oil FAO
arrange(selection ,desc(Vegetable.Oils..FAO..2017..))
```

```
##      Year Vegetable.Oils..FAO..2017..
## 1  2012                            569
## 2  2013                            550
## 3  2010                            547
## 4  2011                            530
## 5  2004                            524
## 6  2009                            522
## 7  2005                            516
## 8  2006                            508
## 9  2007                            488
## 10 2001                            479
## 11 2008                            479
## 12 1999                            459
## 13 2002                            450
## 14 2000                            441
## 15 1992                            428
## 16 1997                            427
## 17 1993                            426
## 18 2003                            426
## 19 1998                            418
## 20 1991                            403
## 21 1996                            400
## 22 1994                            398
## 23 1995                            398
## 24 1990                            365
## 25 1989                            354
## 26 1987                            335
## 27 1988                            334
## 28 1986                            311
## 29 1985                            299
## 30 1980                            288
## 31 1982                            285
## 32 1983                            285
## 33 1981                            273
## 34 1979                            265
## 35 1984                            258
## 36 1977                            232
## 37 1978                            232
## 38 1975                            188
## 39 1976                            186
## 40 1974                            181
## 41 1973                            175
## 42 1972                            167
## 43 1970                            150
## 44 1971                            136
## 45 1969                            114
## 46 1966                            113
## 47 1967                            106
## 48 1968                            105
## 49 1965                            103
## 50 1964                            100
## 51 1963                             92
## 52 1961                             78
## 53 1962                             78
```

Research Question 2. # Checking the FAO in maize, rice and wheat over the years in single figure.

```
# plotting Maize FAO on different years
maize_plot <- ggplot(country_vege_oils, aes(x = Year, y = Maize..FAO..2017..)) +
  geom_point()
```

```
# plotting Rice FAO on different years
rice_plot <- ggplot(country_vege_oils, aes(x = Year, y = Rice..FAO..2017..)) +
  geom_point()
```
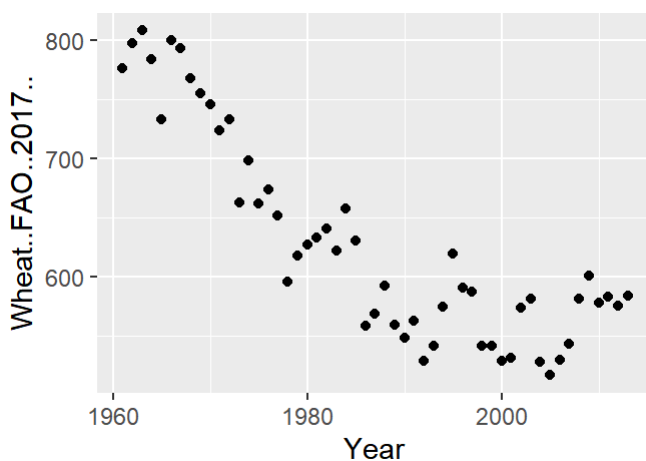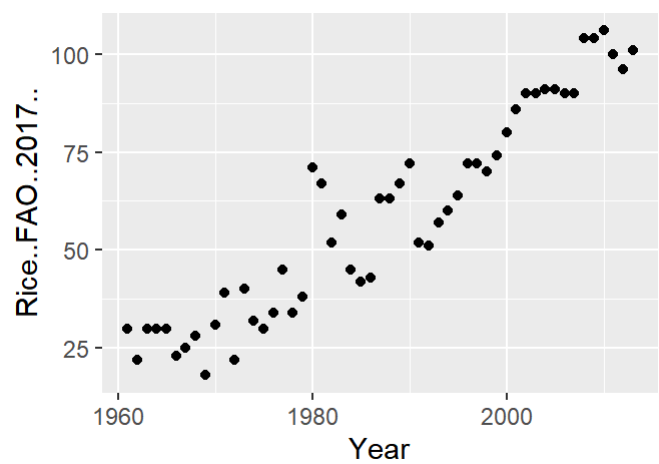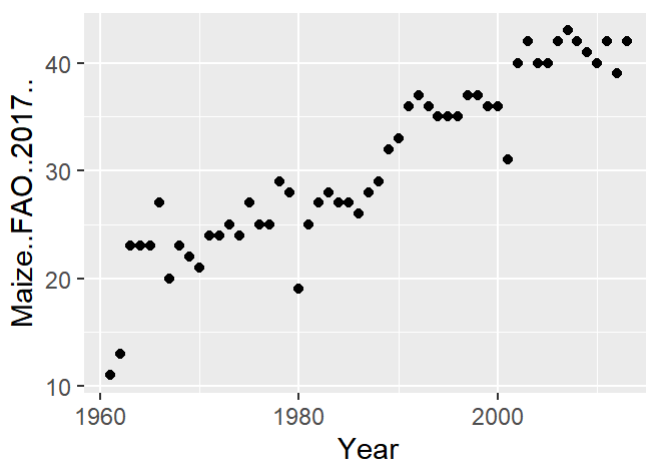
```
# plotting Wheat FAO on different years
wheat_plot <- ggplot(country_vege_oils, aes(x = Year, y = Wheat..FAO..2017..)) +
  geom_point()
```

```
# joining three plots as one figure
ggarrange(maize_plot, rice_plot, wheat_plot)
```


Conclusion: - Maize and Rice FAO is higher in later years but the wheat growth becomes less in later years in Australia.

- Same as maize and rice, Vegetable FAO is growing in later years in Australia.