In [1]:
```
# Import the required libraries
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
# Load the Agriculture land aera data set dataset
agr= pd.read_csv('/content/Agriculture.csv')
```

In [3]:
```
#start from column 4
agr=agr.iloc[4:]
```

In [4]:
```
#show the table
agr.head()
```

Out[4]:

	Country Name	Country Code	Indicator Name	Indicator Code	1960	1961	1962	1963	1964
4	Aruba	ABW	Agricultural land (% of land area)	AG.LND.AGRI.ZS	NaN	11.111111	11.111111	11.111111	11.111111
5	Africa Eastern and Southern	AFE	Agricultural land (% of land area)	AG.LND.AGRI.ZS	NaN	43.672679	43.645948	43.681124	43.651032
6	Afghanistan	AFG	Agricultural land (% of land area)	AG.LND.AGRI.ZS	NaN	57.745918	57.837821	57.914407	58.010906
7	Africa Western and Central	AFW	Agricultural land (% of land area)	AG.LND.AGRI.ZS	NaN	33.441755	33.557985	33.814094	33.942227
8	Angola	AGO	Agricultural land (% of land area)	AG.LND.AGRI.ZS	NaN	45.857063	45.881126	45.897169	45.921232

5 rows × 66 columns

In [5]:
```
#skips the 1st 4 columns of the table for year
agr_year=agr.iloc[:,4:]
```

In [6]:
```
#show the table of year
agr_year.head()
```

Out[6]:

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1
4	NaN	11.111111	11.111111	11.111111	11.111111	11.111111	11.111111	11.111111	11.111111	11.111
5	NaN	43.672679	43.645948	43.681124	43.651032	43.622251	43.647096	43.655131	43.689406	43.744

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1
6	NaN	57.745918	57.837821	57.914407	58.010906	58.013969	58.072175	58.173268	58.174800	58.199
7	NaN	33.441755	33.557985	33.814094	33.942227	34.208301	33.937354	34.155213	34.255260	34.873
8	NaN	45.857063	45.881126	45.897169	45.921232	45.937274	45.961338	45.985401	46.009465	46.041

5 rows × 62 columns

In [7]:
```
#tranpose the year columns
agr_year.T
```

Out[7]:

	4	5	6	7	8	9	10	11	12
1960	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
1961	11.111111	43.672679	57.745918	33.441755	45.857063	44.963504	55.319149	27.835643	2.928752
1962	11.111111	43.645948	57.837821	33.557985	45.881126	44.963504	55.319149	27.826564	2.928752
1963	11.111111	43.681124	57.914407	33.814094	45.897169	45.000000	55.319149	27.845522	2.928752
1964	11.111111	43.651032	58.010906	33.942227	45.921232	44.890511	55.319149	27.847925	2.928752
...	...	...	...	...	...	...	...	...	...
2017	11.111111	44.042629	58.067580	39.930699	45.237371	42.670839	40.042553	36.560345	5.404112
2018	11.111111	44.117980	58.081365	39.953545	45.682594	42.849672	40.063830	36.563558	5.375246
2019	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
2020	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
2021	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

62 rows × 266 columns

In [8]:
```
#finding the sum of year at zero axis
sum_of_agr_year=agr_year.sum(axis=0)
sum_of_agr_year
```

Out[8]:
```
1960       0.000000
1961    7922.749241
1962    7931.156236
1963    7966.797365
1964    7986.620284
           ...
2017    9581.793287
2018    9578.527843
2019       0.000000
2020       0.000000
2021       0.000000
Length: 62, dtype: float64
```

In [9]:
```
#assign new variable to insert in to new col
agr_year_land=pd.DataFrame(sum_of_agr_year)
agr_year_land
```

Out[9]:

	0
1960	0.000000
1961	7922.749241
1962	7931.156236
1963	7966.797365
1964	7986.620284
...	...
2017	9581.793287
2018	9578.527843
2019	0.000000
2020	0.000000
2021	0.000000

62 rows × 1 columns

In [10]:
```
#drop the NAN fromt he table
agr_year_land=agr_year_land.dropna()
agr_year_land
```

Out[10]:

	0
1960	0.000000
1961	7922.749241
1962	7931.156236
1963	7966.797365
1964	7986.620284
...	...
2017	9581.793287
2018	9578.527843
2019	0.000000
2020	0.000000
2021	0.000000

62 rows × 1 columns

In [11]:

```
#change the data type of the  float to int
agr_year_land['year']=agr_year_land.index.astype('int')
agr_year_land
```

Out[11]:

	0	year
1960	0.000000	1960
1961	7922.749241	1961
1962	7931.156236	1962
1963	7966.797365	1963
1964	7986.620284	1964
...	...	...
2017	9581.793287	2017
2018	9578.527843	2018
2019	0.000000	2019
2020	0.000000	2020
2021	0.000000	2021

62 rows × 2 columns

In [12]:

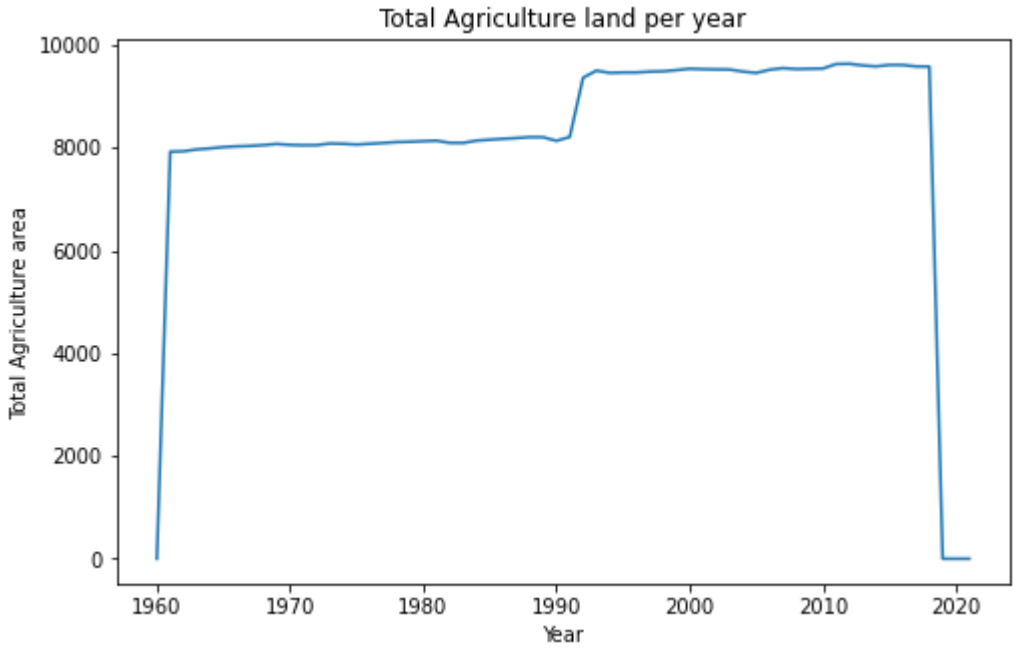
```
#data type check
agr_year_land.dtypes
```

Out[12]:

```
0       float64
year      int64
dtype: object
```

In [19]:

```
#ploting
plt.figure(figsize=(8,5))
plt.plot(agr_year_land['year'],agr_year_land[0])
plt.title('Total Agriculture land per year')
plt.xlabel('Year')
plt.ylabel('Total Agriculture area')
plt.show()
```



In [21]:
```
#now plotting the countries name code or 1998 year
agr_country_1998=agr[['Country Name','Country Code','1998']]
```

In [24]:
```
agr_country_1998
```

Out[24]:

	Country Name	Country Code	1998
4	Aruba	ABW	11.111111
5	Africa Eastern and Southern	AFE	42.106997
6	Afghanistan	AFG	58.001716
7	Africa Western and Central	AFW	36.768123
8	Angola	AGO	37.419232
...	...	...	...
265	Kosovo	XKX	NaN
266	Yemen, Rep.	YEM	44.851033
267	South Africa	ZAF	80.775540
268	Zambia	ZMB	29.627786
269	Zimbabwe	ZWE	37.533928

266 rows × 3 columns

In [55]:
```
#selected the some countries
agr_country_code_1998=['CHN','USA','PAK','AFG','RUS','GBR']
```

In [26]:
```
#country name and code with area land in 1998
```

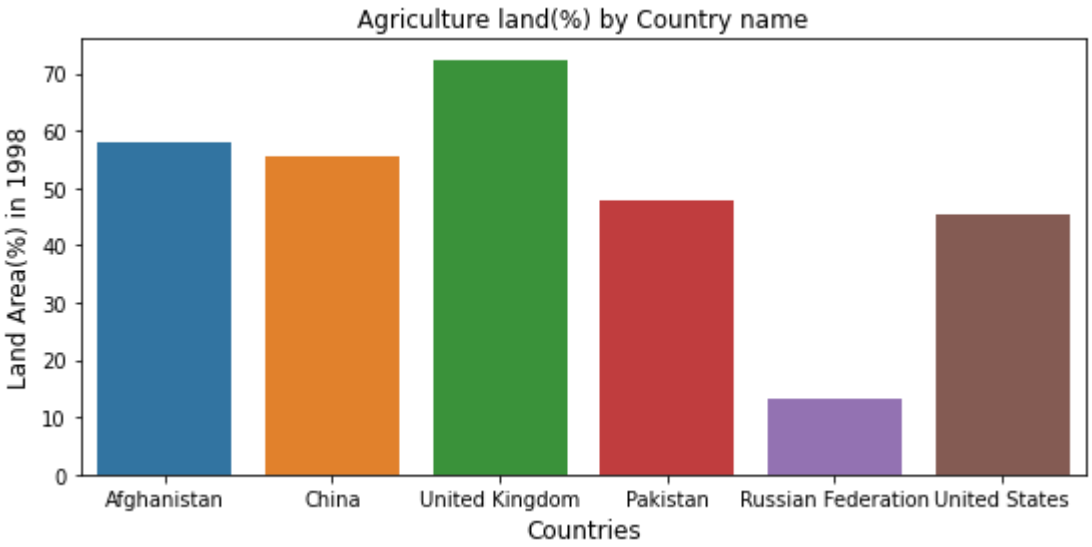
```
agr_year_country_1998=agr_country_1998[agr_country_1998['Country Code'].isin(agr_countr
agr_year_country_1998
```

Out[26]:

	Country Name	Country Code	1998
6	Afghanistan	AFG	58.001716
44	China	CHN	55.570781
85	United Kingdom	GBR	72.409375
188	Pakistan	PAK	47.685762
206	Russian Federation	RUS	13.264332
255	United States	USA	45.265838

In [54]:

```
#PLOTTING 1998 area land
fig, ax = plt.subplots(figsize=(9,4))
sns.barplot(x="Country Name", y="1998", data=agr_year_country_1998)
ax.set_title("Agriculture land(%) by Country name",fontdict= {'size':12})
ax.xaxis.set_label_text("Countries",fontdict= {'size':12})
ax.yaxis.set_label_text("Land Area(%) in 1998",fontdict= {'size':12})
plt.show()
```



In [45]:

```
#now plotting the countries name code or 2018 year
agr_country_2018=agr[['Country Name','Country Code','2018']]
```

In [50]:

```
#table of 2018 countries with area land
agr_country_2018
```

Out[50]:

	Country Name	Country Code	2018
4	Aruba	ABW	11.111111
5	Africa Eastern and Southern	AFE	44.117980
6	Afghanistan	AFG	58.081365

	Country Name	Country Code	2018
7	Africa Western and Central	AFW	39.953545
8	Angola	AGO	45.682594
...	...	...	...
265	Kosovo	XKX	NaN
266	Yemen, Rep.	YEM	44.297403
267	South Africa	ZAF	79.417850
268	Zambia	ZMB	32.063923
269	Zimbabwe	ZWE	41.876696

266 rows × 3 columns

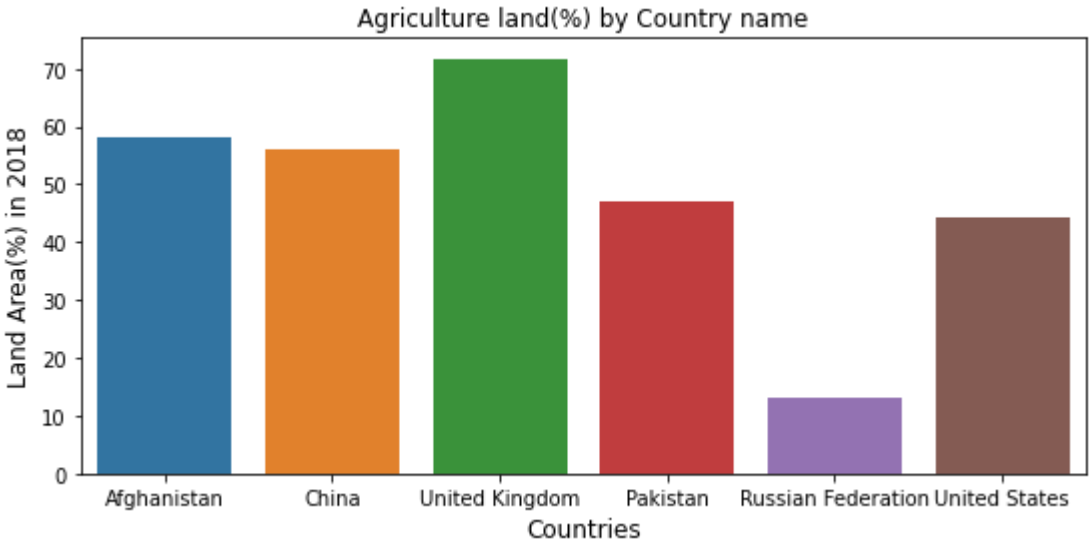
In [51]:
```
#selected the countries
agr_country_code_2018=['CHN','USA','PAK','AFG','RUS','GBR']
```

In [52]:
```
#print the chart of the selected countries and the land area in 2018
agr_year_country_2018=agr_country_2018[agr_country_2018['Country Code'].isin(agr_countr
agr_year_country_2018
```

Out[52]:

	Country Name	Country Code	2018
6	Afghanistan	AFG	58.081365
44	China	CHN	56.079083
85	United Kingdom	GBR	71.718520
188	Pakistan	PAK	47.089041
206	Russian Federation	RUS	13.158436
255	United States	USA	44.363367

In [53]:
```
#plotting
fig, ax = plt.subplots(figsize=(9,4))
sns.barplot(x="Country Name", y="2018", data=agr_year_country_2018)
ax.set_title("Agriculture land(%) by Country name",fontdict= {'size':12})
ax.xaxis.set_label_text("Countries",fontdict= {'size':12})
ax.yaxis.set_label_text("Land Area(%) in 2018",fontdict= {'size':12})
plt.show()
```


Agriculture land(%) by Country name
Land Area(%) in 2018
0
10
20
30
40
50
60
70
Afghanistan
China
United Kingdom
Pakistan
Russian Federation
United States
Countries

In [ ]: