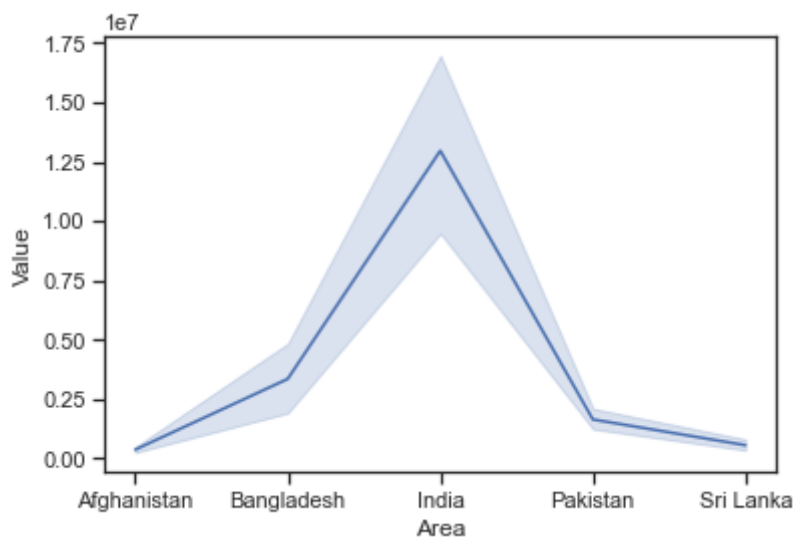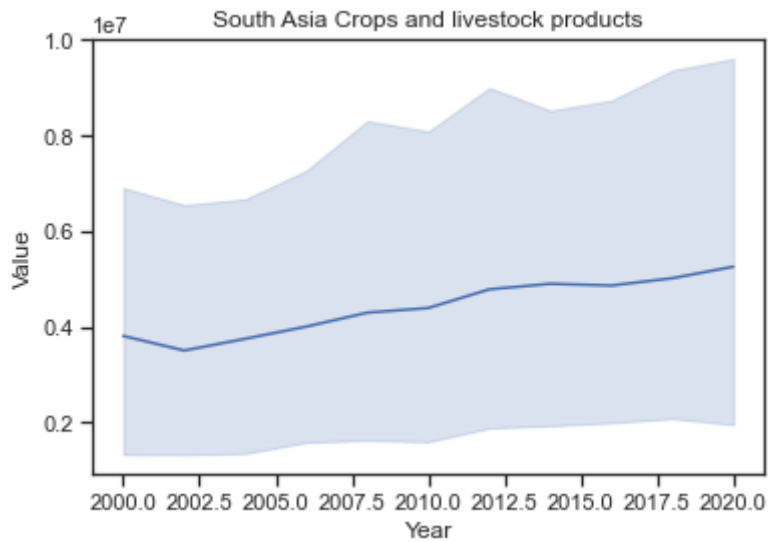# Plots for FAOSTAT data

Line plot

In [ ]:
```python
# import libraries
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.lineplot(x="Area", y="Value", data=asia1)
plt.show()
```


Adding title of figure

In [ ]:
```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.lineplot(x="Year", y="Value", data=asia1)
plt.title("South Asia Crops and livestock products")
plt.show()
```
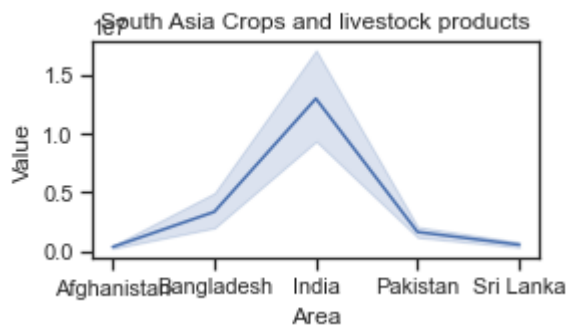
Specifying size of figure

```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
#change figure
plt.figure(figsize=(4,2))
# draw a line plot
sns.lineplot(x="Area", y="Value", data=asia1)
plt.title("South Asia Crops and livestock products")
plt.show()
```
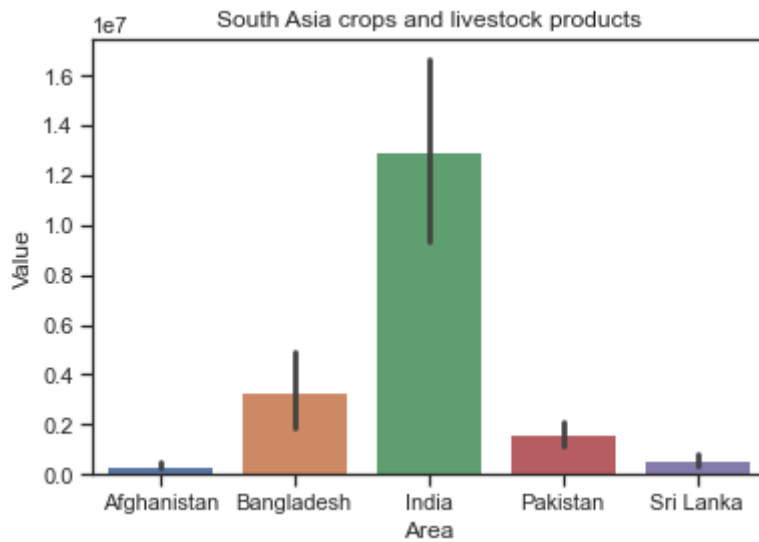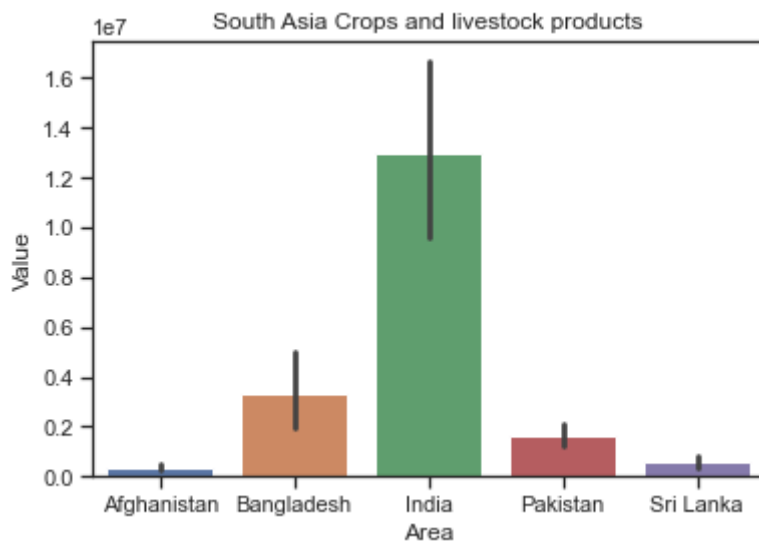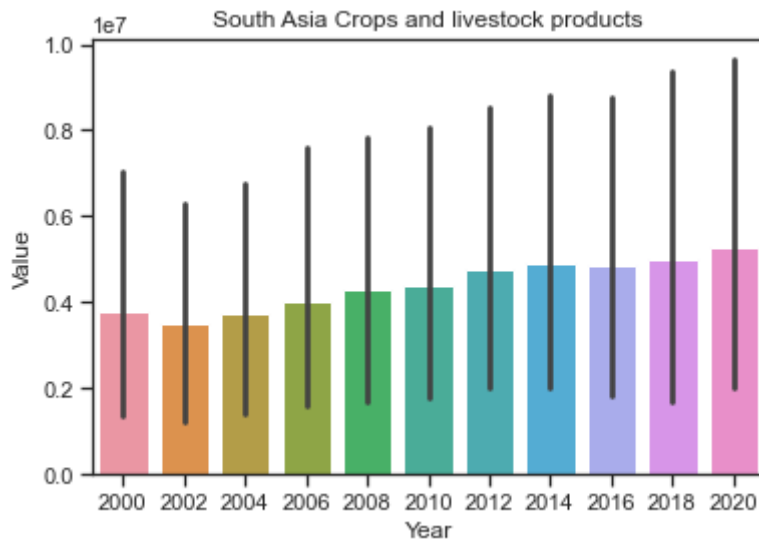

Bar plots

```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Area", y="Value", data=asia1)
plt.title("South Asia crops and livestock products")
plt.show()
```

South Asia crops and livestock products

In [ ]:
```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Area", y="Value", data=asia1)
plt.title("South Asia Crops and livestock products")
plt.show()
```


South Asia Crops and livestock products

In [ ]:
```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Year", y="Value", data=asia1)
plt.title("South Asia Crops and livestock products")
plt.show()
```
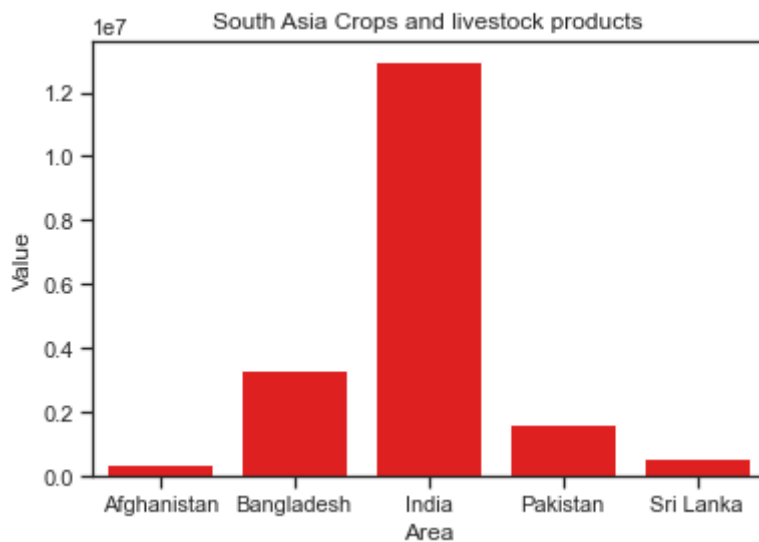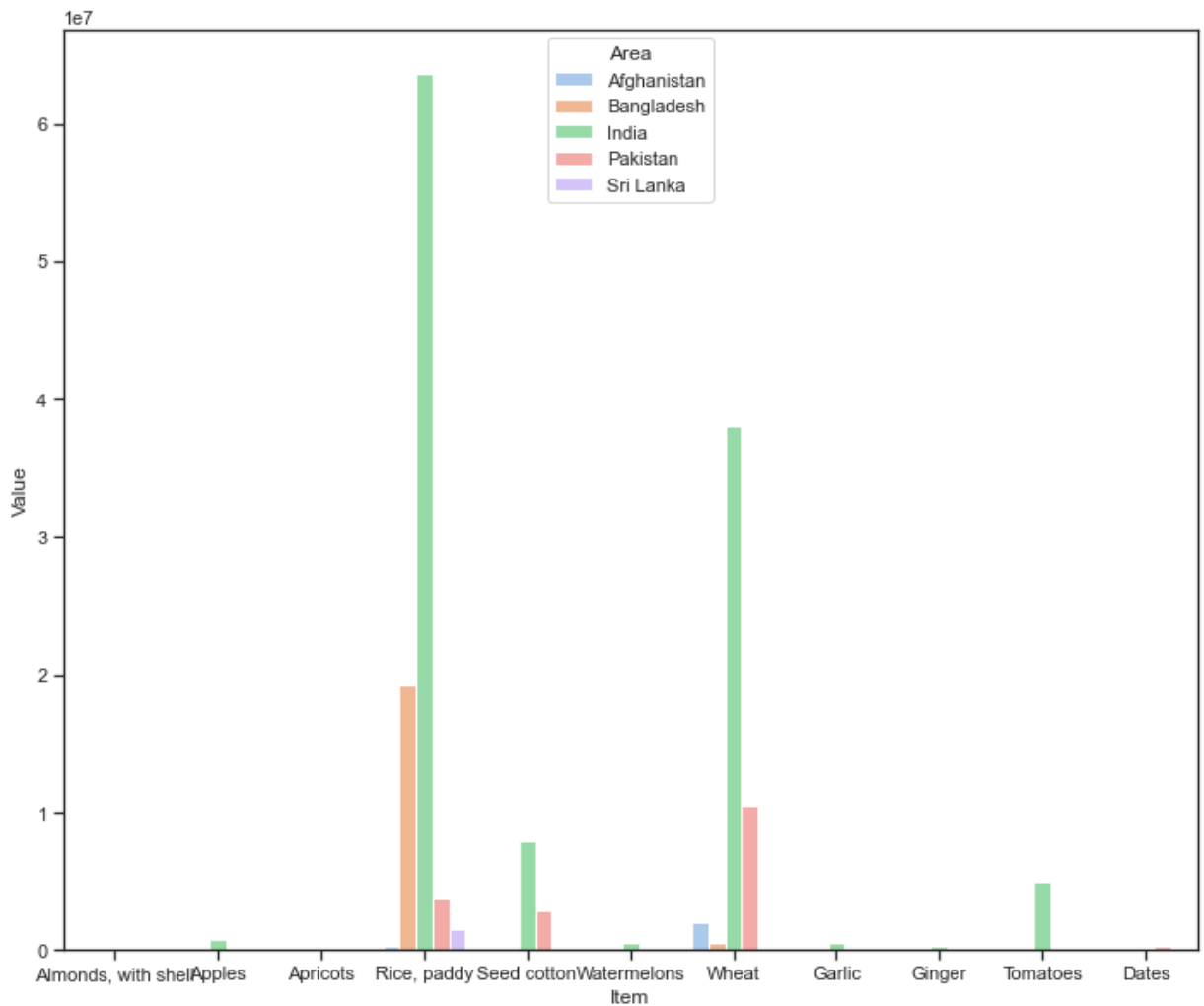
South Asia Crops and livestock products

```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Area", y="Value", data=asia1, color="red", ci=None)
plt.title("South Asia Crops and livestock products")
plt.show()
```


South Asia Crops and livestock products

```python
# import libraries
import seaborn as sns
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
plt.figure(figsize=(12,10))
# draw a line plot
sns.barplot(x="Item", y="Value", data=asia1, hue="Area", color="red", ci=None,
            palette="pastel")
plt.show()
```
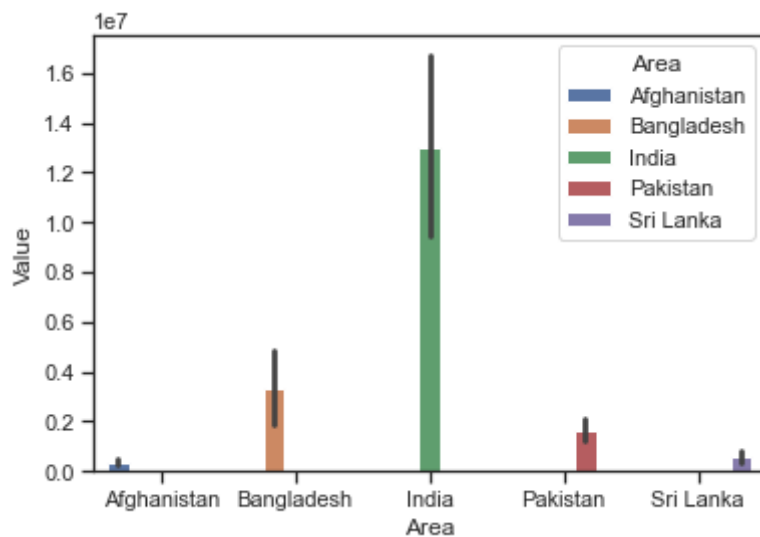
```python
# import libraries
import seaborn as sns
from numpy import mean
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Area", y="Value", data=asia1, hue="Area", estimator=mean)
plt.show()
```



```python
# import libraries
```

```python
import seaborn as sns
from numpy import mean
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
plt.figure(figsize=(10,6))
# draw a line plot
sns.barplot(x="Area", y="Value", data=asia1, hue="Item", estimator=mean,
            saturation=1)
plt.show()
```
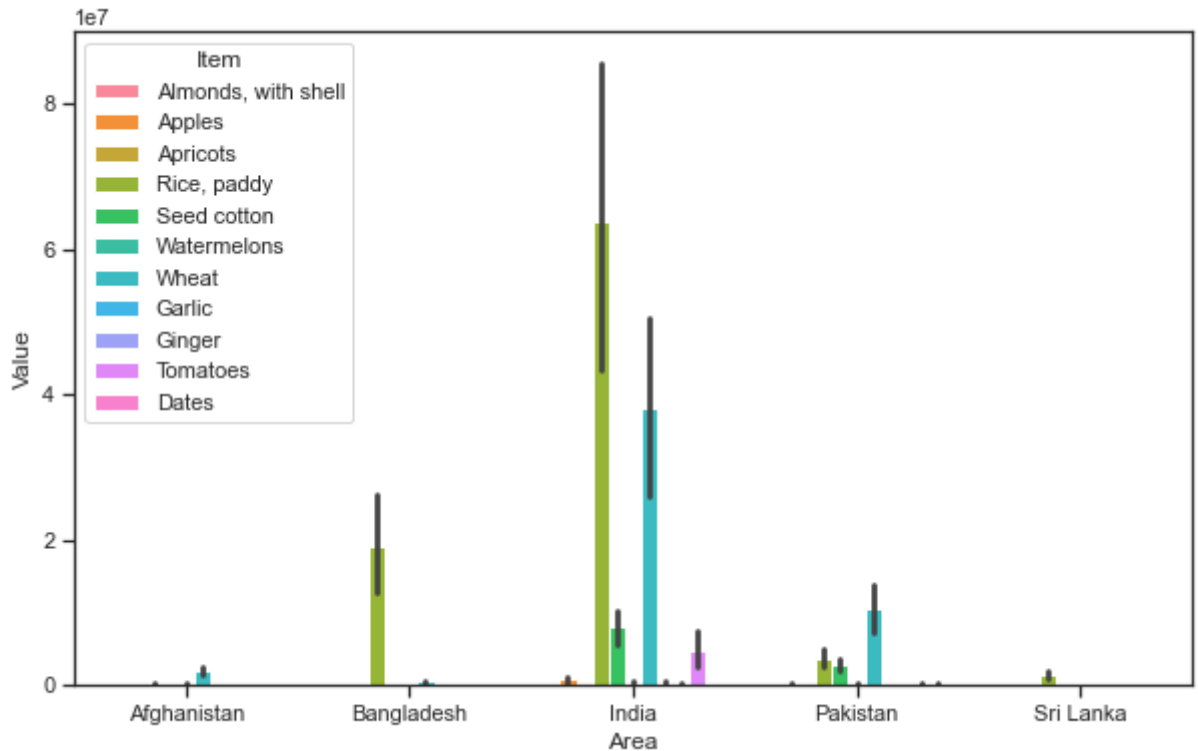


```python
In [ ]:
# horizontal plot
# import libraries
import seaborn as sns
from numpy import mean
import matplotlib.pyplot as plt
# load data set
asia1 = pd.read_csv("asia1.csv")
asia1
# draw a line plot
sns.barplot(x="Year", y="Value", data=asia1, hue="Area", estimator=mean,
            saturation=1)
plt.show()
```
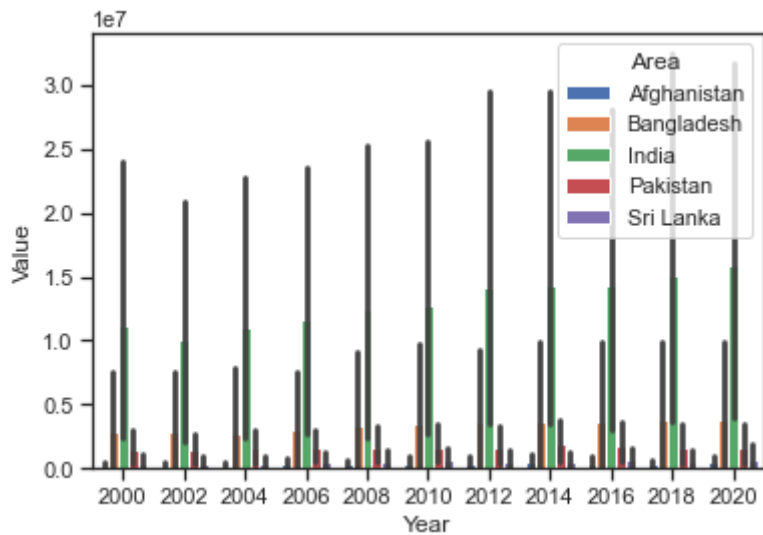
```
In [ ]:  # import libraries
         import seaborn as sns
         import matplotlib.pyplot as plt
         # load data set
         asia1 = pd.read_csv("asia1.csv")
         asia1
         plt.figure(figsize=(10,8))
         # draw a line plot
         sns.barplot(x="Area", y="Value", data=asia1, linewidth=5, facecolor=(0.1, 0.3, 0.3,
                   errcolor=".4", edgecolor=".2")
         plt.show()
```



```
In [ ]:  #import library
```
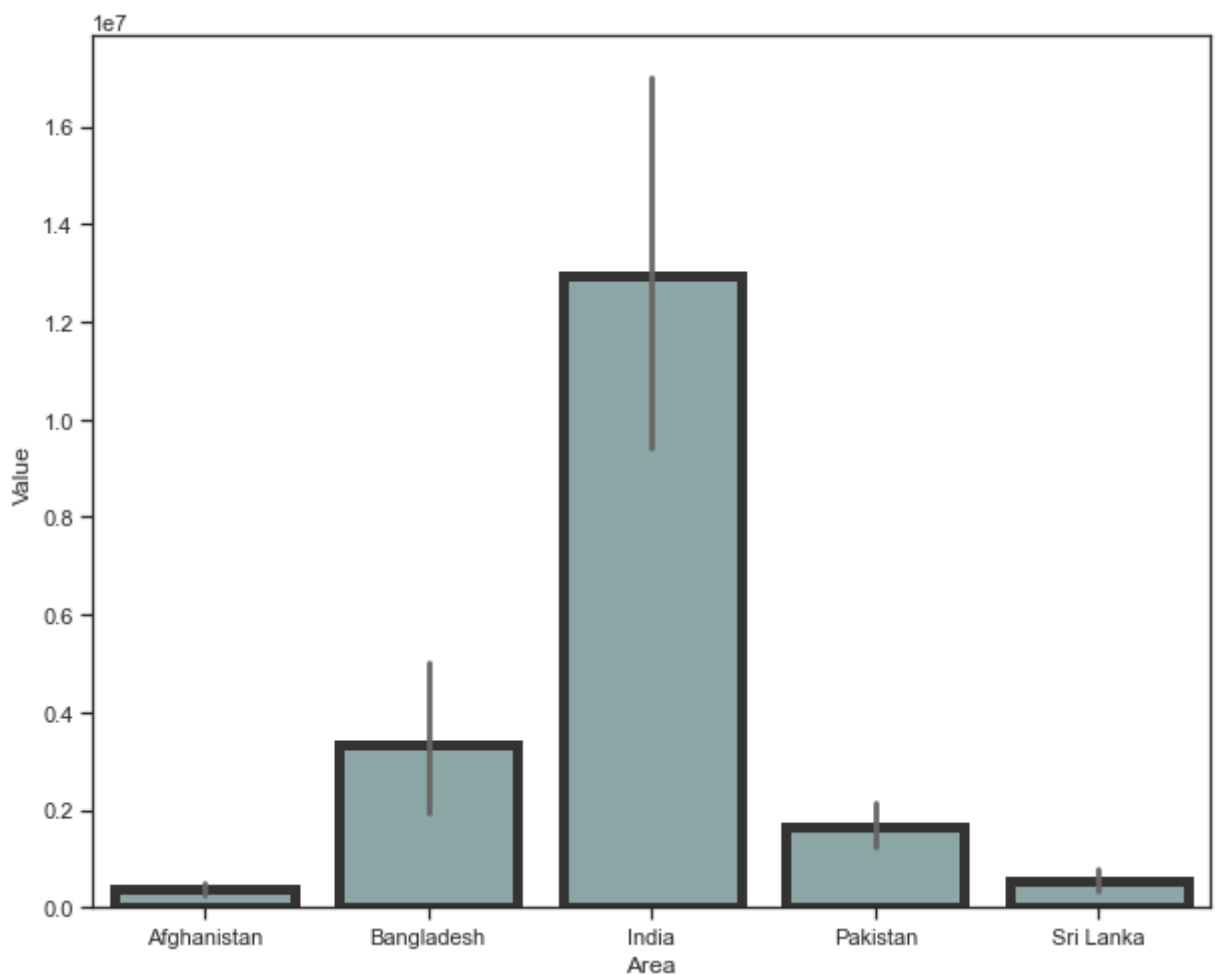
```python
import pandas as pd

#import data from file
data_stored = pd.read_csv("asia1.csv")
print(data_stored)

#steps involved in Data Visualization
# Step-1 import libraries
import seaborn as sns
import matplotlib.pyplot as plt

# # Step-2 set a theme
sns.set_theme(style="ticks", color_codes=True)



# # Step-5 plot basic graph with 2 variable (count plot)
p=sns.countplot(x= "Item", data=data_stored, hue="Area")

# # Step-6 plot basic graph with 2 variable (count plot) wiith Titles
# p = sns.countplot(x= "sex", data=kashti, hue="class")
p.set_title("Plot for South Asia crops")
plt.show()
```

```
      Domain Code                          Domain  Area Code (FAO)          Area  \
0             QCL  Crops and livestock products                2  Afghanistan
1             QCL  Crops and livestock products                2  Afghanistan
2             QCL  Crops and livestock products                2  Afghanistan
3             QCL  Crops and livestock products                2  Afghanistan
4             QCL  Crops and livestock products                2  Afghanistan
...           ...                           ...              ...          ...
1205          QCL  Crops and livestock products               38    Sri Lanka
1206          QCL  Crops and livestock products               38    Sri Lanka
1207          QCL  Crops and livestock products               38    Sri Lanka
1208          QCL  Crops and livestock products               38    Sri Lanka
1209          QCL  Crops and livestock products               38    Sri Lanka

      Element Code        Element  Item Code (FAO)                Item  \
0             5312  Area harvested              221  Almonds, with shell
1             5312  Area harvested              221  Almonds, with shell
2             5312  Area harvested              221  Almonds, with shell
3             5312  Area harvested              221  Almonds, with shell
4             5312  Area harvested              221  Almonds, with shell
...            ...            ...              ...                  ...
1205          5510     Production              388             Tomatoes
1206          5510     Production              388             Tomatoes
1207          5510     Production              388             Tomatoes
1208          5510     Production              388             Tomatoes
1209          5510     Production              388             Tomatoes

      Year Code  Year    Unit     Value Flag    Flag Description
0          2000  2000      ha    7000.0    F        FAO estimate
1          2002  2002      ha    5500.0  NaN       Official data
2          2004  2004      ha   12000.0    *  Unofficial figure
3          2006  2006      ha   12000.0  NaN       Official data
4          2008  2008      ha   12000.0  NaN       Official data
...         ...   ...     ...       ...  ...                 ...
1205       2012  2012  tonnes   84140.0  NaN       Official data
1206       2014  2014  tonnes   86500.0  NaN       Official data
1207       2016  2016  tonnes   92748.0  NaN       Official data
1208       2018  2018  tonnes  101404.0  NaN       Official data
1209       2020  2020  tonnes   90507.0  NaN       Official data

[1210 rows x 14 columns]
```
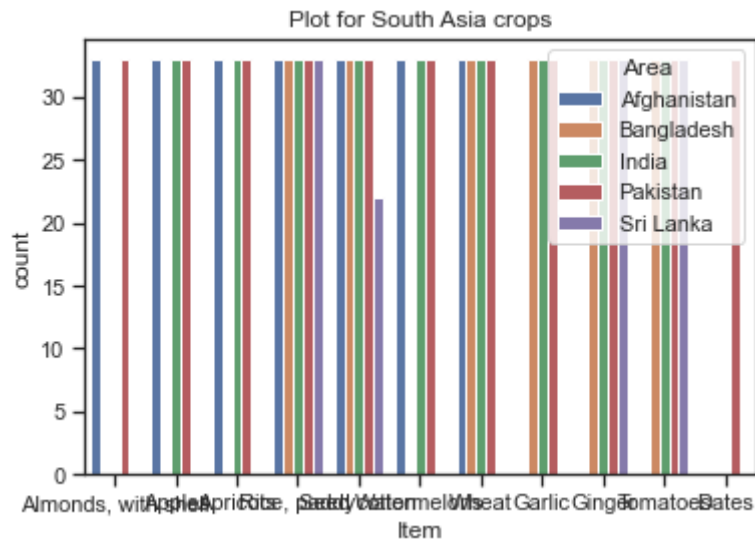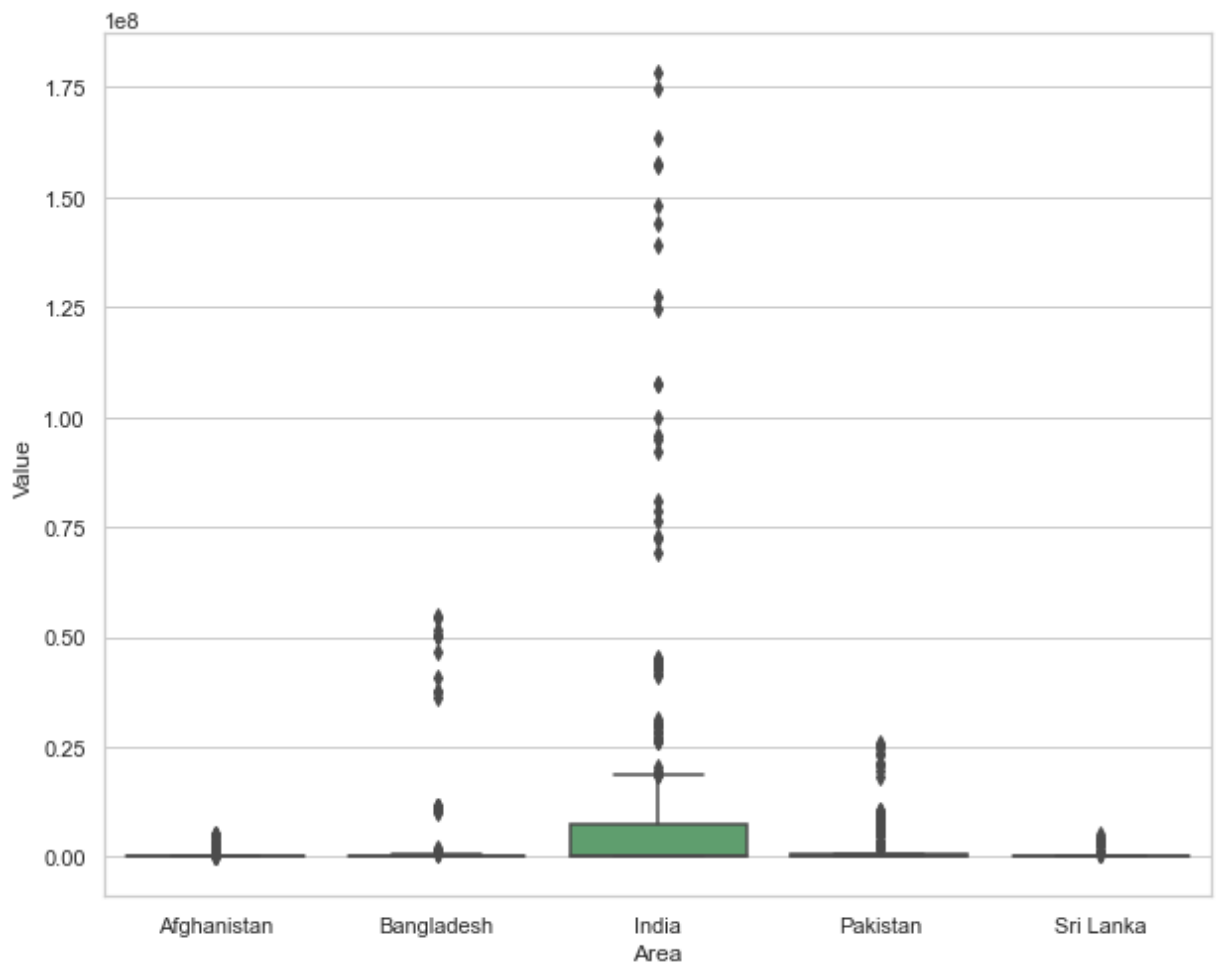
Plot for South Asia crops

Box plots

In [ ]:

```python
import seaborn

# canvas (balloon board)
seaborn.set(style="whitegrid")
asia1 = pd.read_csv("asia1.csv")
plt.figure(figsize=(10,8))
seaborn.boxplot(x="Area",
                y="Value", data=asia1)
```

Out[ ]:   `<AxesSubplot:xlabel='Area', ylabel='Value'>`

In [ ]:
```python
import seaborn
seaborn.set(style="whitegrid")
seaborn.set(style="whitegrid")
asia1 = pd.read_csv("asia1.csv")
plt.figure(figsize=(10,8))
seaborn.boxplot(x="Area", y="Value", data=asia1, saturation=1)
```

Out[ ]:   <AxesSubplot:xlabel='Area', ylabel='Value'>
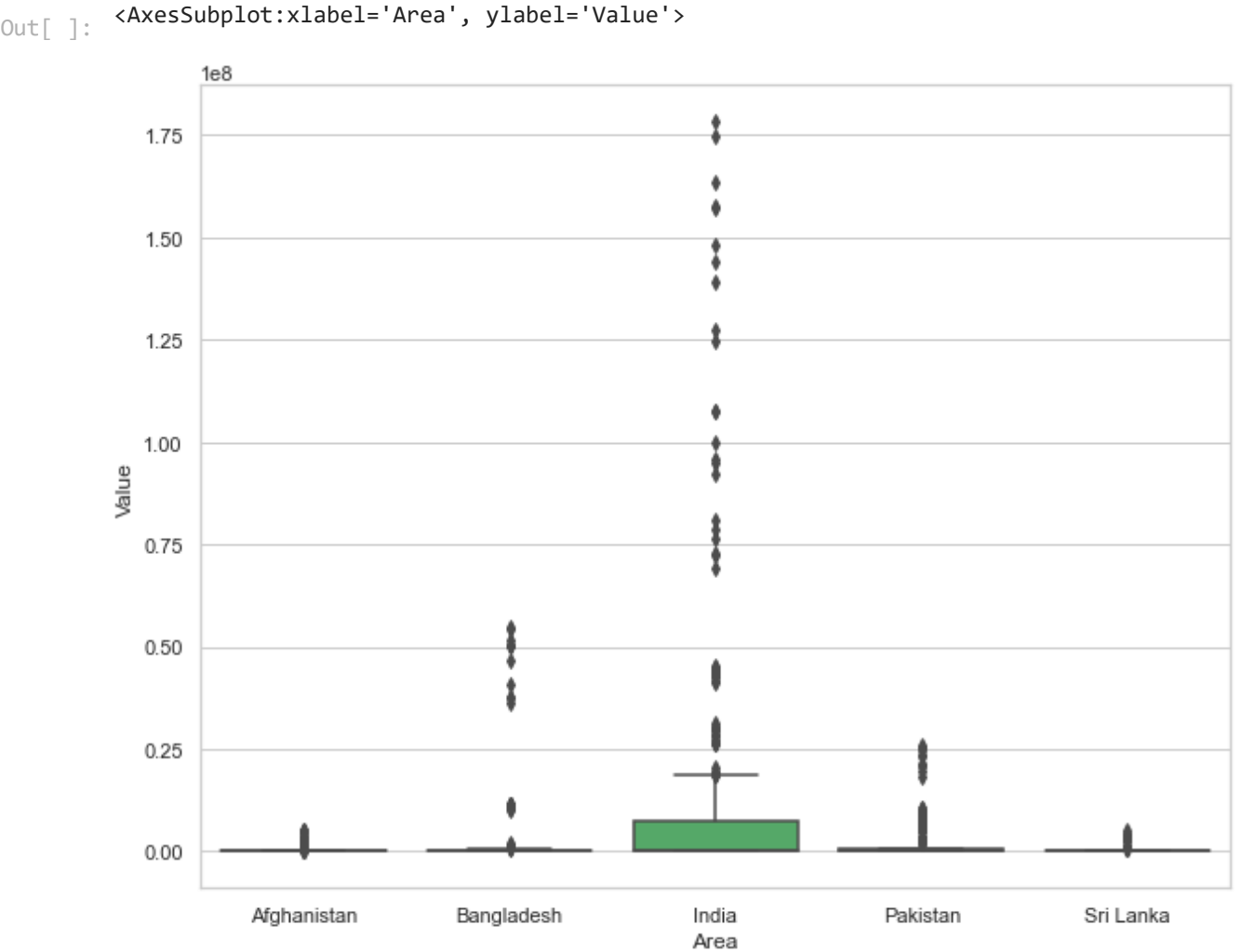
In [ ]:
```python
import seaborn as sns
import pandas as pd
import numpy as np
asia1 = pd.read_csv("asia1.csv")
asia1
```

Out[ ]:

	Domain Code	Domain	Area Code (FAO)	Area	Element Code	Element	Item Code (FAO)	Item	Year Code	Year
0	QCL	Crops and livestock products	2	Afghanistan	5312	Area harvested	221	Almonds, with shell	2000	2000
1	QCL	Crops and livestock products	2	Afghanistan	5312	Area harvested	221	Almonds, with shell	2002	2002

	Domain Code	Domain	Area Code (FAO)	Area	Element Code	Element	Item Code (FAO)	Item	Year Code	Year	
2	QCL	Crops and livestock products	2	Afghanistan	5312	Area harvested	221	Almonds, with shell	2004	2004	
3	QCL	Crops and livestock products	2	Afghanistan	5312	Area harvested	221	Almonds, with shell	2006	2006	
4	QCL	Crops and livestock products	2	Afghanistan	5312	Area harvested	221	Almonds, with shell	2008	2008	
...	...	...	...	...	...	...	...	...	...	...	
1205	QCL	Crops and livestock products	38	Sri Lanka	5510	Production	388	Tomatoes	2012	2012	to
1206	QCL	Crops and livestock products	38	Sri Lanka	5510	Production	388	Tomatoes	2014	2014	to
1207	QCL	Crops and livestock products	38	Sri Lanka	5510	Production	388	Tomatoes	2016	2016	to
1208	QCL	Crops and livestock products	38	Sri Lanka	5510	Production	388	Tomatoes	2018	2018	to
1209	QCL	Crops and livestock products	38	Sri Lanka	5510	Production	388	Tomatoes	2020	2020	to

1210 rows × 14 columns

```
In [ ]:   asia1.describe()
```

Out[ ]:

	Area Code (FAO)	Element Code	Item Code (FAO)	Year Code	Year	Value
count	1210.000000	1210.000000	1210.000000	1210.00000	1210.00000	1.188000e+03
mean	80.845455	5413.618182	360.509091	2010.00000	2010.00000	4.413553e+06
std	65.396077	81.320083	229.652941	6.32717	6.32717	1.772574e+07
min	2.000000	5312.000000	15.000000	2000.00000	2000.00000	2.000000e+00
25%	16.000000	5312.000000	221.000000	2004.00000	2004.00000	2.674200e+04
50%	100.000000	5419.000000	388.000000	2010.00000	2010.00000	7.445100e+04
75%	165.000000	5510.000000	526.000000	2016.00000	2016.00000	4.773695e+05

	Area Code (FAO)	Element Code	Item Code (FAO)	Year Code	Year	Value
max	165.000000	5510.000000	720.000000	2020.00000	2020.00000	1.783050e+08

In [ ]:
```python
# import seaborn as sns
# seaborn.set(style="whitegrid")
# asia1 = pd.read_csv("asia1.csv")
# asia1
# sns.boxplot(x=Area["Value"])
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_8444/4199044850.py in <module>
      3 asia1 = pd.read_csv("asia1.csv")
      4 asia1
----> 5 sns.boxplot(x=Area["Value"])

NameError: name 'Area' is not defined
```

In [ ]:
```python
import seaborn as sns
sns.set(style="whitegrid")
asia1 = pd.read_csv("asia1.csv")
asia1
plt.figure(figsize=(10,8))
sns.boxplot(x="Item", y="Value", hue="Area", palette="Set2", data=asia1, dodge=True)
```
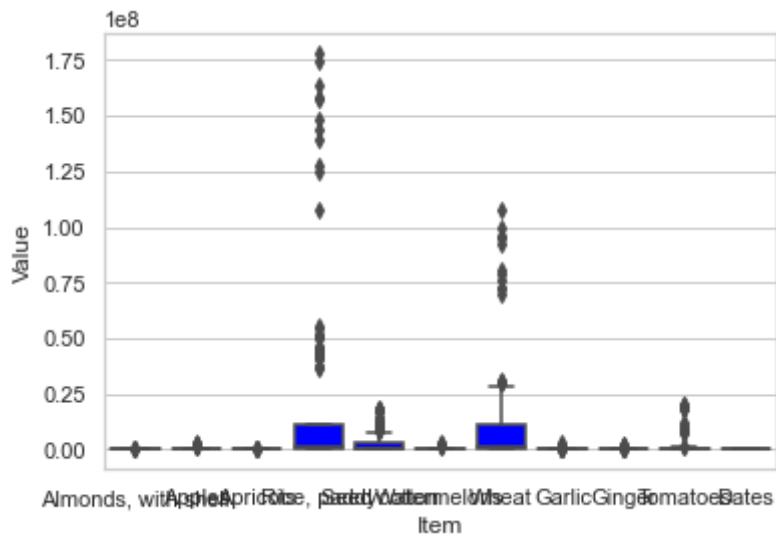
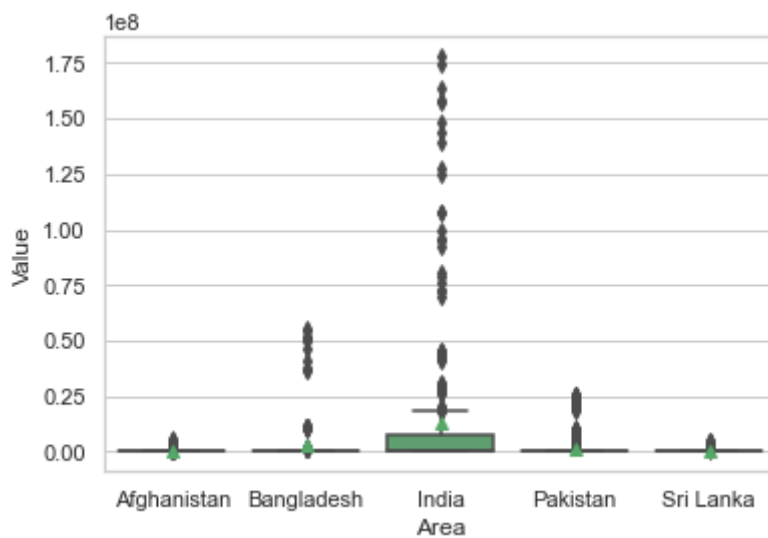Out[ ]:   <AxesSubplot:xlabel='Item', ylabel='Value'>
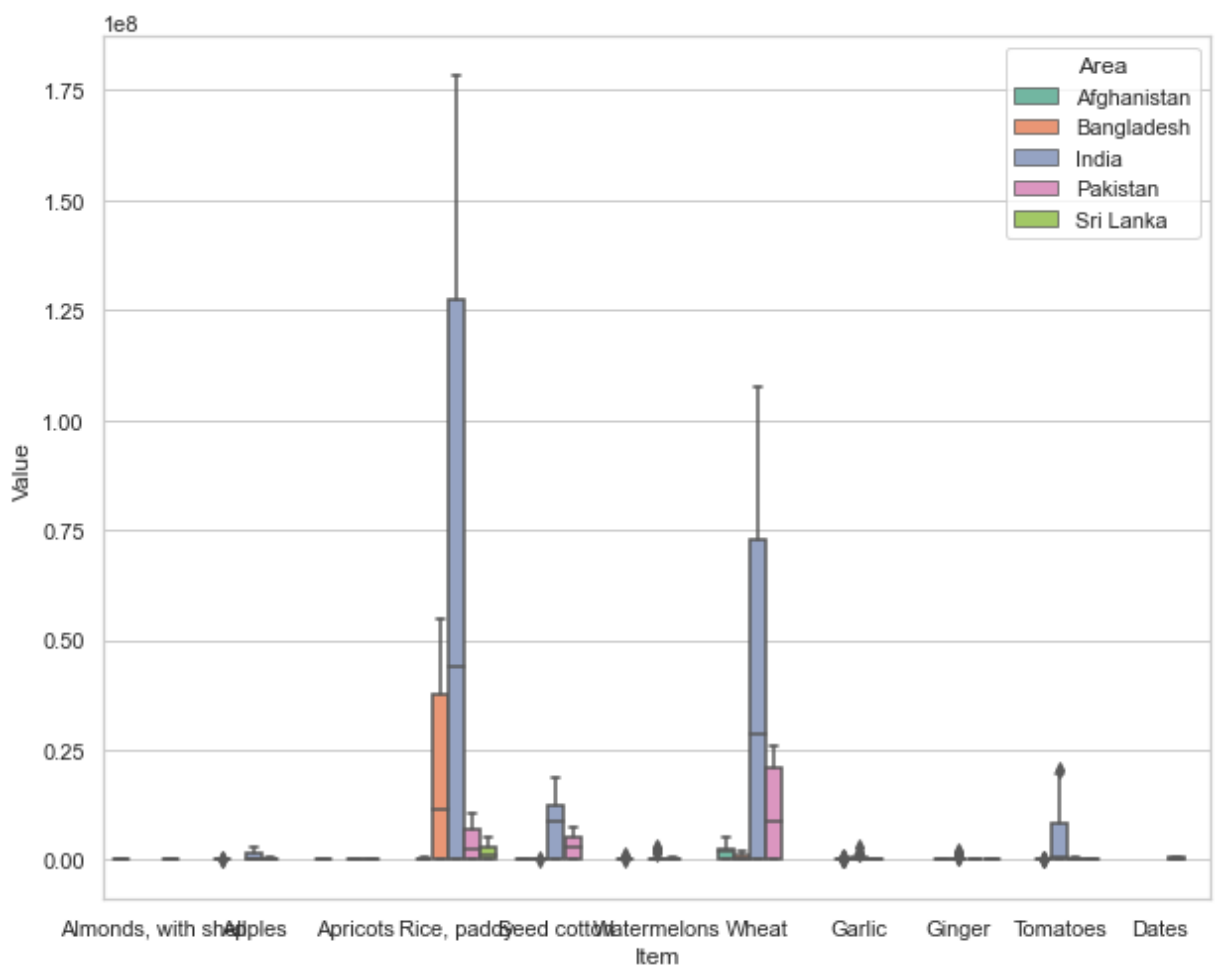
In [ ]:
```python
import seaborn as sns
```

```
sns.set(style="whitegrid")
asia1 = pd.read_csv("asia1.csv")
asia1
sns.boxplot(x="Item", y="Value", data=asia1, saturation=1, color="blue") #hex codes
```

Out[ ]:   <AxesSubplot:xlabel='Item', ylabel='Value'>

In [ ]:
```
sns.boxplot(x="Area", y="Value", showmeans=True,
            data=asia1)
plt.show()
```


In [ ]:
```
import seaborn as sns
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
asia1 = pd.read_csv("asia1.csv")
sns.boxplot(x="Area",
            y="Value", showmeans=True,
            meanprops={"marker": "*", "markersize":"12", "markeredgecolor":"red"},
            data=asia1)
#show Labels
plt.xlabel("Area")
plt.ylabel("Value")
plt.title("South Asia crops and livestock products")
plt.show()
```

South Asia crops and livestock products
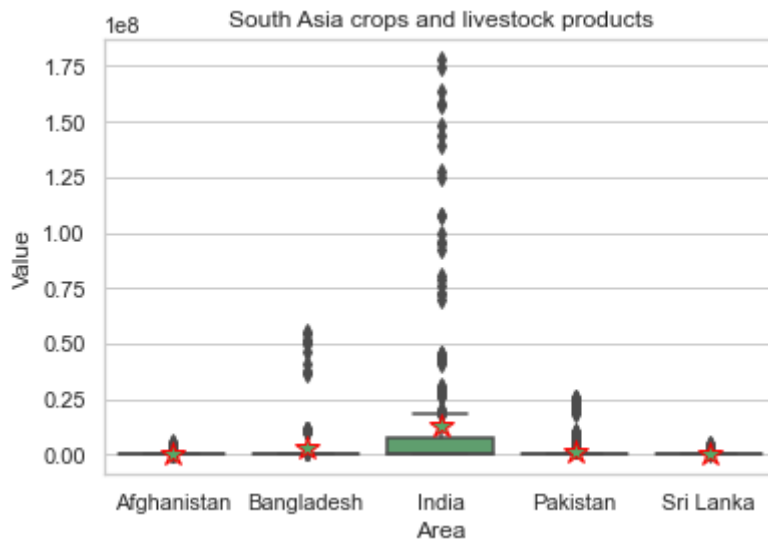
In [ ]:
```python
import seaborn as sns
import pandas as pd
sns.set_theme(style="ticks", palette="pastel")

# Load the example tips dataset
asia1 = pd.read_csv("asia1.csv")

# Draw a nested boxplot to show bills by day and time
sns.boxplot(x="Area", y="Value",
            hue="Item", palette=["m", "g"],
            data=asia1)
sns.despine(offset=10, trim=True)
```
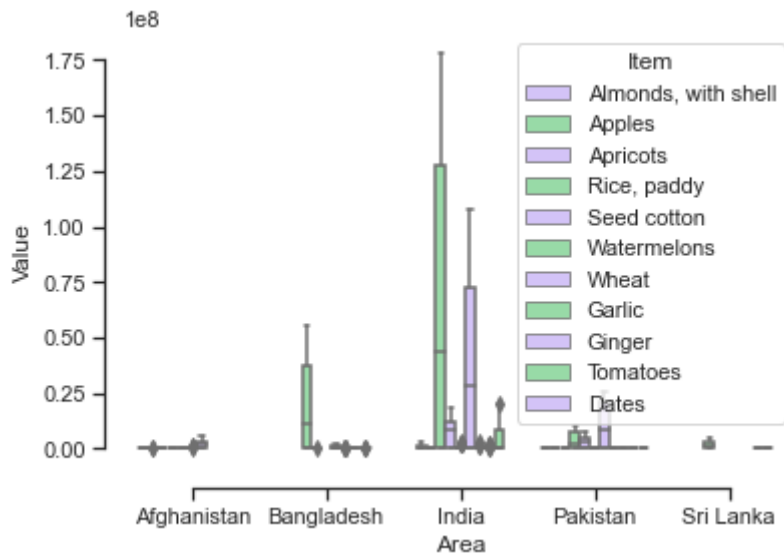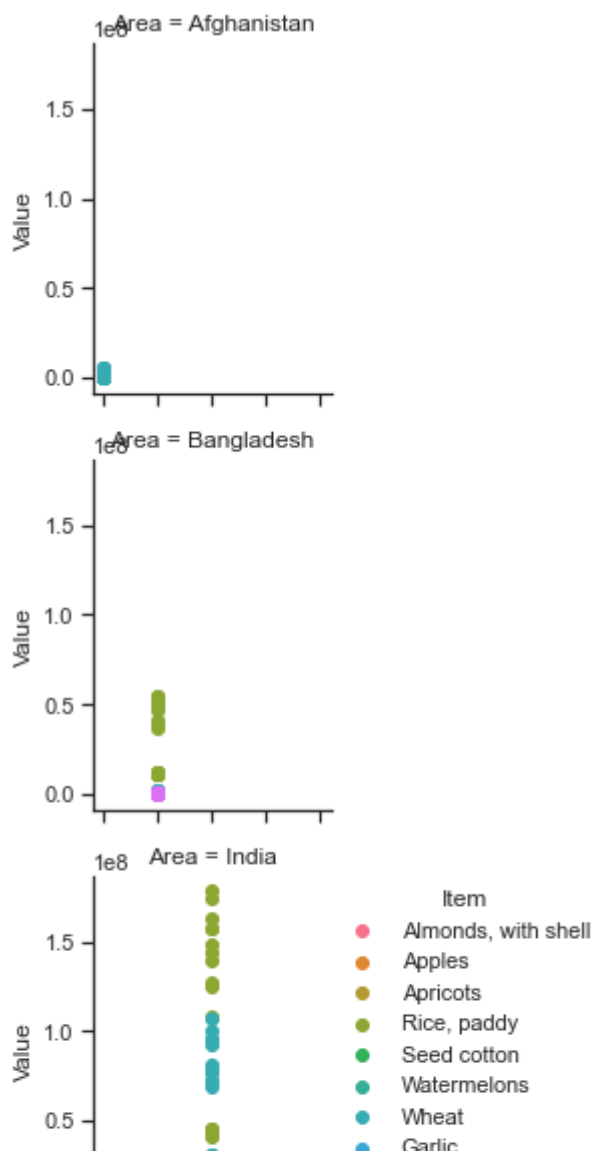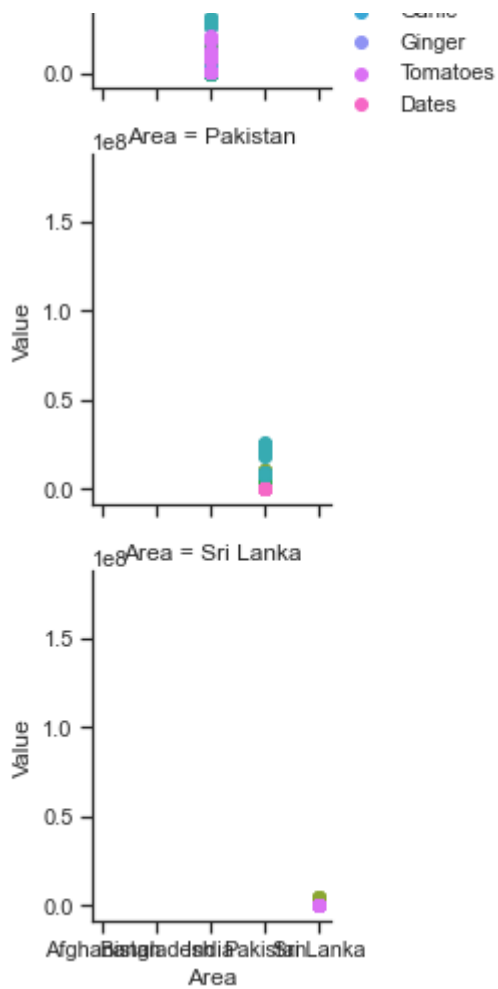

In [ ]:
```python
asia1 = pd.read_csv("asia1.csv")
p1=sns.countplot(x="Area", data=asia1, hue="Item")
p1.set_title("Plot for Counting")
plt.show()
```
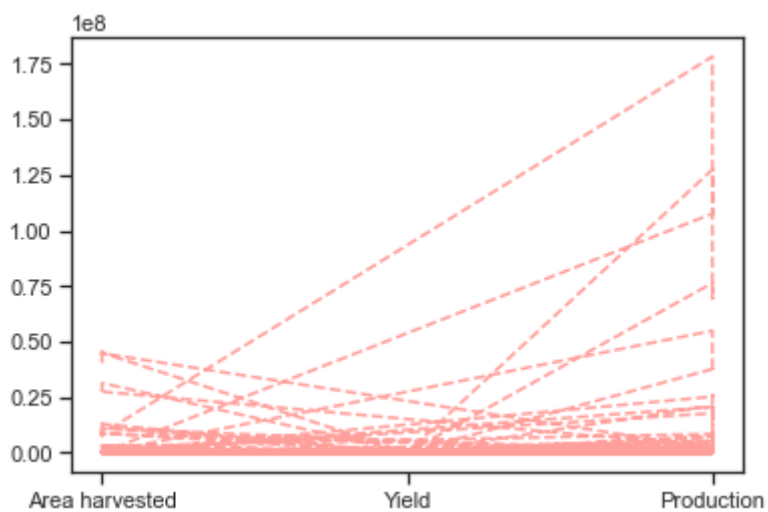
Plot for Counting
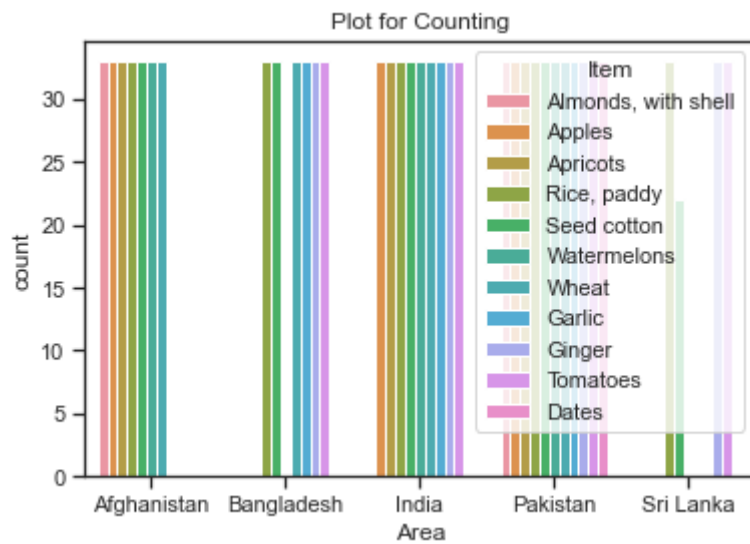
Scatter plot

```python
# scatter plot
sns.set_theme(style="ticks", color_codes=True)
asia1 = pd.read_csv("asia1.csv")
g=sns.FacetGrid(asia1, row="Area", hue="Item")
g=(g.map(plt.scatter, "Area", "Value").add_legend())
plt.show()
```

```
In [ ]:    # import pandas as pd
           # import matplotlib.pyplot as plt
           # asia1 = pd.read_csv("asia1.csv")
           # asia1
           # plt.plot(asia1.Element, asia1["Value"], "r--")
           # plt.show
```

Out[ ]:   <function matplotlib.pyplot.show(close=None, block=None)>


```
In [ ]:    asia1 = pd.read_csv("asia1.csv")
           sns.catplot(x="Area", y="Value", hue="Item", kind="bar", data=asia1)
           plt.show()
```