Group IMOA

Members:

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In [1]:

```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [2]:

```python
df=pd.read_csv('coviddata.csv')
df.drop(['country_code','continent','source','population','rate_14_day'],axis=1,inplace=Tru
```
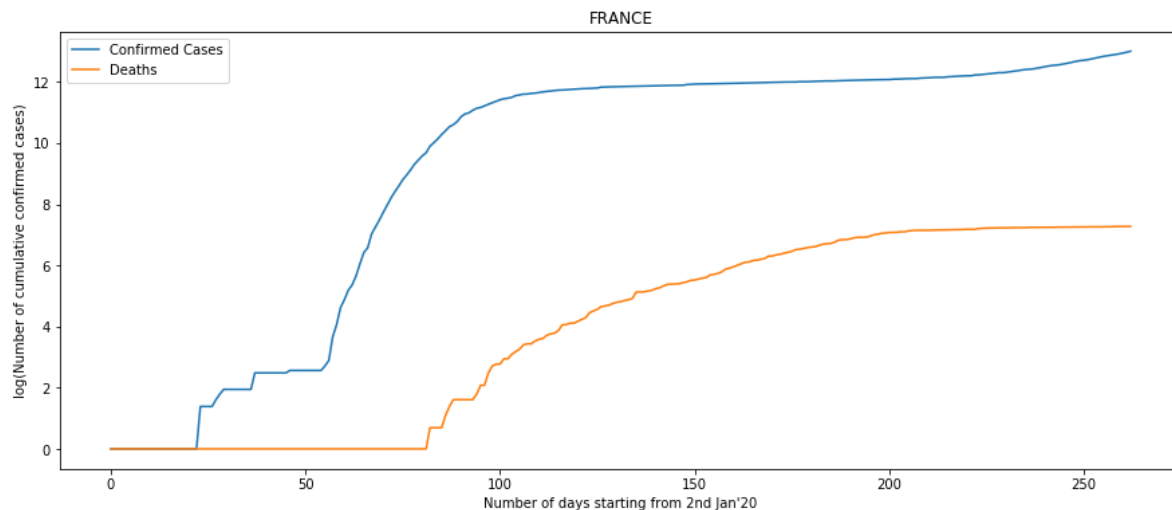
France

In [11]:

```python
t1=df['country']=='France'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('FRANCE')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.legend(['Confirmed Cases','Deaths'])

plt.show()
```


Is there a second wave of covid-19 in France?

As we can see from the graph of France, number of total cases increased and is almost constant at the end, therefore no second wave is observed.
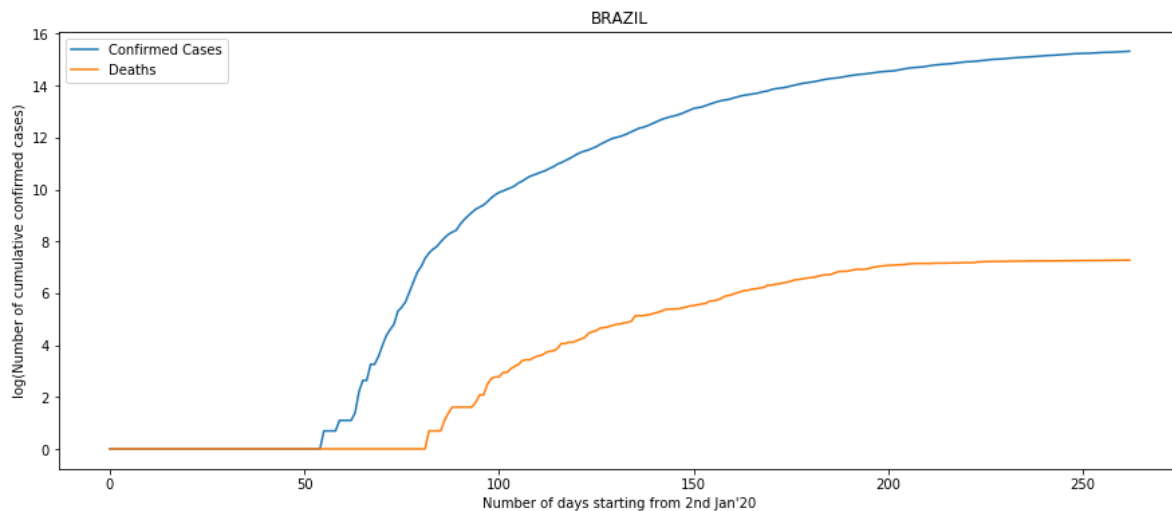
Brazil

In [12]:

```python
t1=df['country']=='Brazil'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('BRAZIL')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.legend(['Confirmed Cases','Deaths'])

plt.show()
```
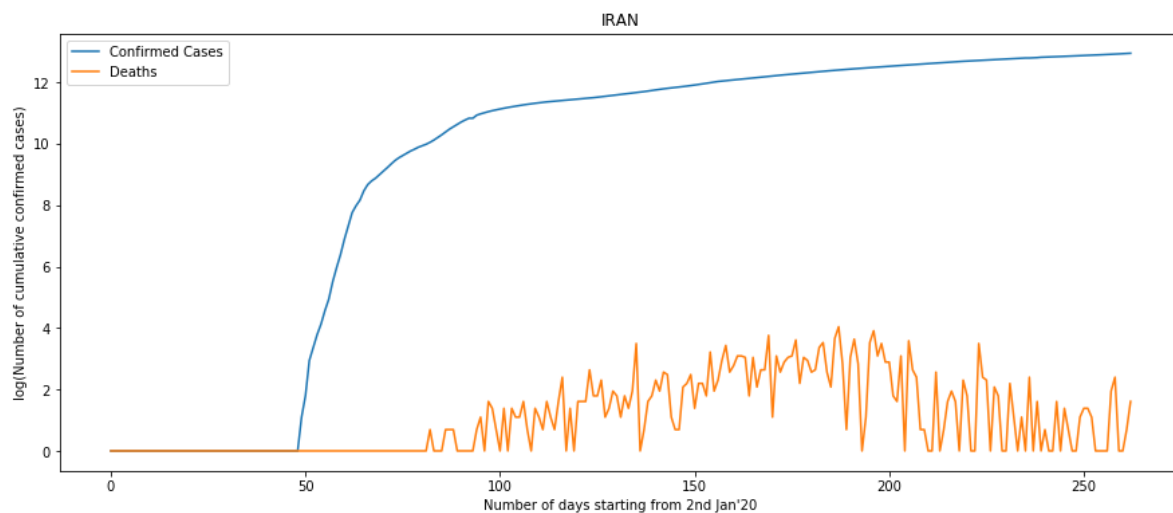

Iran

In [13]:

```python
t1=df['country']=='Iran'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('IRAN')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.legend(['Confirmed Cases','Deaths'])

plt.show()
```


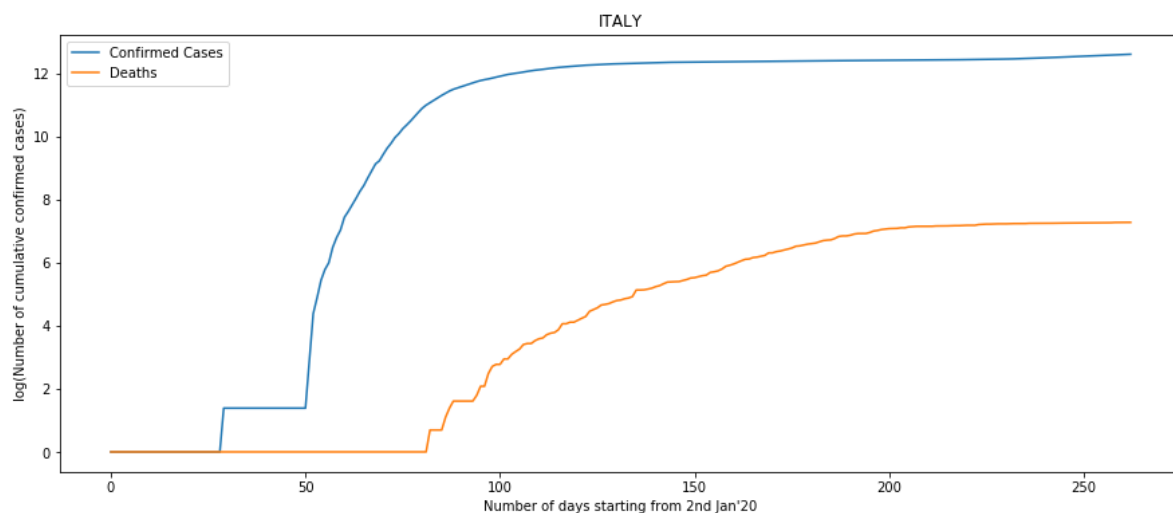## Itlay

In [14]:

```python
t1=df['country']=='Italy'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('ITALY')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.legend(['Confirmed Cases','Deaths'])

plt.show()
```


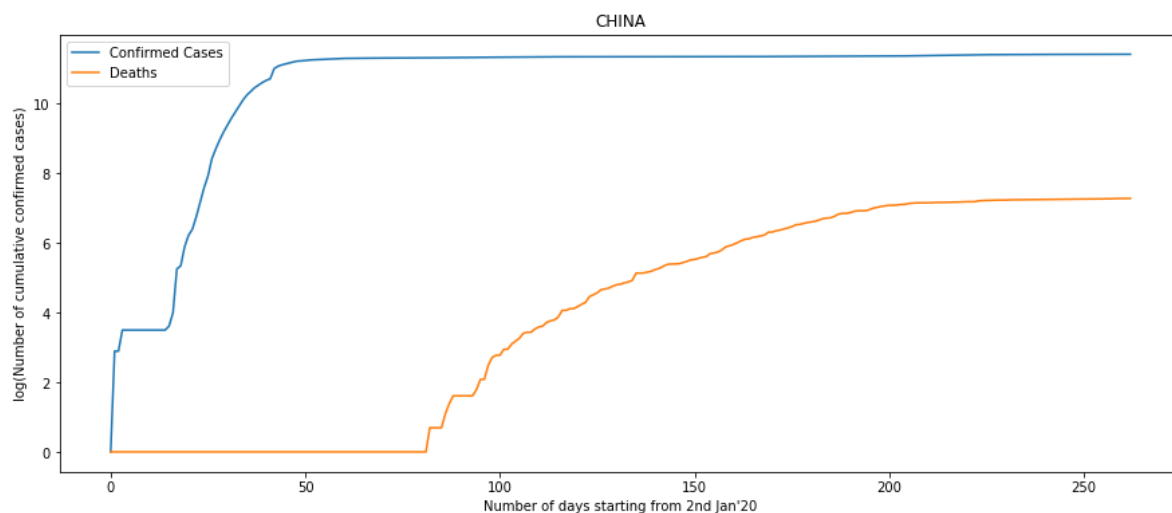## China

In [15]:

```python
t1=df['country']=='China'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('CHINA')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.legend(['Confirmed Cases','Deaths'])

plt.show()
```


India

In [16]:

```python
t1=df['country']=='India'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('INDIA')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.show()
```
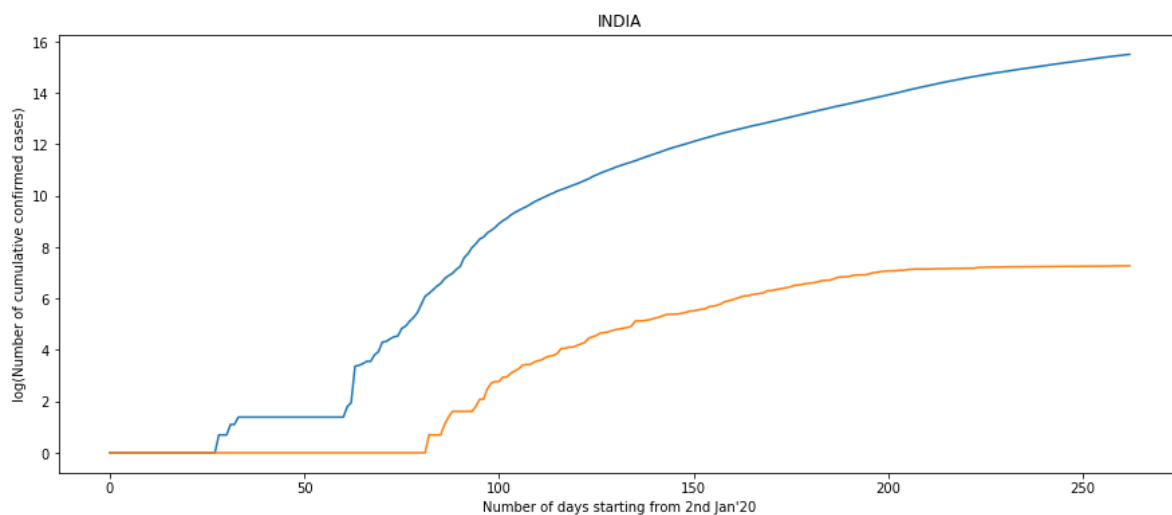

UK

In [17]:

```python
t1=df['country']=='United Kingdom'; t2=df['indicator']=='confirmed cases'
df1=df[np.logical_and(t1,t2)]
cc=df1['daily_count']; x=df1['date']
cc=np.cumsum(cc)

t1=df['country']=='Afghanistan'; t2=df['indicator']=='deaths'
df1=df[np.logical_and(t1,t2)]
ds=df1['daily_count']; x=df1['date']
ds=np.cumsum(ds)

fig= plt.figure(figsize=(15,6))
axes= fig.add_axes()
plt.plot(range(len(cc)),np.log(cc+1))
plt.plot(range(len(ds)),np.log(ds+1))
plt.title('UK')
plt.ylabel('log(Number of cumulative confirmed cases)')
plt.xlabel('Number of days starting from 2nd Jan\'20')
plt.show()
```