In [70]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
import sklearn as sk
import plotly.express as px
```

In [2]:
```
df=pd.read_csv("terrorism.csv",encoding="latin-1")
```

```
C:\Users\DELL\AppData\Local\Temp\ipykernel_4128\3066916271.py:1: DtypeWarning: Columns (4,6,31,33,61,62,63,76,79,90,9
2,94,96,114,115,121) have mixed types. Specify dtype option on import or set low_memory=False.
  df=pd.read_csv("terrorism.csv",encoding="latin-1")
```

In [3]:
```
df
```

Out[3]:

	eventid	iyear	imonth	iday	approxdate	extended	resolution	country	country_txt	region	...	addnotes	scite1	scite2
0	197000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN
1	197000000002	1970	0	0	NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN
2	197001000001	1970	1	0	NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN
3	197001000002	1970	1	0	NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN
4	197001000003	1970	1	0	NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181686	201712310022	2017	12	31	NaN	0	NaN	182	Somalia	11	...	NaN	"Somalia: Al-Shabaab Militants Attack Army Che...	"Highlights: Somalia Daily Media Highlights 2 ...
181687	201712310029	2017	12	31	NaN	0	NaN	200	Syria	10	...	NaN	"Putin's 'victory' in Syria has turned into a ...	"Two Russian soldiers killed at Hmeymim base i...
181688	201712310030	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Maguindanao clashes trap tribe members," Phil...	NaN
181689	201712310031	2017	12	31	NaN	0	NaN	92	India	6	...	NaN	"Trader escapes grenade attack in Imphal," Bus...	NaN
181690	201712310032	2017	12	31	NaN	0	NaN	160	Philippines	5	...	NaN	"Security tightened in Cotabato following IED ...	"Security tightened in Cotabato City," Manila ...

181691 rows × 135 columns

In [4]:
```
df.head()
```

Out[4]:

	eventid	iyear	imonth	iday	approxdate	extended	resolution	country	country_txt	region	...	addnotes	scite1	scite2	scite3	dbsourc
0	197000000001	1970	7	2	NaN	0	NaN	58	Dominican Republic	2	...	NaN	NaN	NaN	NaN	PGI
1	197000000002	1970	0	0	NaN	0	NaN	130	Mexico	1	...	NaN	NaN	NaN	NaN	PGI
2	197001000001	1970	1	0	NaN	0	NaN	160	Philippines	5	...	NaN	NaN	NaN	NaN	PGI
3	197001000002	1970	1	0	NaN	0	NaN	78	Greece	8	...	NaN	NaN	NaN	NaN	PGI
4	197001000003	1970	1	0	NaN	0	NaN	101	Japan	4	...	NaN	NaN	NaN	NaN	PGI

5 rows × 135 columns

In [5]:
```
df.columns
```

Out[5]:
```
Index(['eventid', 'iyear', 'imonth', 'iday', 'approxdate', 'extended',
       'resolution', 'country', 'country_txt', 'region',
       ...
       'addnotes', 'scite1', 'scite2', 'scite3', 'dbsource', 'INT_LOG',
       'INT_IDEO', 'INT_MISC', 'INT_ANY', 'related'],
      dtype='object', length=135)
```

In [29]:
```
d=df[[ 'iyear', 'imonth', 'iday', 'country_txt','region','city','latitude',
      'longitude','weaptype1_txt','targtype1_txt', 'motive','gname','summary',
      "nkill",'target1','attacktype1','nwound',"provstate"]]
```

In [30]:
```
d
```

Out[30]:

	iyear	imonth	iday	country_txt	region	city	latitude	longitude	weaptype1_txt	targtype1_txt	motive	gname	summary
0	1970	7	2	Dominican Republic	2	Santo Domingo	18.456792	-69.951164	Unknown	Private Citizens & Property	NaN	MANO-D	NaN
1	1970	0	0	Mexico	1	Mexico city	19.371887	-99.086624	Unknown	Government (Diplomatic)	NaN	23rd of September Communist League	NaN
2	1970	1	0	Philippines	5	Unknown	15.478598	120.599741	Unknown	Journalists & Media	NaN	Unknown	NaN
3	1970	1	0	Greece	8	Athens	37.997490	23.762728	Explosives	Government (Diplomatic)	NaN	Unknown	NaN
4	1970	1	0	Japan	4	Fukouka	33.580412	130.396361	Incendiary	Government (Diplomatic)	NaN	Unknown	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...	...
181686	2017	12	31	Somalia	11	Ceelka Geelow	2.359673	45.385034	Firearms	Military	NaN	Al-Shabaab	12/31/2017: Assailants opened fire on a Somali...
181687	2017	12	31	Syria	10	Jableh	35.407278	35.942679	Explosives	Military	NaN	Muslim extremists	12/31/2017: Assailants launched mortars at the...
181688	2017	12	31	Philippines	5	Kubentog	6.900742	124.437908	Incendiary	Private Citizens & Property	NaN	Bangsamoro Islamic Freedom Movement (BIFM)	12/31/2017: Assailants set fire to houses in K...
181689	2017	12	31	India	6	Imphal	24.798346	93.940430	Explosives	Government (General)	NaN	Unknown	12/31/2017: Assailants threw a grenade at a Fo...
181690	2017	12	31	Philippines	5	Cotabato City	7.209594	124.241966	Explosives	Unknown	NaN	Unknown	12/31/2017: An explosive device was discovered...

181691 rows × 18 columns

In [105]:
```
df["region_txt"]
```

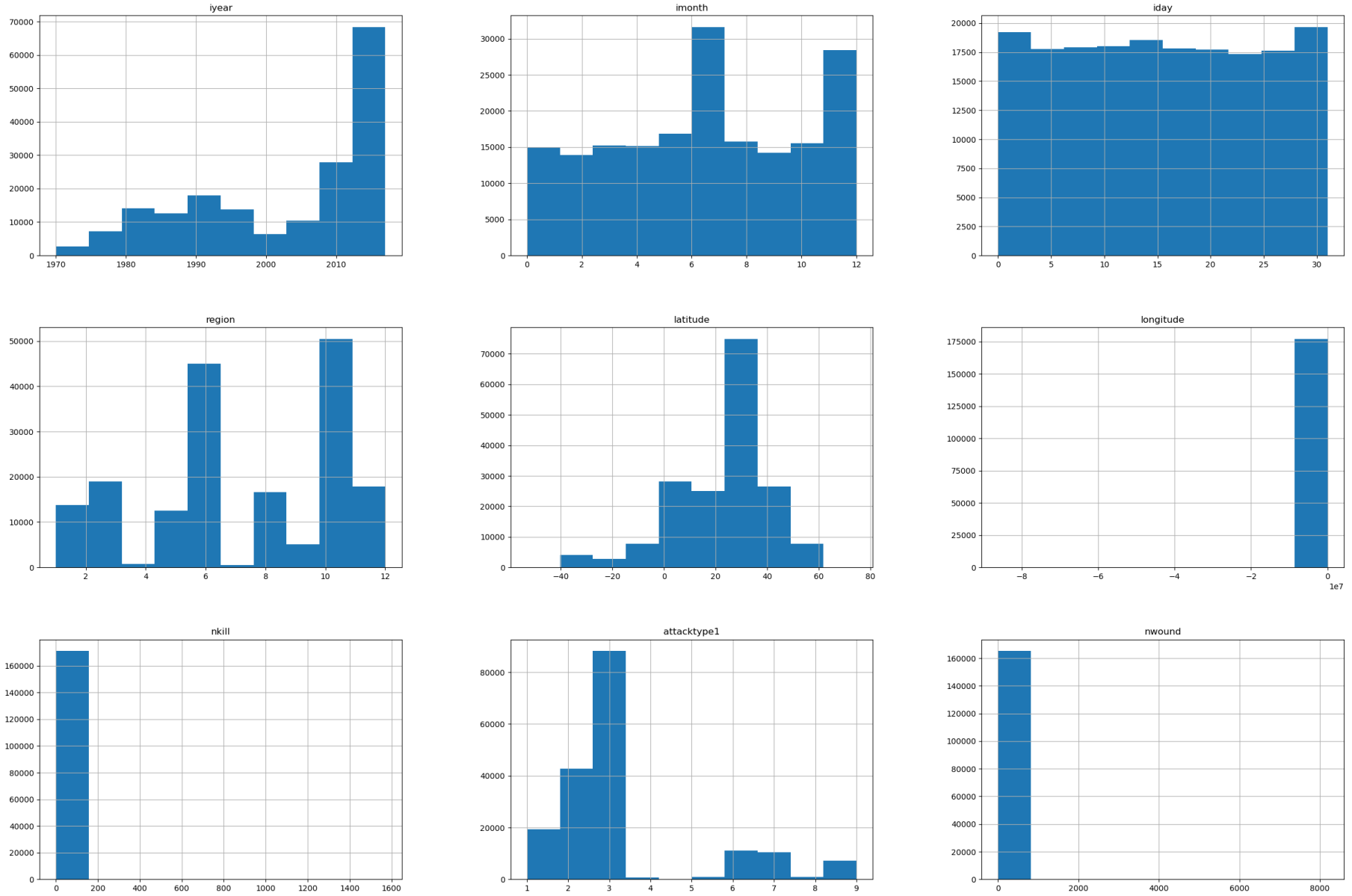
Out[105]:
```
0         Central America & Caribbean
1                       North America
2                      Southeast Asia
3                      Western Europe
4                           East Asia
                      ...
181686               Sub-Saharan Africa
181687     Middle East & North Africa
181688                  Southeast Asia
181689                      South Asia
181690                  Southeast Asia
Name: region_txt, Length: 181691, dtype: object
```

In [31]:
```
d.describe()
```

Out[31]:

	iyear	imonth	iday	region	latitude	longitude	nkill	attacktype1	nwound
count	181691.000000	181691.000000	181691.000000	181691.000000	177135.000000	1.771340e+05	171378.000000	181691.000000	165380.000000
mean	2002.638997	6.467277	15.505644	7.160938	23.498343	-4.586957e+02	2.403272	3.247547	3.167668
std	13.259430	3.388303	8.814045	2.933408	18.569242	2.047790e+05	11.545741	1.915772	35.949392
min	1970.000000	0.000000	0.000000	1.000000	-53.154613	-8.618590e+07	0.000000	1.000000	0.000000
25%	1991.000000	4.000000	8.000000	5.000000	11.510046	4.545640e+00	0.000000	2.000000	0.000000
50%	2009.000000	6.000000	15.000000	6.000000	31.467463	4.324651e+01	0.000000	3.000000	0.000000
75%	2014.000000	9.000000	23.000000	10.000000	34.685087	6.871033e+01	2.000000	3.000000	2.000000
max	2017.000000	12.000000	31.000000	12.000000	74.633553	1.793667e+02	1570.000000	9.000000	8191.000000

In [32]:
```
d.hist(figsize=(30,20))
plt.show()
```



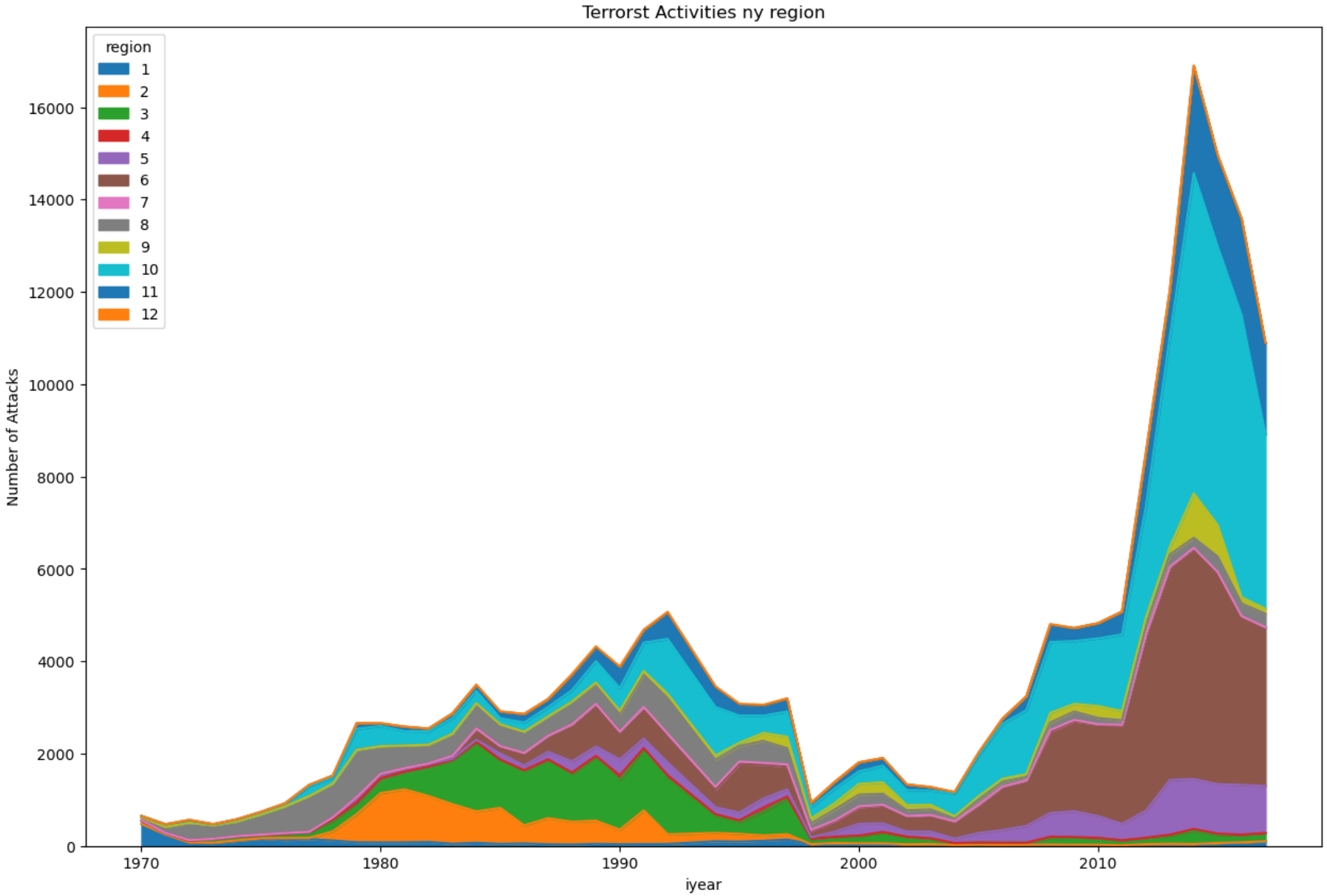
In [35]:
```
c=d.corr()
```

```
C:\Users\DELL\AppData\Local\Temp\ipykernel_4128\2270403381.py:1: FutureWarning: The default value of numeric_only in
DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the
value of numeric_only to silence this warning.
  c=d.corr()
```

In [46]:
```
plt.figure(figsize=(15,10))
sns.heatmap(c,annot=True,cmap="BuPu")
plt.show()
```

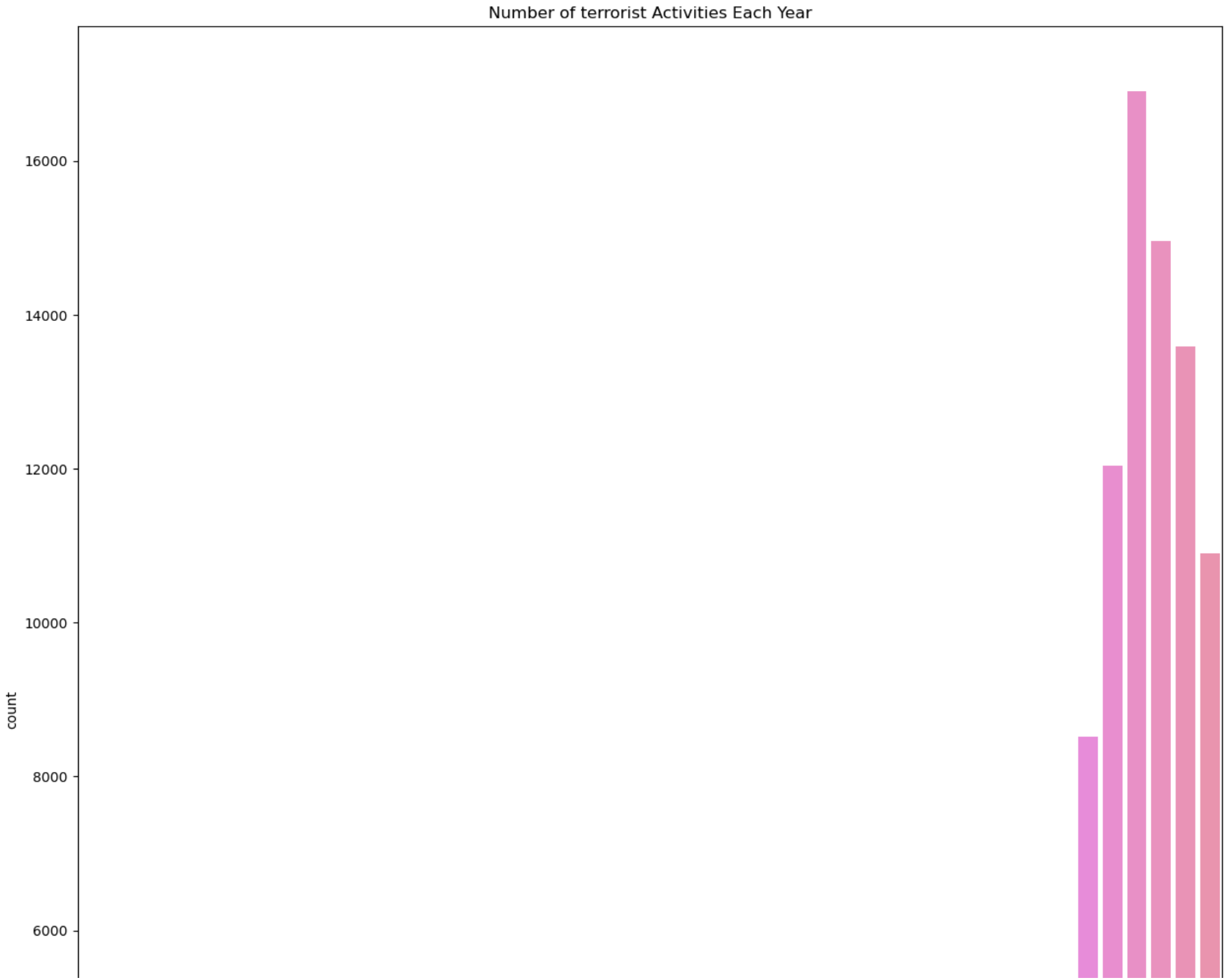

iyear 1 0.00014 0.018 0.4 0.17 0.0039 0.015 0.074 0.015
imonth 0.00014 1 0.0055 -0.003 -0.016 -0.0039 0.0035 0.0067 0.0029
iday 0.018 0.0055 1 0.0097 0.0034 -0.0023 -0.0037 -0.0053 -0.0013
region 0.4 -0.003 0.0097 1 0.31 0.0044 0.042 0.0076 0.02
latitude 0.17 -0.016 0.0034 0.31 1 0.0015 -0.018 0.01 0.016
longitude 0.0039 -0.0039 -0.0023 0.0044 0.0015 1 -0.00056 0.0016 0.00022
nkill 0.015 0.0035 -0.0037 0.042 -0.018 -0.00056 1 0.0025 0.53
attacktype1 0.074 0.0067 -0.0053 0.0076 0.01 0.0016 0.0025 1 0.00085
nwound 0.015 0.0029 -0.0013 0.02 0.016 0.00022 0.53 0.00085 1
iyear imonth iday region latitude longitude nkill attacktype1 nwound
1.0 0.8 0.6 0.4 0.2 0.0

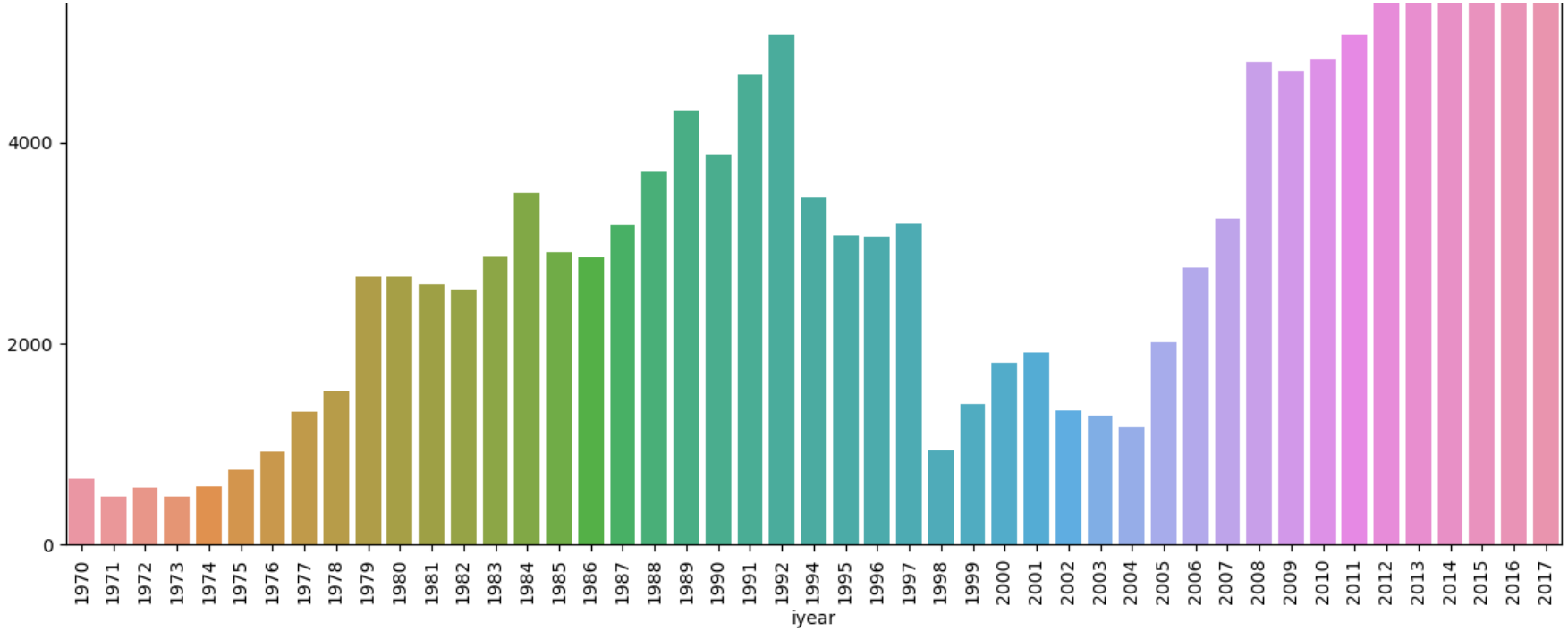
In [49]:
```
pd.crosstab(d.iyear,d.region).plot(kind="area",figsize=(15,10))
plt.title("Terrorst Activities ny region")
plt.ylabel("Number of Attacks")
plt.show()
```


Terrorst Activities ny region
region
1
2
3
4
5
6
7
8
9
10
11
12
Number of Attacks
0
2000
4000
6000
8000
10000
12000
14000
16000
1970
1980
1990
2000
2010
iyear

In [54]:
```
plt.subplots(figsize=(15,18))
sns.countplot(x='iyear',data=d)
plt.xticks(rotation=90)
plt.title("Number of terrorist Activities Each Year")
plt.show
```

Out[54]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```


Number of terrorist Activities Each Year
16000
14000
12000
10000
8000
6000
count


4000
2000
0
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
iyear

In [64]:
```
Year=d["iyear"].value_counts()
Year
```

Out[64]:

2014	16903
2015	14965
2016	13587
2013	12036
2017	10900
2012	8522
2011	5076
1992	5071
2010	4826
2008	4805
2009	4721
1991	4683
1989	4324
1990	3887
1988	3721
1984	3495
1994	3456
2007	3242
1997	3197
1987	3183
1995	3081
1996	3058
1985	2915
1983	2870
1986	2860
2006	2758
1979	2662
1980	2662
1981	2586
1982	2544
2005	2017
2001	1906
2000	1814
1978	1526
1999	1395
2002	1333
1977	1319
2003	1278
2004	1166
1998	934
1976	923

```
1975      740
1970      651
1974      581
1972      568
1973      473
1971      471
Name: iyear, dtype: int64
```

In [68]:

```
e=Year.to_dict()
rate=((e[2017]-e[1970])/e[2017])*100
print(e[1970],"attacks happend in 1970",e[2017],'attacks happend in 2017')
print("So the no. of attacks from 1970 has increased by ",
      np.round(rate,0),"%till 2017")
```

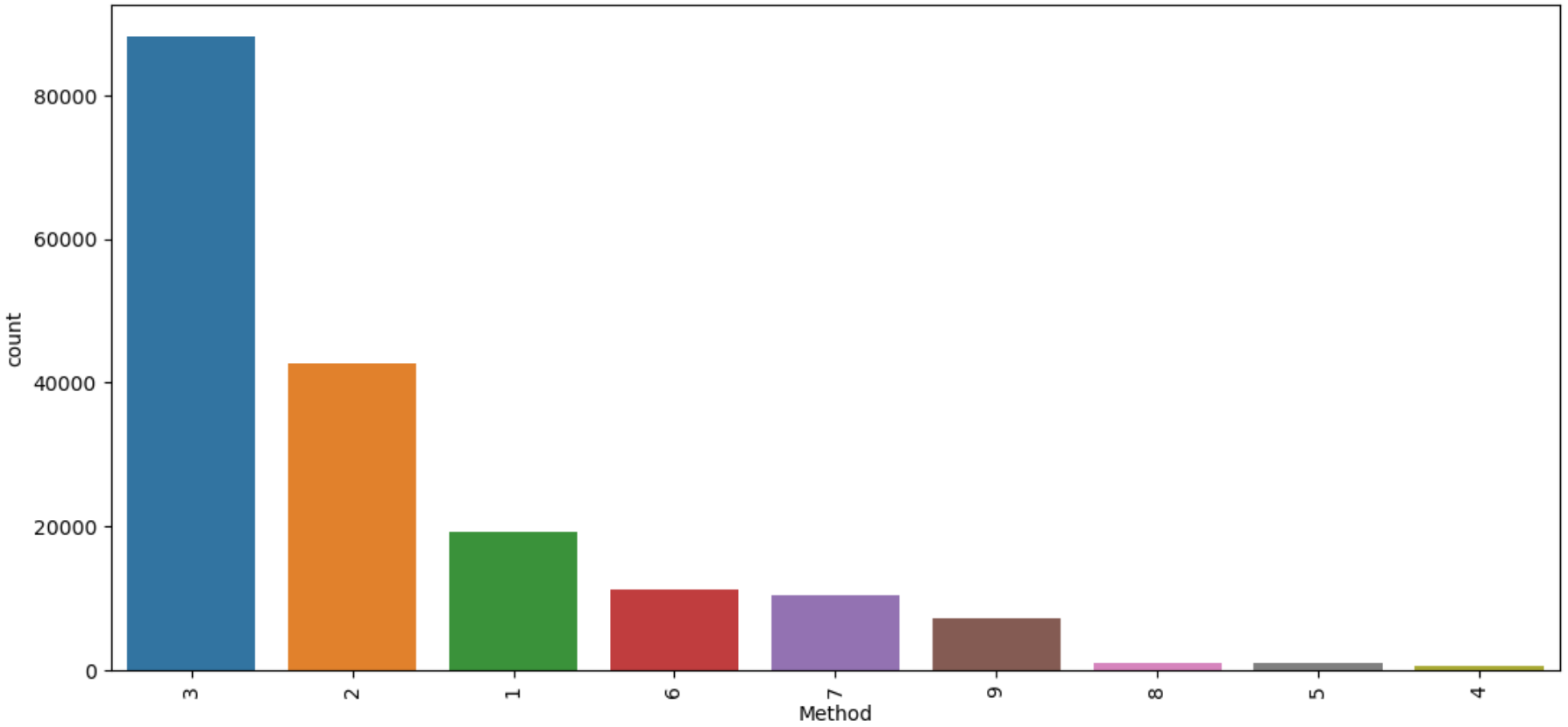
```
651 attacks happend in 1970 10900 attacks happend in 2017
So the no. of attacks from 1970 has increased by  94.0 %till 2017
```

In [76]:
```
px.scatter(d,d.nwound,d.nkill,hover_name="country_txt",
           animation_frame="iyear",animation_group="country_txt",
           color="attacktype1",range_color=[0,1],labels=
           {"nkill":"Death","nwound":"Casualities"})
```

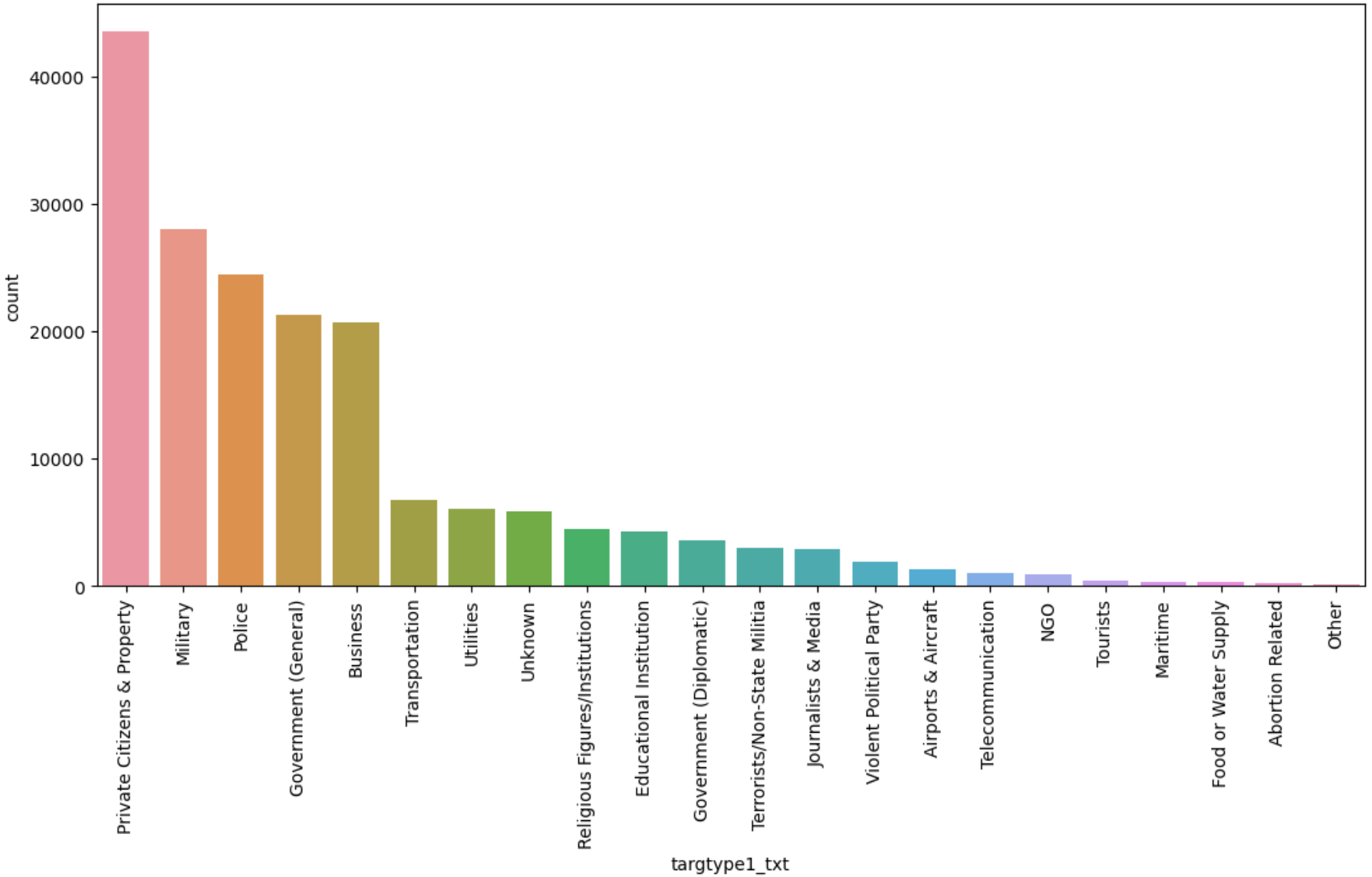
In [90]:
```
f=d['attacktype1'].value_counts()
f
```

Out[90]:
```
3    88255
2    42669
1    19312
6    11158
7    10356
9     7276
8     1015
5      991
4      659
Name: attacktype1, dtype: int64
```

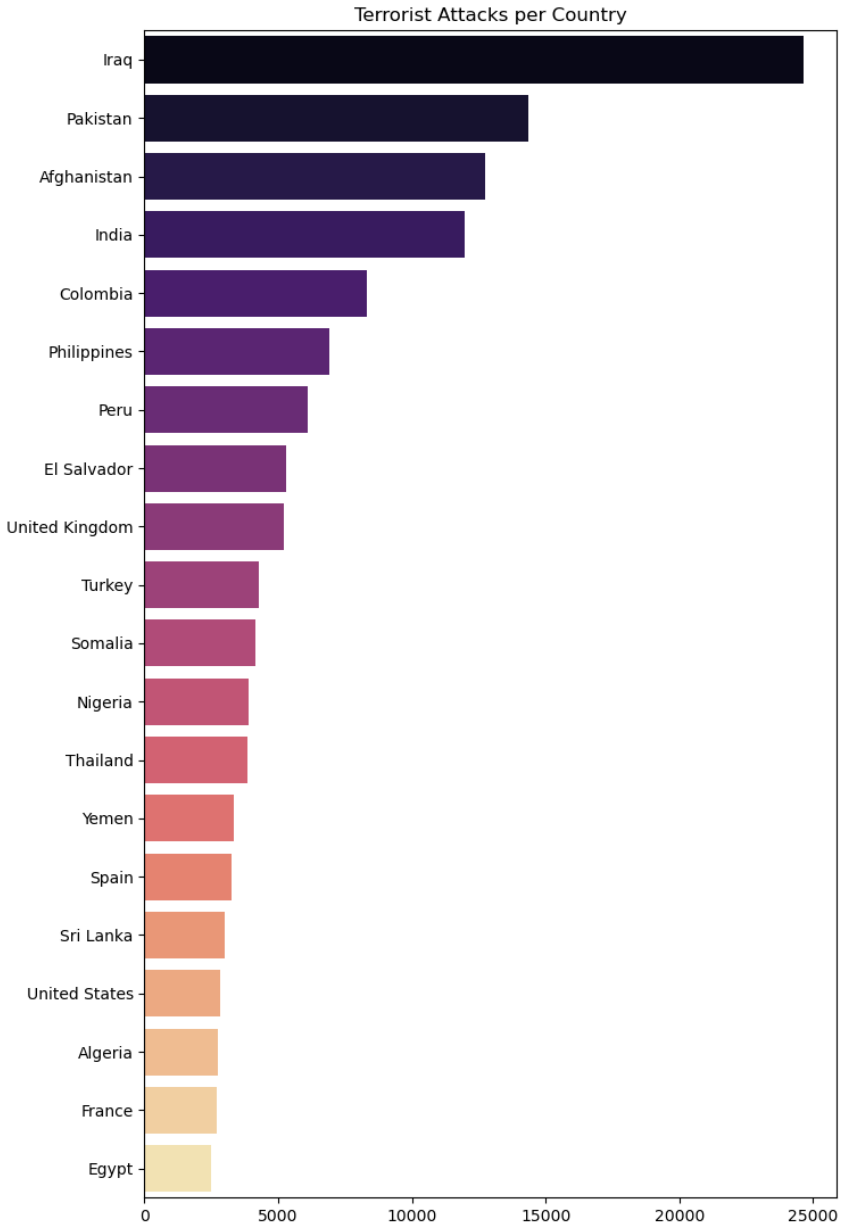
In [99]:
```
plt.figure(figsize=(13,6))
sns.countplot(x=d["attacktype1"],order=f.index)
plt.xticks(rotation=90)
plt.xlabel("Method")
plt.show()
```

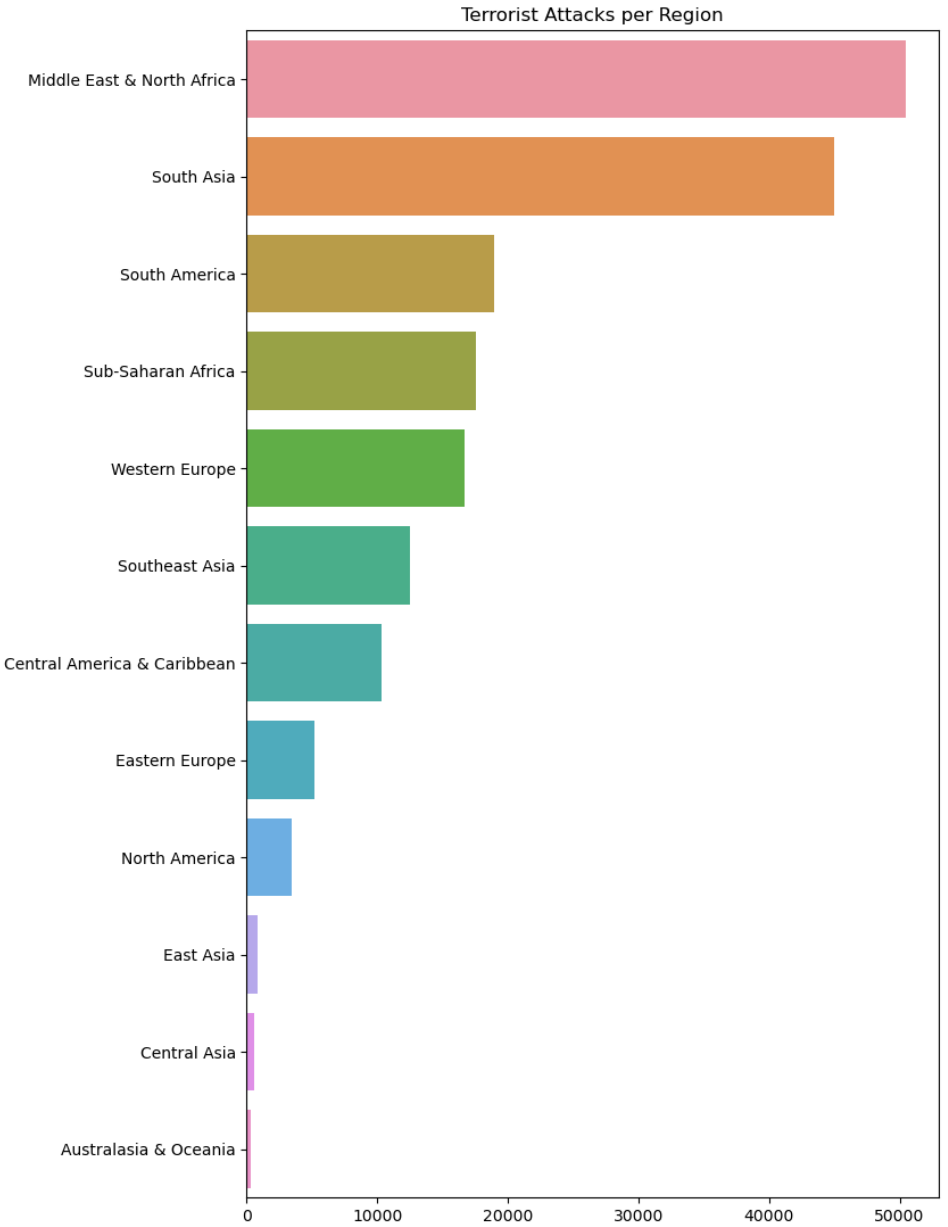


In [101]:
```
plt.figure(figsize=(13,6))
sns.countplot(x=d['targtype1_txt'],
              order=d['targtype1_txt'].value_counts().index)
plt.xticks(rotation=90)
plt.show()
```



In [106]:
```
fig, axes = plt.subplots(figsize=(16,11), nrows=1,ncols=2)

sns.barplot(x = d['country_txt'].value_counts() [:20]. values,
            y = d['country_txt'].value_counts() [:20].index,
            ax=axes [0], palette = 'magma');

axes[0].set_title('Terrorist Attacks per Country')

sns.barplot(x=df['region_txt'].value_counts().values,
            y=df['region_txt'].value_counts().index, ax=axes [1])

axes [1].set_title('Terrorist Attacks per Region')

fig.tight_layout()

plt.show()
```


Terrorist Attacks per Country
Iraq
Pakistan
Afghanistan
India
Colombia
Philippines
Peru
El Salvador
United Kingdom
Turkey
Somalia
Nigeria
Thailand
Yemen
Spain
Sri Lanka
United States
Algeria
France
Egypt
0
5000
10000
15000
20000
25000

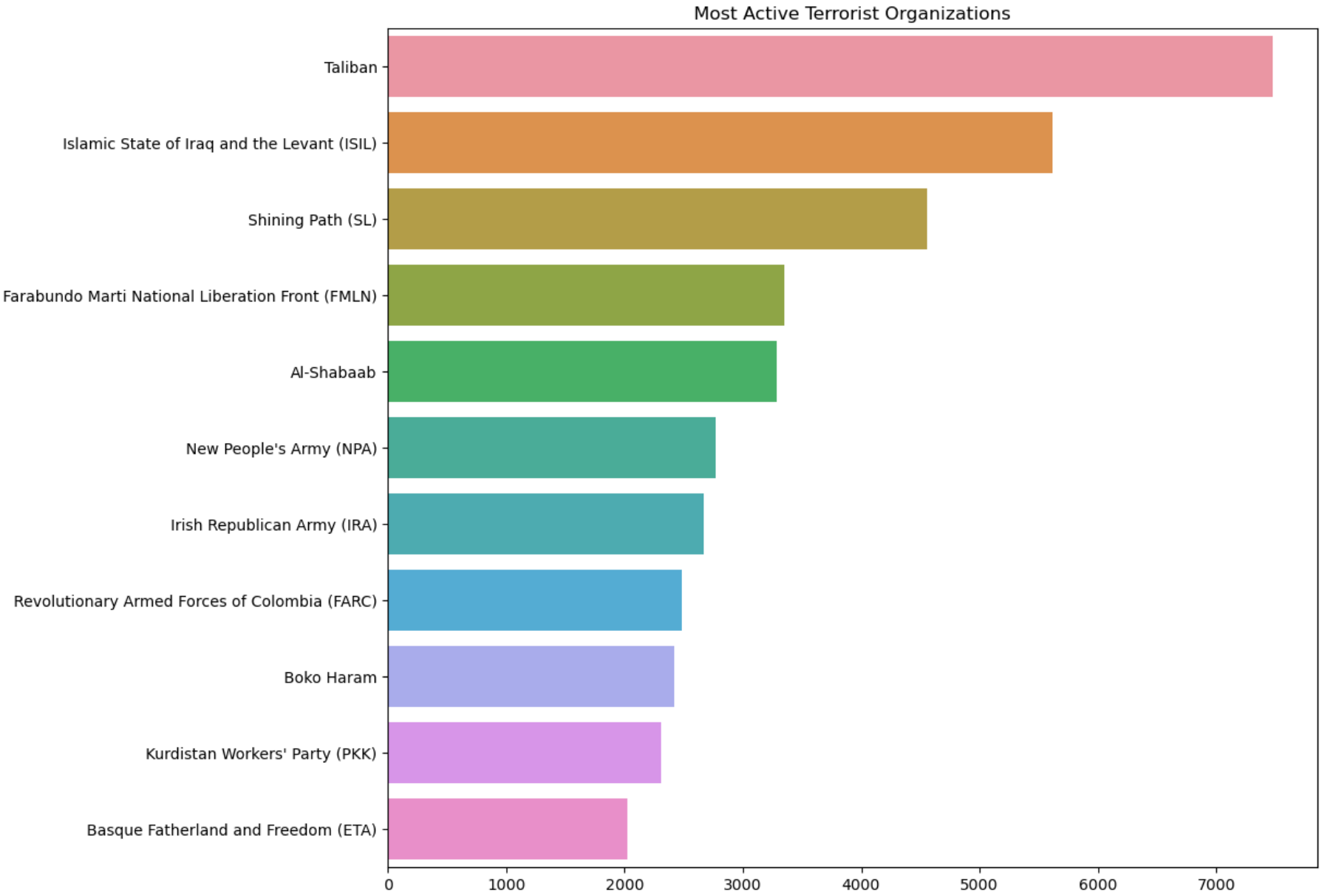

Terrorist Attacks per Region
Middle East & North Africa
South Asia
South America
Sub-Saharan Africa
Western Europe
Southeast Asia
Central America & Caribbean
Eastern Europe
North America
East Asia
Central Asia
Australasia & Oceania
0
10000
20000
30000
40000
50000

In [114]:
```
terr=d.groupby(d['country_txt'],as_index=False).count()
fig=px.choropleth (terr, locations='country_txt',
                   locationmode='country names', color='iyear',
                   hover_name='country_txt', projection='orthographic',
                   title='Total number of attacks (1970-2017)', labels={'Year' : 'Attacks'})

fig.show()
```

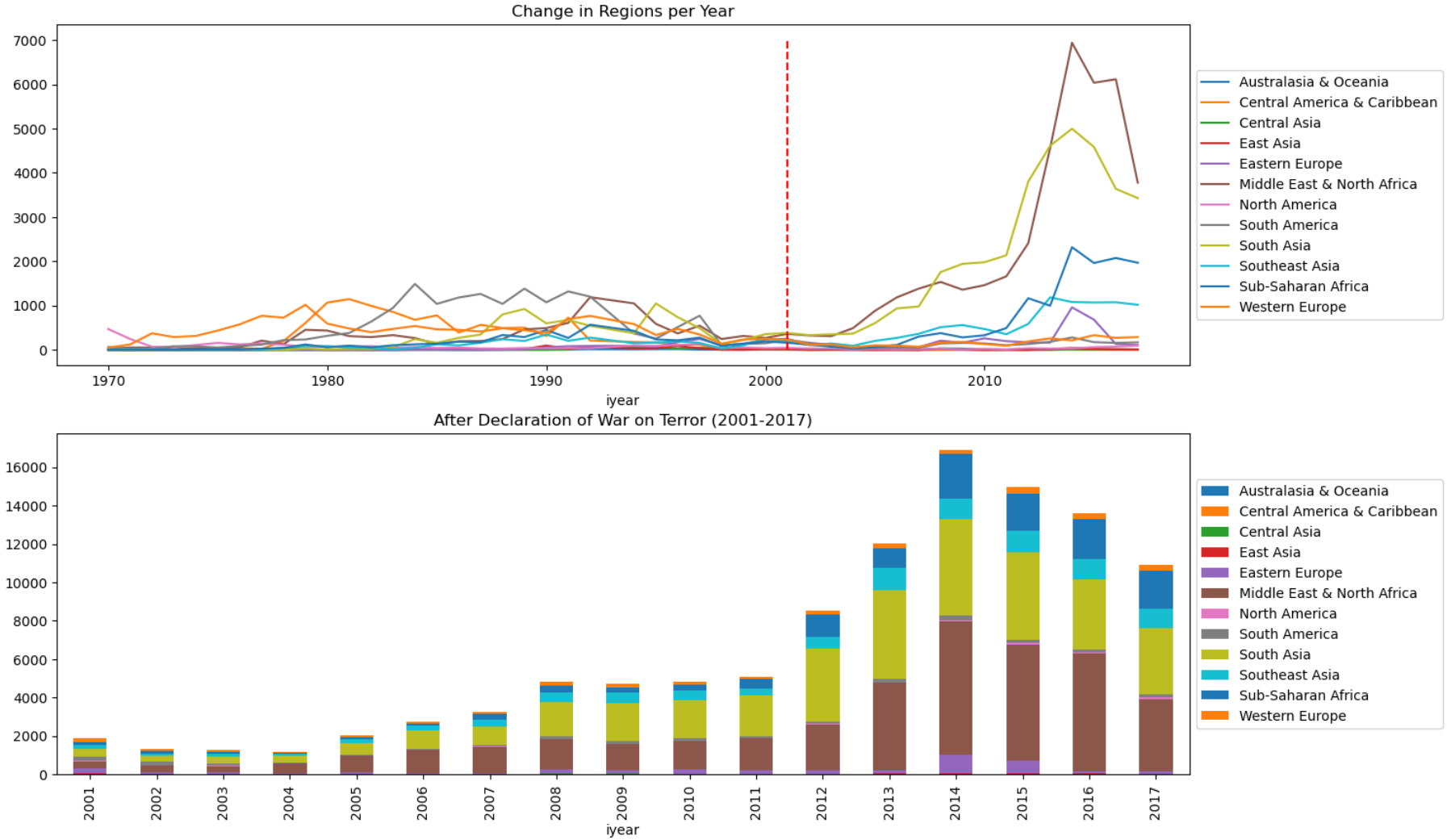
In [118]:
```
max_count=terr['iyear'].max()

max_id=terr['iyear'].idxmax()

max_name=terr['country_txt'][max_id]

min_count=terr['iyear'].min()
min_id=terr['iyear'].idxmin()

min_name=terr['country_txt'][min_id]

print(max_name, 'has suffered the maximum number of terror attacks of', max_count)
print(min_name, 'has suffered the minimum number of terror attacks of', min_count)
```

```
Iraq has suffered the maximum number of terror attacks of 24636
Andorra has suffered the minimum number of terror attacks of 1
```

In [126]:
```
plt.subplots(figsize=(11,10))

sns.barplot(y=d['gname'].value_counts() [1:12]. index,
            x=d['gname'].value_counts() [1:12].values)


plt.title('Most Active Terrorist Organizations')
plt.show()
```


Most Active Terrorist Organizations
Taliban
Islamic State of Iraq and the Levant (ISIL)
Shining Path (SL)
Farabundo Marti National Liberation Front (FMLN)
Al-Shabaab
New People's Army (NPA)
Irish Republican Army (IRA)
Revolutionary Armed Forces of Colombia (FARC)
Boko Haram
Kurdistan Workers' Party (PKK)
Basque Fatherland and Freedom (ETA)
0
1000
2000
3000
4000
5000
6000
7000

In [130]:
```
data_after=d[d['iyear']>=2001]

fig, ax = plt.subplots(figsize=(15,10), nrows=2,ncols=1)

ax [0]= pd.crosstab(d.iyear, df.region_txt).plot(ax=ax[0])

ax[0].set_title('Change in Regions per Year')
ax[0].legend (loc='center left', bbox_to_anchor = (1,0.5))
ax[0].vlines(x=2001, ymin=0, ymax=7000, colors='red', linestyles='--')
pd.crosstab(data_after.iyear, df.region_txt).plot.bar(stacked=True, ax=ax[1])
ax[1].set_title('After Declaration of War on Terror (2001-2017)')
ax[1].legend(loc='center left',bbox_to_anchor=(1,0.5))
plt.show()
```



Conclusion:

1. Attacks have increased, but more individuals have died as a result of attacks.
2. Attacks from Iraq are the highest.

3)The Middle East and North Africa have been the most specifically targeted.

4. Bombing/explosion-based attacks account for the majority of attacks.

5. Attacks on private individuals and property are most common.
6. The Taliban and ISIL both have very active groups.

In [ ]:

In [ ]:

In [ ]: