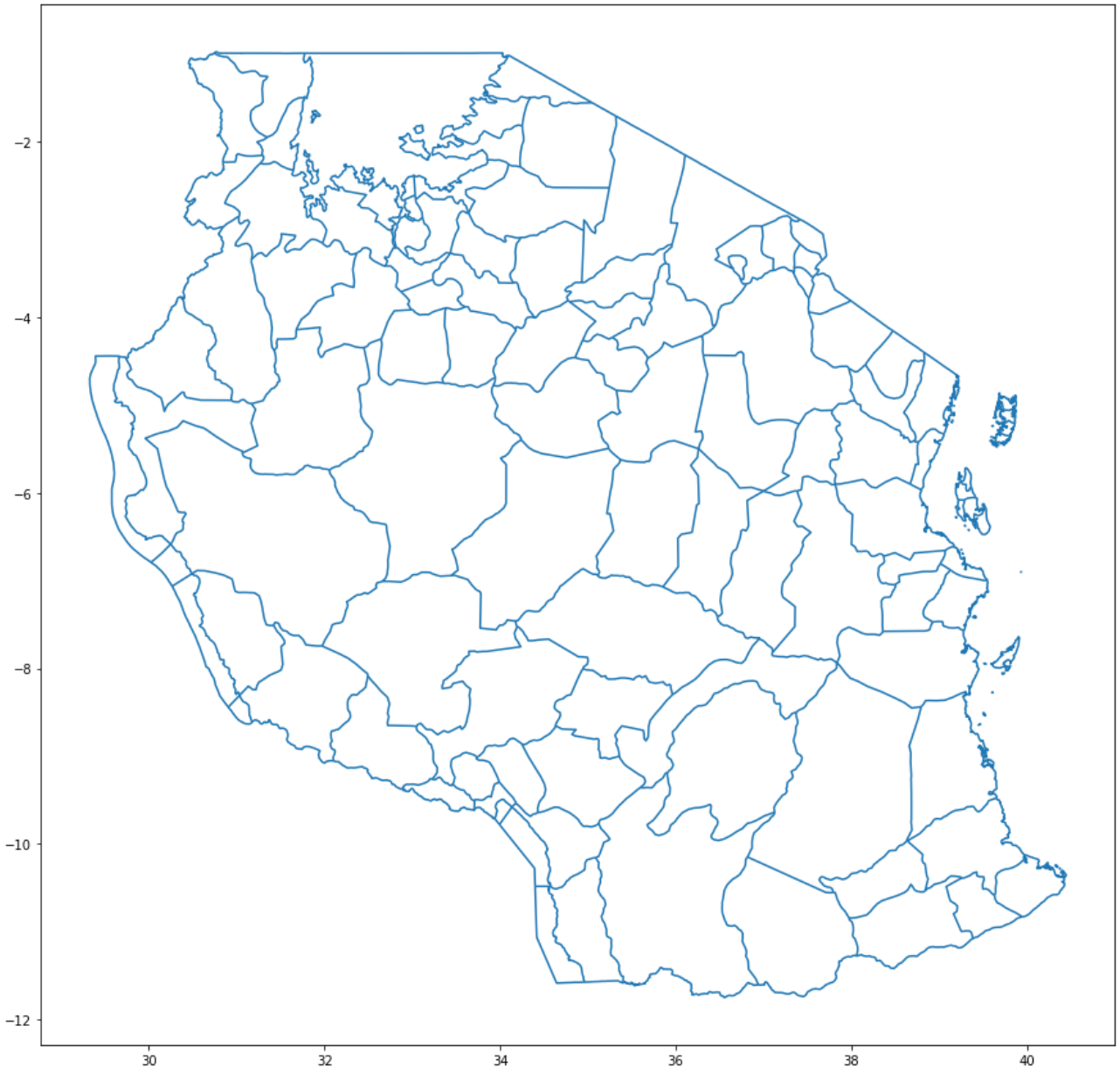
In [1]:
```
import geopandas
```

In [2]:
```
import pandas as pd
import geopandas as gpd
import matplotlib.pyplot as plt
import descartes
from shapely.geometry import Point, Polygon
%matplotlib inline
```

In [3]:
```
tanzania_map = gpd.read_file('yq759kh8097.shp')
```

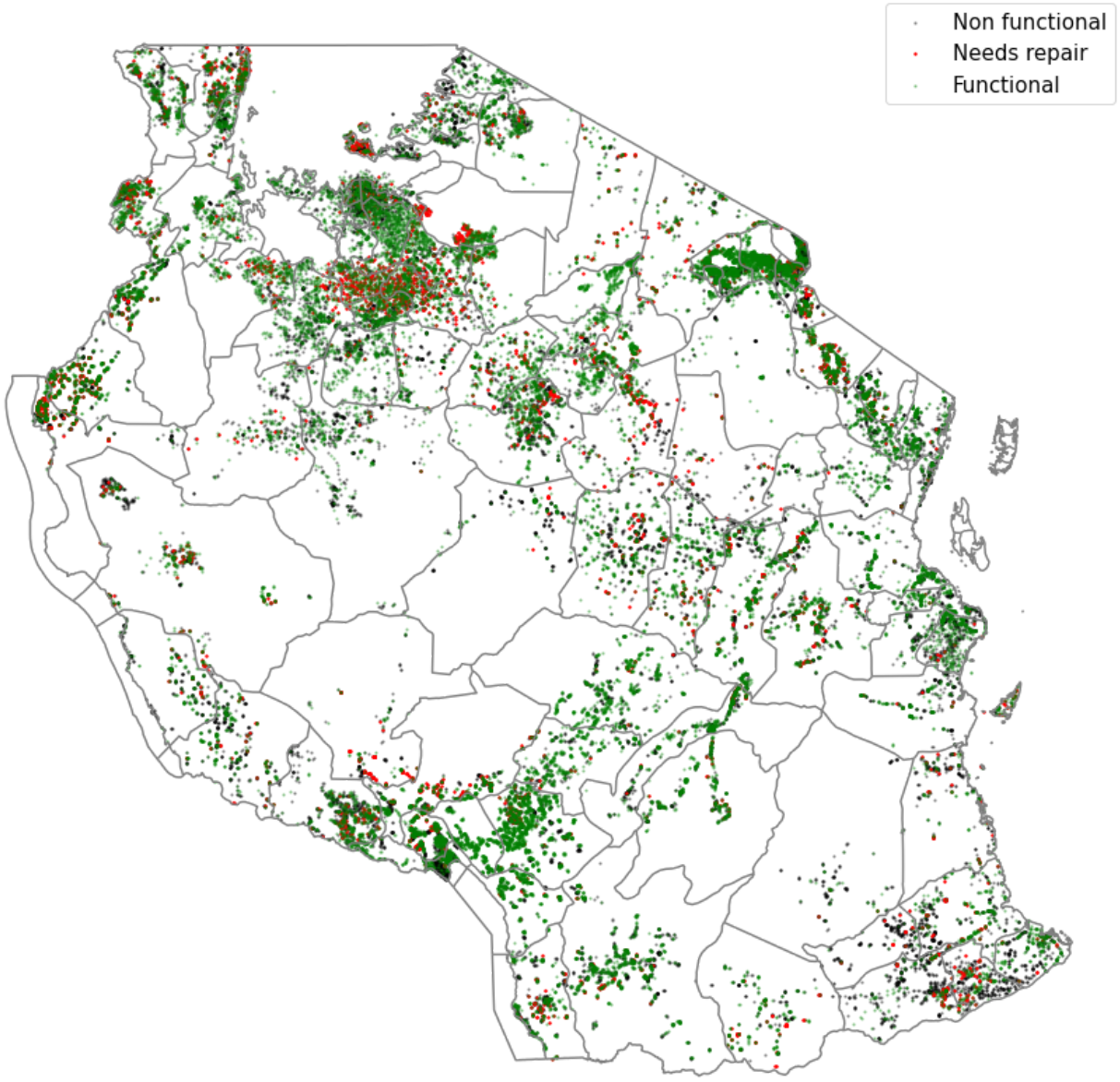
In [4]:
```
fig,ax = plt.subplots(figsize=(15,15))
tanzania_map.plot(ax=ax)
```

Out[4]: <AxesSubplot:>



In [5]:
```
df = pd.read_csv('modeling_data.csv', index_col=[0])
```

```
crs = {'init', 'epsg:4326'}
geometry = [Point(xy) for xy in zip(df['longitude'], df['latitude'])]
geo_df = gpd.GeoDataFrame(df,
                          crs = crs,
                          geometry = geometry)

geo_df.drop(['latitude', 'longitude'], axis=1, inplace=True)

fig,ax = plt.subplots(figsize=(15,15))
tanzania_map.plot(ax=ax, color='grey')
geo_df[geo_df['target'] == 0].plot(ax=ax, markersize=2, color='black',
                                   marker='o', label='Non functional',alpha=0.3)
geo_df[geo_df['target'] == 1].plot(ax=ax, markersize=2, color='red',
                                   marker='o', label='Needs repair')
geo_df[geo_df['target'] == 2].plot(ax=ax, markersize=2, color='green',
                                   marker='o', label='Functional', alpha=0.3)

plt.axis('off')


plt.legend(prop={'size': 15});
# plt.title('Waterpoint Status Map');

# plt.savefig('well_location.png', transparent=True)
```



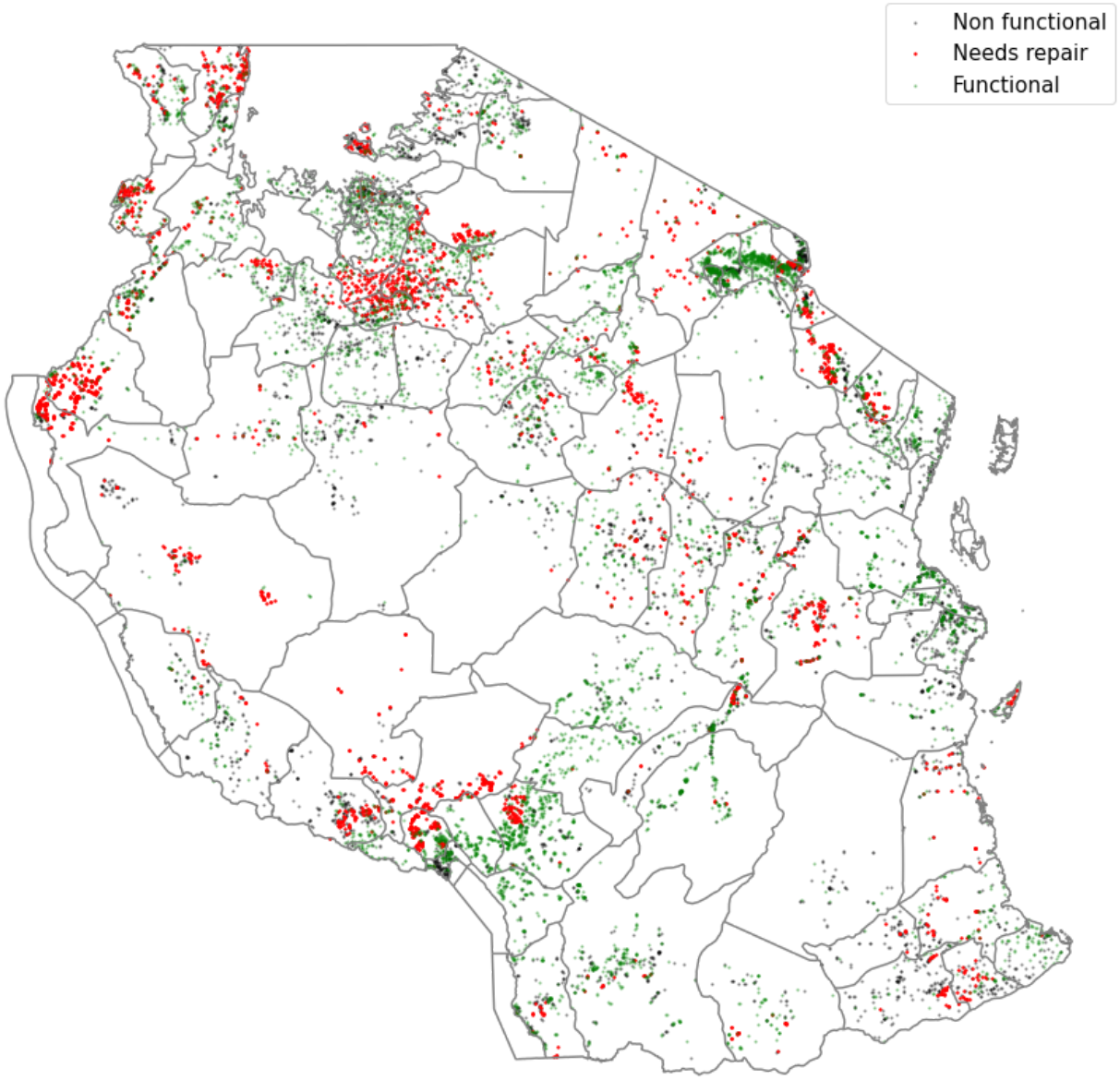
In [6]:

```
df2 = pd.read_csv('test_map_data.csv', index_col=[0])
crs = {'init', 'epsg:4326'}
geometry2 = [Point(xy) for xy in zip(df2['longitude'], df2['latitude'])]

geo_df2 = gpd.GeoDataFrame(df2,
                           crs = crs,
                           geometry = geometry2)
geo_df2.drop(['latitude', 'longitude'], axis=1, inplace=True)
geo_df2.head()
```

Out[6]:

	Prediction	geometry
0	1	POINT (35.29080 -4.05970)
1	2	POINT (36.65671 -3.30921)
2	2	POINT (34.76786 -5.00434)
3	0	POINT (38.05805 -9.41867)
4	2	POINT (35.00612 -10.95041)

In [7]:
```
fig,ax = plt.subplots(figsize=(15,15))
tanzania_map.plot(ax=ax, color='grey')
geo_df2[geo_df2['Prediction'] == 0].plot(ax=ax, markersize=2, color='black',
                                         marker='o', label='Non functional',alpha=0.3)
geo_df2[geo_df2['Prediction'] == 1].plot(ax=ax, markersize=2, color='red',
                                         marker='o', label='Needs repair')
geo_df2[geo_df2['Prediction'] == 2].plot(ax=ax, markersize=2, color='green',
                                         marker='o', label='Functional', alpha=0.3)

plt.axis('off')


plt.legend(prop={'size': 15});
# plt.title('Waterpoint Status Map');

# plt.savefig('test_well_location.png', transparent=True)
```



In [ ]:
```
```