**EUROPE**

Statistical information (as of 2021)

Land Area: 10.18 million square kilometers

Population: 747 million

Total Countries: 44 sovereign countries

Natural Resources:

Minerals Forests Agricultural Resources Fisheries

Oil & Natural Gas Renewable Energy

**WATER**

This map depicts water use in Europe during the last three decades ending 2021.

Substantial increases in water use between 1992 – 2021 were due to urbanization and population growth, agriculture, melting glaciers and reduced snowpack, and increased evapotranspiration. While it is obvious how urbanization and population growth change the needs and uses of water to sustain higher demands, evapotranspiration is not. Evapotranspiration is the loss of water to the atmosphere through as the name suggests, evaporation from surfaces and plants. As the amount of water that evaporates increases, the need to replace the water from other sources increase which leads to water scarcity.

A couple extreme water events occurring during the 30 years we analyzed were:

* During the summer of 2002, central Europe experienced its worse and most devastating flooding events in history. There was heavy rainfall for most of the summer which caused the soil to be saturated and incapable of absorbing more water from the snow melt that was happening at the same time. Germany, Czech Republic, and Austria were hardest hit by the flooding of the Elbe, Danube, and Vltava rivers.
* In another part of Europe, almost occurring during the same time as the floods of 2002, Spain, Portugal, and Italy experienced a very long period of severe droughts. The European droughts between 2000 and 2010 were characterized by reduced rainfall, elevated temperatures, and water evaporation.

**LAND**

This map depicts land use in Europe during the last three decades ending 2021.

While avoiding redundancy, it is worth noting that similar factors increasing land use in Asia, North and South America and Oceania were at play in Europe. These common influences were urbanization, infrastructure development and agriculture. Europe’s efforts to address and minimize the effects of climate change by making investments in renewable energy sources also contributed to increased land uses.

A couple extreme land events occurring during the 30 years we analyzed were:

* European Heatwave of 2003: The European heatwave of 2003 was one of the most extreme and deadly heatwaves in Europe's recorded history. It was linked to climate change and resulted in prolonged periods of exceptionally high temperatures. This extreme heat had severe consequences for land, leading to droughts, water shortages, and wildfires across France, Italy, Germany, Spain, Portugal, and the United Kingdom. Agricultural land suffered from crop failures, and ecosystems were stressed as the heatwave persisted.
* Flooding in Central Europe in 2013: In 2013, Central Europe experienced devastating floods primarily caused by a combination of heavy rainfall and snowmelt, which was influenced by climate change-related factors like altered precipitation patterns. The floods impacted Germany, Austria, and the Czech Republic. Large areas of land, including urban and rural areas, were inundated, leading to significant damage to infrastructure, agriculture, and natural habitats.

**FORESTRY**

This map depicts forestry use in Europe during the last three decades ending 2021.

Climate changes between 1992-2021 contributed to increased forestry use in Europe. Unlike the Americas and Asia, Europe like Oceania took bold steps towards renewable energy, forest restoration and reforestation and initiatives to increase public awareness and conservation to counter the effects.

A couple extreme land events occurring during the 30 years we analyzed were:

* Wildfires in Southern Europe: Southern European countries, such as Spain, Portugal, Greece, and Italy, witnessed an increase in the frequency and intensity of wildfires during the 30 years between 1992-2021. Rising temperatures, prolonged droughts, and changing precipitation patterns created the perfect conditions for wildfires. These wildfires impacted forestry, agriculture, and human settlements. Forests were destroyed, agricultural land was burned, and communities were displaced.
* Floods in Central and Northern Europe: Germany, Austria, and the Netherlands, experienced more frequent and severe flooding events. Changing precipitation patterns, increased snowmelt due to rising temperatures, and changes in river flow contributed to these floods. They led to damage to agricultural land, infrastructure, and urban areas, causing significant economic losses and displacing communities.
* Land Degradation in Southern Europe: In regions of Southern Europe, prolonged periods of drought, increased because of climate change resulted in soil erosion and land degradation. Reduced soil fertility and the expansion of desertification had negative effects on agriculture and land productivity. This led to challenges in maintaining sustainable land use practices and food security.