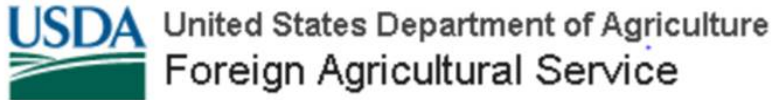




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## Climate Change Damages German Forests

September 20, 2020

Report Highlights: Storms, drought, fires, and bark beetle have caused immense damage to German forests in recent years. Waldsterben (Forest dieback) is slowly gaining public attention. The German government has started funding programs to support the transformation from softwood to hardwood with the goal of making the forest more resilient to climate change. This is likely to reduce the export potential of the German forest industry, opening up chances for suppliers of softwood. This report provides a status update of German forests and forest product trade, with a focus on U.S. exports. Storms, extreme drought, more frequent forest fires and bark beetle infestations – all of these have caused immense damage to Germany's forests over the past three years. In mid-August 2020, the German Federal Ministry of Food and Agriculture (BMEL) published updated data that indicates forest damage is much worse than expected. BMEL assumes that 178 million cubic meters of damaged wood have to be removed. An area of 285,000 hectares (700,000 acres) will have to be reforested. A large portion of the damage occurred in North Rhine-Westphalia, Saxony-Anhalt, Hesse, and Thuringia. Climate change will most likely lead to an increase in the frequency and intensity of extreme weather events in the future. Heat, drought and storms will also promote the mass occurrence of insect pests. Not all trees species are affected in the same way. Spruce trees are the most common in Germany, and like no other tree it suffers the most from increasing drought and storm events. On the one hand, flat-rooted spruces suffer directly from drought stress making the species vulnerable to the bark beetle. On the other hand, the tree species is also particularly affected by storm damage. Drought and heat are also affecting other common trees, like beech and oak, but to a lesser extent. In general, this means that the whole German forest is damaged to varying degrees. In view of these serious damages, the German government is setting up programs to help forests adapt to climate change in the long term. The government programs are currently funded with over \$2 billion allocated to support the removal of damaged timber and fund reforestation. The goal is to convert to more climate-adapted mixed forests.

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**Report Highlights:**

Storms, drought, fires, and bark beetle have caused immense damage to German forests in recent years. Waldsterben (Forest dieback) is slowly gaining public attention. The German government has started funding programs to support the transformation from softwood to hardwood with the goal of making the forest more resilient to climate change. This is likely to reduce the export potential of the German forest industry, opening up chances for suppliers of softwood. This report provides a status update of German forests and forest product trade, with a focus on U.S. exports.

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Climate change will most likely lead to an increase in the frequency and intensity of extreme weather events in the future. Heat, drought and storms will also promote the mass occurrence of insect pests. Not all tree species are affected in the same way. Spruce trees are the most common in Germany, and like no other tree it suffers the most from increasing drought and storm events. On the one hand, flat-rooted spruces suffer directly from drought stress making the species vulnerable to the bark beetle. On the other hand, the tree species is also particularly affected by storm damage. Drought and heat are also affecting other common trees, like beech and oak, but to a lesser extent. In general, this means that the whole German forest is damaged to varying degrees.

In view of these serious damages, the German government is setting up programs to help forests adapt to climate change in the long term. The government programs are currently funded with over \$2 billion allocated to support the removal of damaged timber and fund reforestation. The goal is to convert to more climate-adapted mixed forests.

## **Hardwood and Softwood in Germany**

Germany ranks among the most densely wooded countries in Europe. Over 30% of Germany or 11.4 million hectares (28 million acres) is covered in woodland. At the same time, Germany is a densely populated country with approximately one-quarter of the population of the United States on an area smaller than the state of Montana.

Approximately 56% of the woodland in Germany consists of coniferous species (softwood) and the remaining 44% are deciduous hardwoods. Currently, the most important native hardwoods are beech (16%) and oak (10%). The most important native softwoods are spruce (26%), pine (23%), fir (3%) larch (3%), and increasingly the Douglas fir (2%). Softwood is the backbone of the German forest industry on the domestic market with 90% of the wood used within the German forest industry being softwood. Germany also exports softwoods to the United States, neighboring European countries, Mediterranean countries, and Asia. In recent years, Germany has become the leading European exporter of sawn conifer timber.

Currently, there is a transformation of the German forest under way, with more hardwood trees planted in recent years. The aim is to make woodlands more resistant to heat, drought, storms, and parasites. Hardwoods are generally more resistant to these pests and extreme weather conditions. The next forest generation is meant to be roughly a quarter softwood and three quarters hardwood. As a

result, there looms the risk for the German forest industry that wood demand for building, furniture, or paper will be less covered by domestic production.

### **Forest Dieback will Further Empower the Environmental Movement**

For now, the highpoint for forest dieback is expected in 2021 but the highpoint will move further back if the impact of climate change continues to increase. The German government is currently working on its forest strategy through 2050 and funding programs in the short term to try to get ahead of the curve. However, such things take time and forestry -by nature- is very slow to adapt to changing conditions. With most common hardwood trees, like beech and oak, also having problems with extreme heat, drought, and storms, the ongoing transformation of the German forest might not be sufficient and the need for other species or trees with different traits may become important in managed forest plantations.

Germans have a romantic view of their country's woodlands and a love of forests is deeply rooted in the German psyche. So far, forest dieback has not caught public attention. Once the forest dieback reaches the spotlight, it will likely further empower the strong environmental movement in Germany. It is worthwhile to remember that back in 1980, acid rains caused massive forest dieback and the public outcry was one of the main reasons for the rise of the Green party in Germany.

### **Trade in Forest Products**

German trade in forest products was traditionally fairly balanced, but in recent years German exports increased, with sales of over \$9 billion in 2018 and 2019. This increase was the result of an abundant supply of wood due to damage caused by storms, drought, and bark beetle infestation. Two-thirds of German exports go to the European Union, while the United States and China are the main destinations outside of the European Union, with a volume of about \$0.6 billion each.

German imports of forest products amounted to nearly \$8 billion in 2019, with three-quarters coming from European Union countries. China, Russia, Switzerland, Belarus, and Ukraine are the top five origins outside of the European Union. U.S. exports of forest products to Germany have decreased over the past years, reaching \$78 million in 2019. Top U.S. exports to Germany are veneer sheets from non-coniferous wood, sawn oak wood, and other sawn non-coniferous wood. Germany exports sawn spruce wood, fiberwood, and sawn pine wood to the United States.

Trade in forest products is expected to change gradually with the slow transformation of the German forest. In the long term, Germany will have a stronger demand for softwood imports, while there will be an abundant supply of domestic hardwood.

## **Top U.S. Forest Exports Might be in Trouble**

The top U.S. export product – veneer sheets – is facing problems in the looming expiration of the European Union’s exemption for fumigation with Methyl Bromide for U.S. origin oak and walnut logs. The fumigation is mandatory to prevent "Thousand Crankers," "Walnut Twig Beetle," and “Oak Wilt Mushroom” from coming to Europe. The U.S. Food and Drug Administration approved alternative product “proFume tm” for fumigation, finding it to be safe and effective. The European Union has been asked to approve this agent for fumigation of round wood before the permit for Methyl Bromide expires. This product is already being used very effectively in other sectors in the European Union. Veneer sheets are used primarily in the car manufacturing industry of Germany. American oak and American walnut have characteristics in texture, color, and growth that cannot be replaced by any European wood species.

### **Attachments:**

No Attachments.