

An illustration of a tree care worker in a yellow jacket and orange helmet climbing a tree trunk. The worker is secured with ropes and a harness. The background is a solid green color with a diagonal split. The top right portion is white, containing the company logo and title. The bottom right portion is white, containing the subtitle.

**SENEBOGEN**

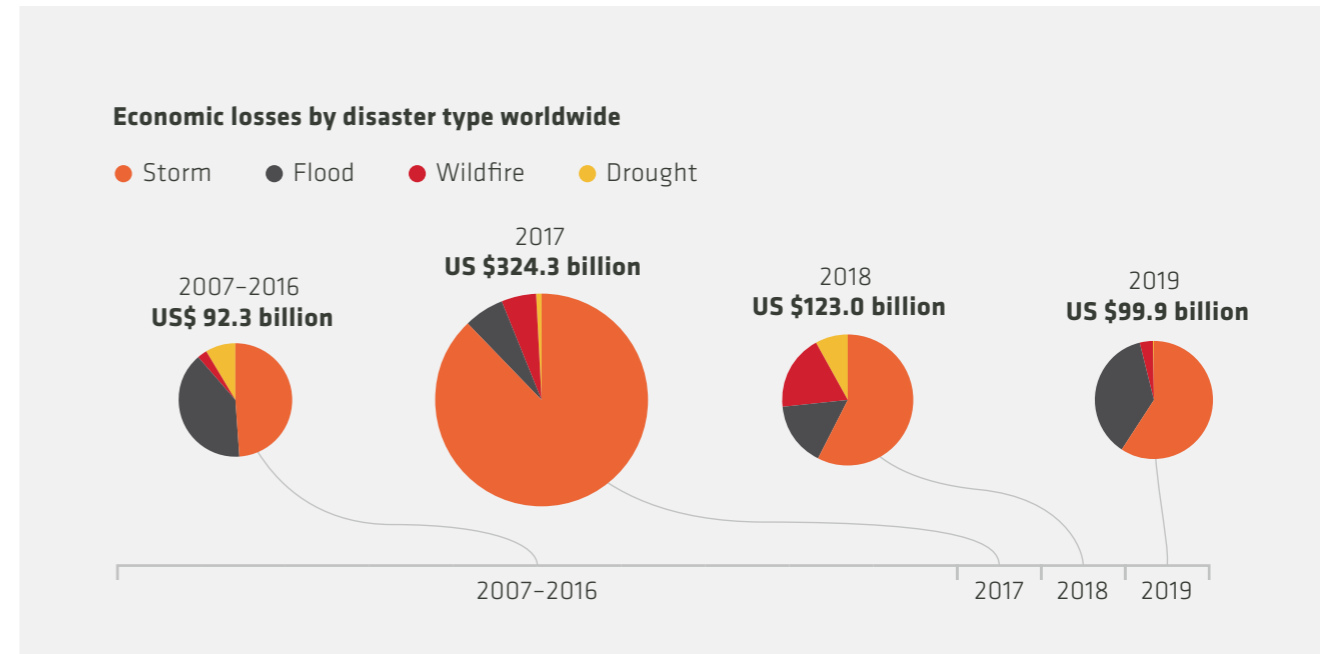
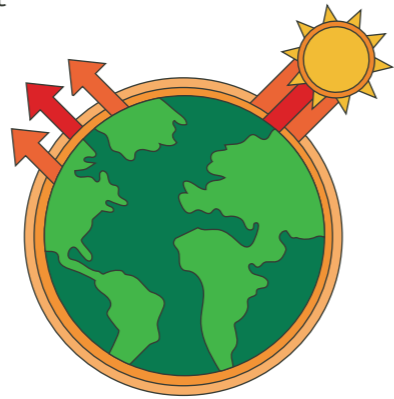
# **Tree Care & Landscape Management**

**From the effects of climate change  
to innovative solutions in tree care**

# Global effects of climate change

Long-lasting hot spells and drought have become more frequent in recent years. This presents arborists with new challenges.

Trees in urban areas have to fulfill a variety of functions. They provide shade, reduce exhaust fumes, provide a natural habitat and food for animals and insects, and create an attractive overall appearance. Especially in inner-city areas, the drought has caused dramatic effects in recent years. For tree care workers, this means more work and less time per job. Efficiency, conservation of personnel resources, and safety are the top priorities in landscape management and tree care maintenance.



## The impacts of climate change

By 2100, a mean global temperature increase of between **1.6 and 4.7 degrees Celsius** is projected compared to the period **1850-1900**. This temperature change would be greater than all natural temperature fluctuations observed in recent centuries.

Sources: CRED, Umweltbundesamt

# Consequences of climate change: damaged trees and growing timber market

Climate change is having a major impact on forests and trees around the world. Abiotic damage in particular, such as storms, fire, wind breakage, drought and snow, is leading to high order numbers in tree and landscape maintenance. The felling, traffic safety, and the reconditioning associated with this have become increasingly complex in recent years and led to new challenges in tree care.

Also, the increasing infestation of wood-destroying insects weakened the vitality of the trees and makes

them susceptible to bacteria, fungi, and or infestation by other insects.

In addition, there is a great demand for wood due to the growing market for construction timber in Europe and Asia, which is also reflected in the increasing number of jobs in timber harvesting and a rapid increase in prices for sawn timber and other wood products.

In Russia, salvage logging accounts for about 1/7 of the total recorded volume of wood harvested annually.  
**2009–2018: 28.7 million m<sup>3</sup>/year on average**

## Industrial roundwood removals in 2018

Europe\*

650,000,000 m<sup>3</sup>

Northern America\*\*

519,000,000 m<sup>3</sup>

Asia-Pacific

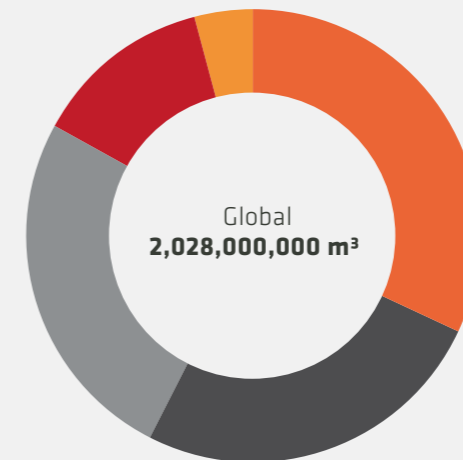
519,000,000 m<sup>3</sup>

Latin America and Caribbean

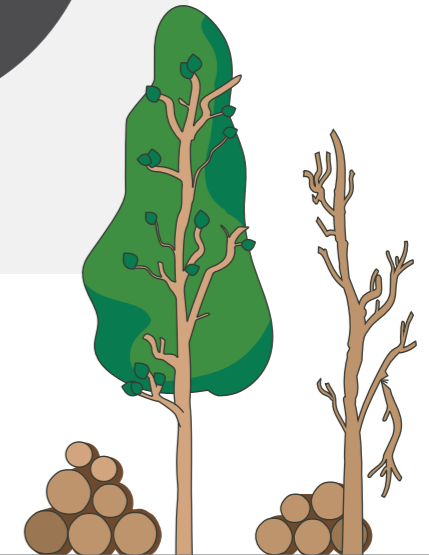
261,000,000 m<sup>3</sup>

Africa

79,000,000 m<sup>3</sup>



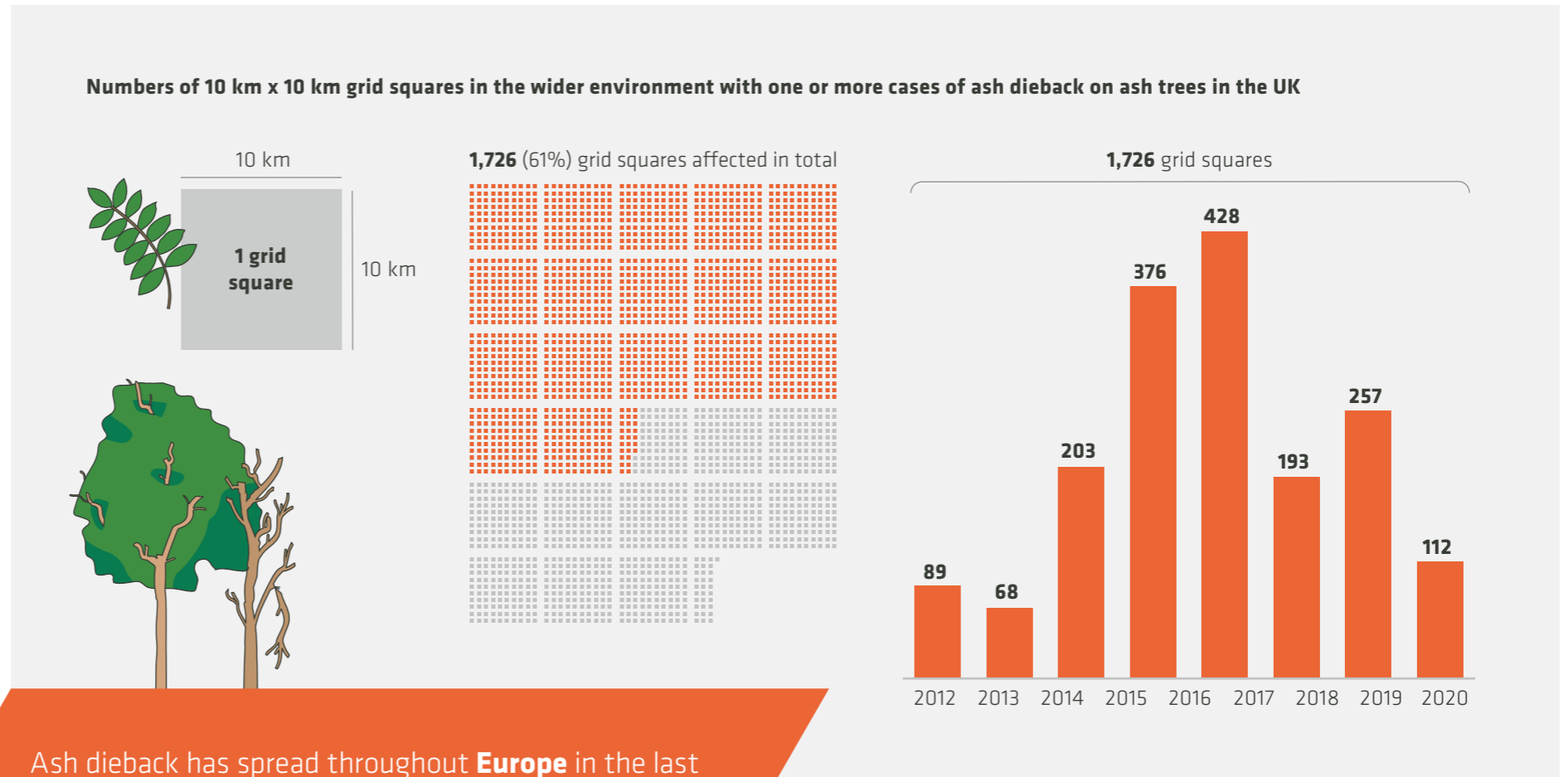
\* including Russian Federation; \*\* USA and Canada  
Source: FAO



# Ash dieback leads to many tree felling operations

About 30 years ago, the fungus 'Hymenoscyphus fraxineus', which is the cause of ash dieback, was introduced from East Asia to Europe. In large parts of the UK, for example, ash trees are already showing symptoms of the disease and will therefore be significantly affected or even die within the next few years.

As yet, there is no effective prevention or treatment that will stop ash dieback. Arborists must therefore continue to prepare for increasing numbers of trees to be felled in the coming years and for efficient felling.



Ash dieback has spread throughout **Europe** in the last 20 years, affecting about **70% of ash trees** in forests.

Source: Forest Research

# Risks in tree care

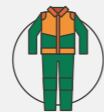
Work in landscape preservation and tree care is associated with a variety of hazards. However, these are often underestimated or not sufficiently recognized. Inadequate tools, falling branches, and cutting material or lack of experience are just a few examples of the causes of accidents.

In addition to personal injury, damage to houses or roads are not only frustrating, but also financially burdensome for the originator. A sufficient risk assessment before tree care operations and the use of suitable equipment, machinery, and experienced staff is therefore indispensable for minimizing risks.

## Dangers of tree care



Risk of injury from falls from ladders



Insufficient protective measures against cuts from sharp/pointed tools and machine parts



Falling branches or ripping logs



Working with chainsaws without appropriate training/protective clothing



Incorrect felling technique



Trees that are not brought down properly and get stuck



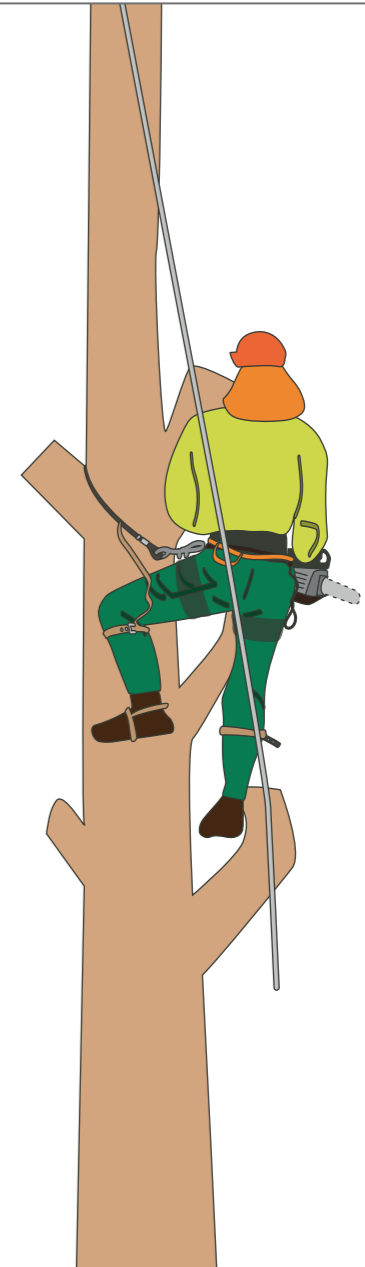
Insufficient knowledge of cutting and climbing techniques



Unsuitable working material



High tension during delimiting

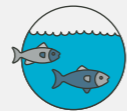


# Felling work poses a major risk for occupational accidents

Tree care accidents that are associated with personal injury are particularly tragic. In the EU, over 13,000 people were injured in tree felling work in 2018 alone.

The topic of occupational safety is increasingly in the focus of many tree and landscape maintenance companies. It is important to protect employees by providing them with the necessary tools and sufficient protective equipment and to prevent the loss of employees due to accidents.

## Occupations with high fatal work injury rates in the U.S. in 2019, top 3\*



**145**

Fishers and related fishing workers



**68.9**

Logging workers



**61.8**

Aircraft pilots and flight engineers

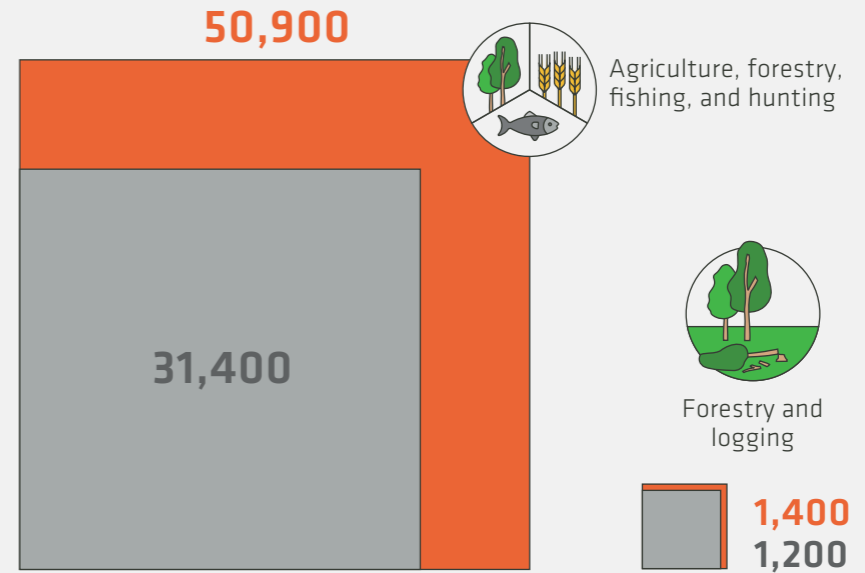
\* fatal work injury deaths per 100,000 full-time equivalent workers

**13,815 non-fatal accidents** at work were recorded in forestry and logging in the EU28 in 2018

## Numbers of non-fatal occupational injuries and illnesses by industry and case types in the U.S. in 2019

● Total recordable cases

● Cases with days away from work, job restriction, or transfer



Sources: Eurostat, U.S. Bureau of Labor Statistics

# Hazard tree felling – when special measures are necessary for safe felling

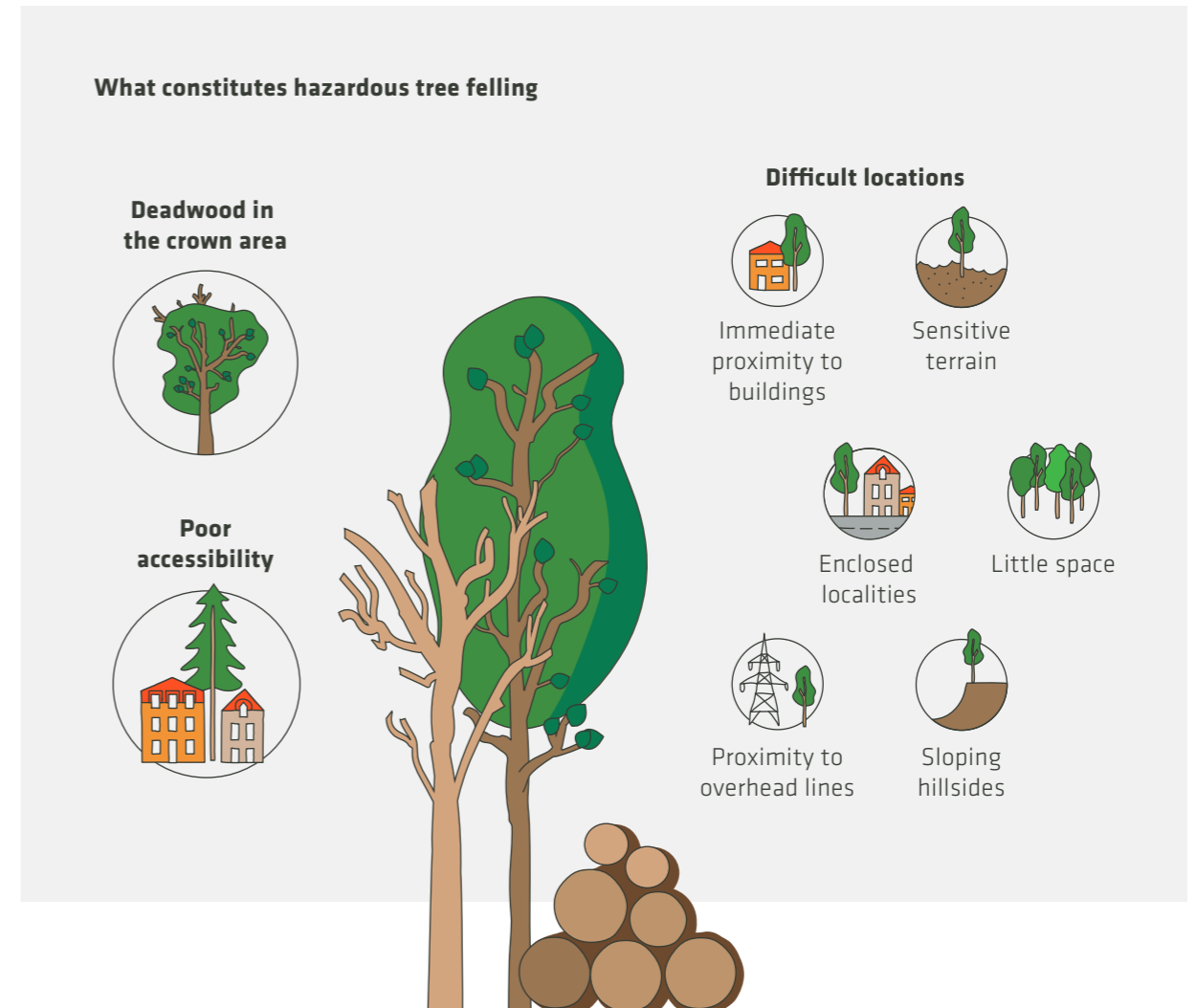
Whenever trees are cut under difficult conditions, we speak of dangerous or hazardous tree felling.

Especially in the inner city one has to deal with narrow conditions, fenced areas, or surrounding residential and commercial buildings. Trees must then be removed step by step, so as not to cause any material damage.

Additionally, sensitive or difficult terrain, such as on hillsides, can also pose challenges.

Sufficient stability must be guaranteed at all times. This often makes tree felling complicated - but not impossible.

However, even experienced workers can reach their limits. In addition to experience, the right equipment and appropriate felling techniques are paramount to the safety of the operation.

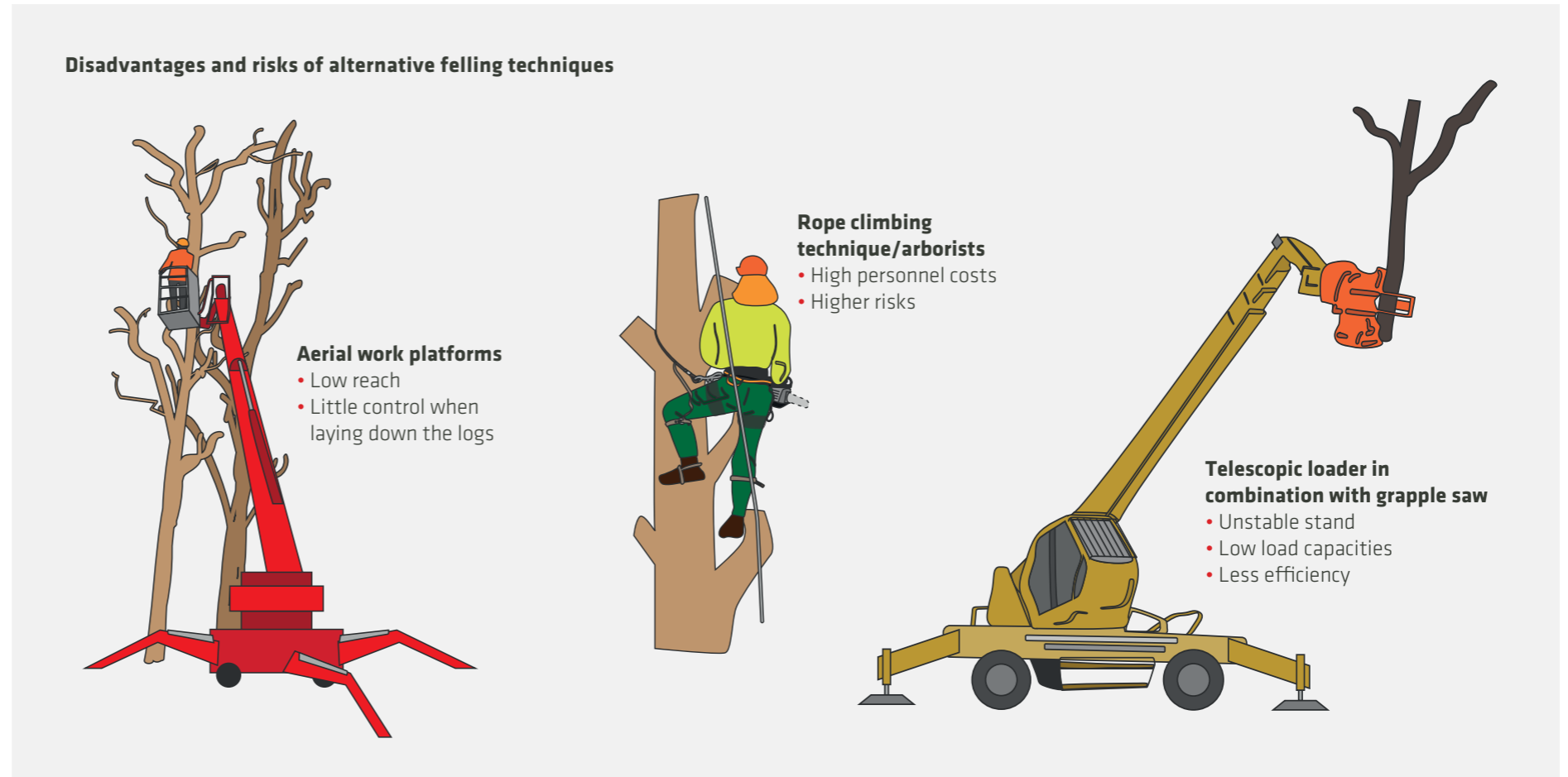


# The right **felling technique** is what matters

Rope climbing, telescopic loaders, or working with aerial work platforms – all these are common methods in tree care. Nevertheless, there are various risks concerning occupational safety and stability.

Particularly in the case of hazardous tree felling, the safety of the working equipment and above all of the personnel is essential.

A high level of expertise and many years of experience are important prerequisites. In addition, complex tree felling operations in particular are labor-intensive and require a lot of effort in planning and implementation.



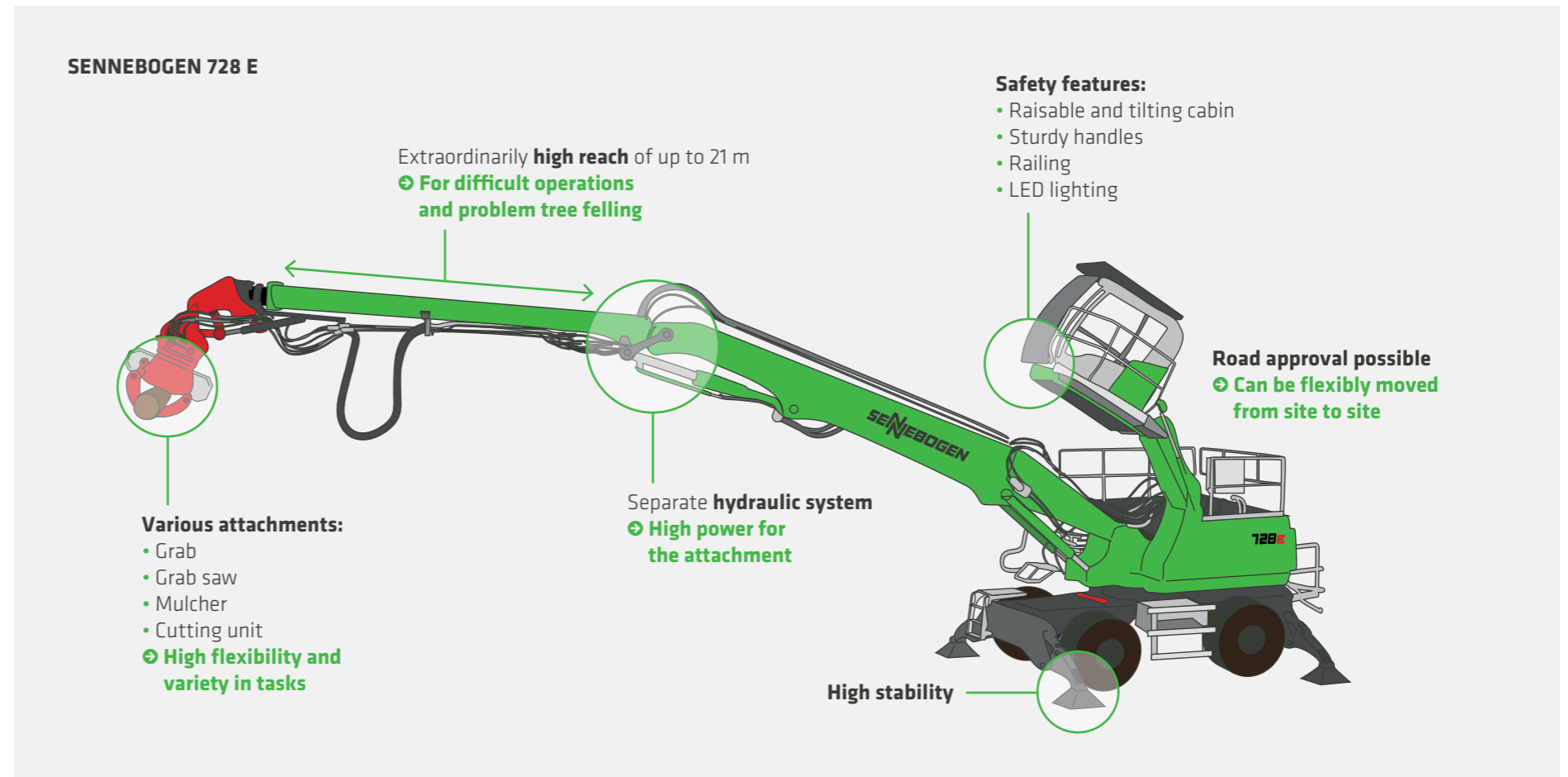


# This is how a **modern felling technique** can solve problems in **tree care**

More damage due to climate change, challenging hazardous tree felling, and increasing numbers of jobs must be rethought in tree care.

The SENNEBOGEN tree care machines with the new 728 E create a safe and efficient working environment in tree care and landscape maintenance. Safety features, such as full protection grids on the armored glass cabin, ensure adequate protection for the operator and reduce the risk of occupational accidents.

Diverse scenarios can be handled efficiently and profitably thanks to the high level of performance and range.



Would you like advice on our solutions concerning tree and landscape maintenance?

**Please feel free to contact us:**

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