

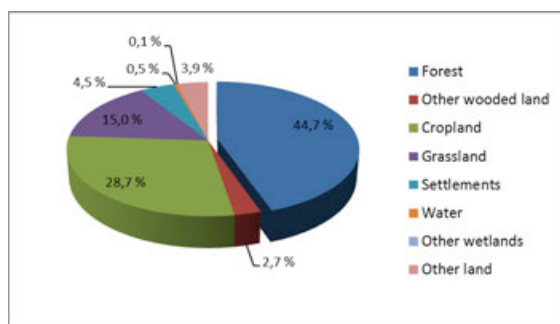
# The Second Kosovo National Forest Inventory: Resources Remain Stable



For the first time, Kosovo's entire forest area has been assessed. The results of the second forest inventory show that, since 2003, **both** the forest area and the growing stock have remained stable. Kosovo's forest cover 481,000 hectares. Annual harvest is 1.6 million cubic metres, which is 300,000-400,000 m<sup>3</sup> above the recommended long-term harvest levels of 1.2-1.3 million m<sup>3</sup>. More than 90 percent of the volume is not harvested according to regulations.

The purpose of Kosovo's national forest inventory is to provide information for national policy and strategic planning in areas such as:

- investments in wood processing
- international reporting on forest resources and climate change



**Figure 1.** The forests in Kosovo cover 481,000 hectares, or 45 percent of the total land area, while agriculture land covers 29 percent and grassland 15 percent.

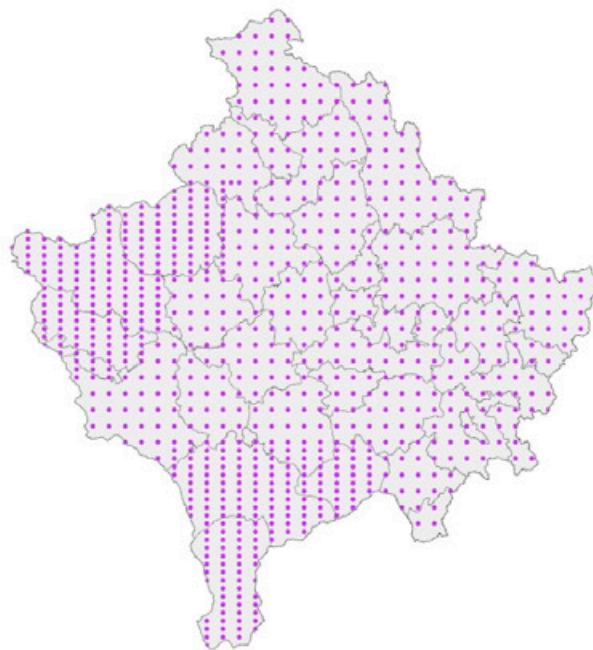
The total growing stock of Kosovo's forest is fairly stable at around 40 million m<sup>3</sup>.

**Table 1.** Kosovo's growing stock in 1000 m<sup>3</sup> in 2003 and 2012, sorted by tree species.

Tree species	2002 (1000 m <sup>3</sup> )	2012 (1000 m <sup>3</sup> )
<i>Quercus cerris</i>	5,170	4,282
<i>Quercus petraea</i>	4,276	3,669
Other <i>Quercus</i> sp.	129	1,292
<i>Fagus</i> sp.	15,963	18,524
Other broadleaves	3,704	6,750

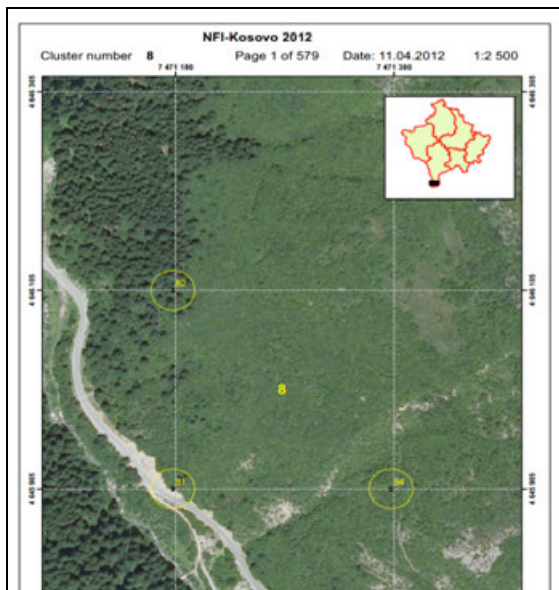
Undefined broadleaves	5,983	0
<i>Abies alba</i>	1,577	1,573
<i>Picea abies</i>	1,402	1,840
<i>Pinus</i> sp.	2,018	2,502
Other conifers	223	77
<b>Total</b>	<b>40,445</b>	<b>40,509</b>

In total, 3,453 permanent sample plots are distributed all over Kosovo. During six months in 2012, twelve foresters visited and assessed 1,860 of these forest plots.

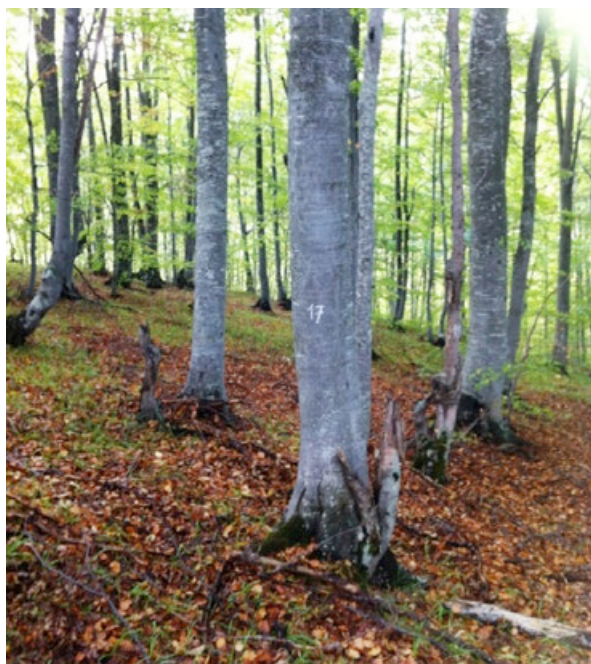


**Figure 2.** Placement of Kosovo's 3,453 permanent sample plots.

The national forest inventory combines new and traditional methods. Geographic Information Systems (GIS) and aerial photographs are used for a preliminary land use classification and in order to facilitate navigation to, and assessment of, the forested sample plots.

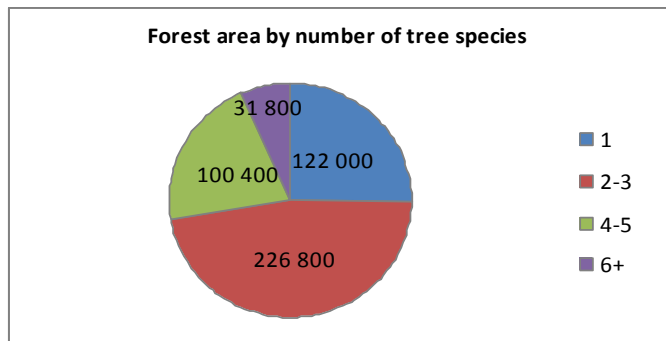


Using the permanent sample plots established in the 2003 national forest inventory, and detailed maps showing the location of plot trees, the fieldworkers were able to re-measure many of the same trees as in the 2003 forest inventory. Stumps, where ten years ago there stood a tree, meant that the tree had been harvested during the 2003-2012 period.



### ***Kosovo's forests are rich in biodiversity***

The number of tree species present in a forest indicates its level of biodiversity. Most of Kosovo's forest area is made up of mixed species stands: 21 percent consists of four to five different tree species.



A quantity of dead wood and few visible signs of human activity, may indicate limited human impact. In Kosovo however, almost 99 percent of the forests show traces of human activity, illustrating the wide usage by people.

Kosovo has two National Parks located in high elevation forested areas: Sharri in the south and Bjeshket e Nemuna in the west.



Kosovo's two national parks contain about 90 percent of the total growing stock of coniferous forest and mixed coniferous and broadleaved forest. Harvest restrictions will be imposed in zones within the parks. In the future, however, forest management for sustainable production of wood will also be possible in large parts of the national parks.



The forest's role in mitigating climate change is widely recognized. Half of a tree's woody biomass is carbon, and Kosovo's forest trees contain over 24 million tonnes of carbon, that is almost 90 million tonnes CO<sub>2</sub>. In 2008, the combined CO<sub>2</sub>-emissions from Kosovo A and B lignite-based electricity generation plants amounted to 6.2 million tonnes (Isufi 2010). The annual gross CO<sub>2</sub>-sequestration of woody biomass is estimated at about 3 million tonnes. However, most of the annual increment of woody biomass is removed through harvesting and decomposition, so there is practically no net accumulation of carbon dioxide in Kosovo's forests.

### ***Kosovo's forests are healthy***

In managed forest ecosystems, forest damage is often synonymous with economic loss. Forest damage can be caused by biotic agents such as insects, diseases, wildlife, and livestock grazing; and by abiotic agents such as wind, snow, fire, and landslides.

Over 780,000 m<sup>3</sup> (13 %) of conifers and 5,058,000 m<sup>3</sup> (15 %) of broadleaved trees, are classified with damages. In total, 15 percent of Kosovo's growing stock has been assessed as damaged.



Fire is the single most important stand-level disturbance, affecting over 12,000 ha, or 2.5 percent of Kosovo's total forest area. In addition to direct damage to growing stock, forest fires can also cause soil erosion and reduce water supply.

Except for the most severe stand-replacing disturbance, it is likely that most of the affected forest area and growing stock will regain its vitality and productivity in the short-to-medium term.

### ***Long-term wood production***

Forest management practices are carried out throughout the forest area, also in steep and remote terrain.



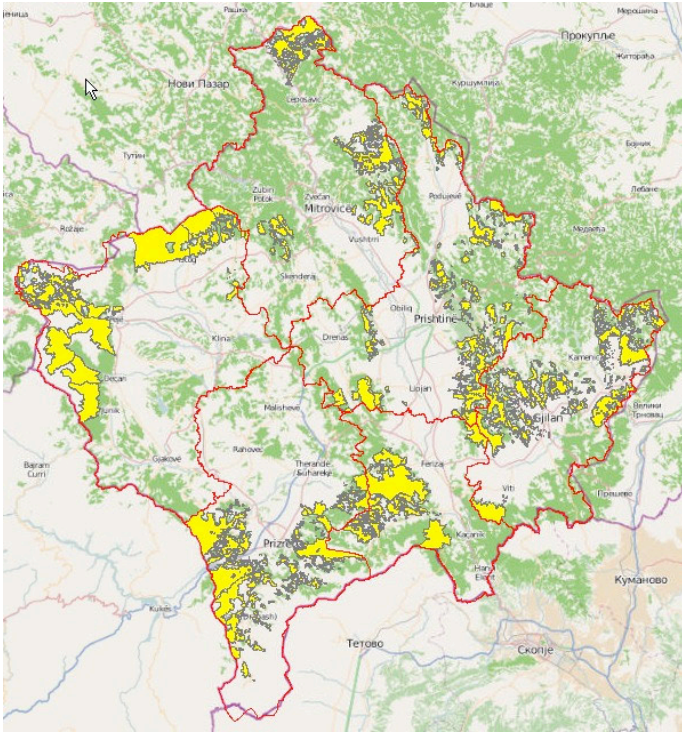
For broadleaves, the annual increment<sup>1</sup> is approximately 1.33 million m<sup>3</sup>, and for coniferous trees, 0.23 million m<sup>3</sup>. Gross annual sustainable harvest is estimated at 1.45 million m<sup>3</sup>, with approximately 630,000 m<sup>3</sup> in high forest and 815,000 m<sup>3</sup> in coppice forest. The recommended annual harvest for Kosovo is about 1.2 million m<sup>3</sup> over bark, substantially lower than the annual sustainable harvest. This is mainly due to inaccessibility, a likely increase in cost levels that will render more forest areas economically unavailable for wood supply, and the fact that some trees in every harvesting area, either for environmental or purely economic reasons, will be left standing. When taking into account national park's logging restrictions, the recommended annual cut should be reduced even more.

Current annual harvest is 1.6 million m<sup>3</sup>, almost 0.4 million m<sup>3</sup> above the recommended long-term harvest level. However, felling rates above 100 percent may be sustainable over a period of time, for example when responding to a high demand for timber, or when implemented under a highly controlled management regime (FOREST EUROPE 2011).

One important indicator of sustainable forest management is the proportion of forest area under valid management plans. Through cooperation with the Norwegian Forestry Group since 2005, forest management plans for a total of 27 management units in Kosovo have been prepared. Now, the Government of Kosovo funds the planning.

<sup>1</sup> Annual increment is measured, including bark, on trees with a diameter at breast height >= 7 cm





By end of 2013, over half of all management units will have new plans (see map), prepared using a cost-efficient methodology. New tools have been developed for updating the forest management plans according to the annual growth and activities, tools that will also prolong the life-span of the forest management plans.

On average, between 2003 and 2012, only 70,000 m<sup>3</sup> was harvested each year, according to Kosovo regulations. Non-regulated harvesting is most likely a combination of poverty-driven, small-scale wood extraction by rural people, and more organized commercial logging. Often, only the most valuable parts of the log are used, leaving a perfectly good part to waste. In addition, the remaining trees are often damaged, which is both inefficient and irresponsible, since it may contribute to proliferation and spread of forest pests and forest diseases.



**The way forward...**

The Kosovo National Forest Inventory provides crucial information for long-term strategic planning. For instance, knowing the availability of raw material is important for investors in sawmilling, for bioenergy entrepreneurs, and for producers of doors, windows and furniture.

Forest resource monitoring has received increased international attention. Inventory data are used to produce forest statistics both for the status and trends of European and global forests. As Kosovo becomes closer affiliated with European and global institutions, both cooperation and fulfillment of obligations will be of great importance, and it is necessary with a good system for a continuous national forest monitoring.

 A banner for the Kosovo National Forest Inventory 2012. The background is a lush green forest. On the left is the NFG logo (Norwegian Forestry Group). In the center, there is text in Albanian and English providing contact information for the Ministry of Agriculture, Forestry and Rural Development. On the right is the coat of arms of Kosovo.
 

**Kontakt i informacionit / Kontakt informacije!**

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