

ANALYSIS OF THE PROFITABILITY OF THE RESTITUTION OF FIRE-AFFECTED BEECH FORESTS IN SERBIA

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(Received 3rd Jul 2017; accepted 26th Oct 2017)

Abstract. The number of forest fires in Serbia caused by climate change has been continuously growing in recent decades, thus making the rehabilitation of the burned area increasingly important. In the period from 2003 to 2015, the total burned area (42.2%) was in beech forests. Cost-Benefit Analysis (the dynamic and the static approaches) was used as an approach to estimating the effects that restitution of beech forests can have on the environment, with the aim of finding the best solutions and making the best decisions about the desirability of the project. The dynamic approach (the analysis of tangible benefits and costs) led us to the conclusion that the investment in the restitution of beech forests destroyed by fires could be profitable only if it was based on wood production. Wood production may, depending on the site class, bear slightly higher interest rates (to better site classes) compared to previous estimates which ranged mainly around 3%. At lower discount rates (on poor quality sites), it takes more time to reach the break-even point, while the period of time needed to reach the break-even point shortens with higher discount rates. According to the static approach (the analysis of intangible benefits and costs) the benefits outweigh the costs, which makes the restitution of beech forests destroyed by fires acceptable.

Keywords: forest fire, beech forests, restitution, financial analysis, economic analysis

Introduction

Forests have always been considered as national treasures of a country. In addition to their ecological role in the preservation of important life cycles, they have other relevant economic and social (tourism, recreation, health) functions. Most of forest functions and their ecosystem services are not fully “captured” in commercial market (Costanza et al., 1997). This situation produces lack of valuation of ecosystem services which directly influence the sustainability of humans in the biosphere. There are many reasons for questioning sustainability but one of the most cited today can be found in processes of climate change. Forests are particularly vulnerable to climate change because they are not easily adapted to new environmental conditions.

The effects of modern civilization on climate change are becoming increasingly apparent. There has been an obvious trend of global temperature rise of 0.8°C since 1900 (Hansen et al., 2010). According to the European climate change scenario for 2100, the temperature is likely to rise by 2.8°C in Ireland and the UK, by 3.8°C in Central Europe and 4-5°C in Southern Europe (Christensen et al., 2007).

