



Non-market non-timber forest products in the Czech Republic—Their socio-economic effects and trends in forest land use



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ABSTRACT

Non-timber forest products (NTFP), mainly edible mushrooms, forest berries, and medicinal plants, are of socio-economic importance in the Czech Republic (CR). They can be picked freely by forest visitors for their own use, irrespective of forest ownership. There is a century long tradition of foraging for wild food in the Czech forests and this article presents an analysis of the trends in the apparent socio-economic importance of the collection and use of NTFP for the inhabitants in the CR over the last 20 years.

Data concerning the collection and use of NTFP in the CR have been systematically analysed every year since 1994 and, thus, a unique time series, even on the European level, has been obtained. The results of the analyses demonstrate that NTFP collection is an important activity for the inhabitants of the CR. Investigations based on questionnaire surveys in representative samples of CR citizens (quota selection) show that about 3/4 of the households report collecting NTFP. On average, 10.6 kg of principal NTFP (mushrooms and berries) were picked by every household annually in 1994–2013, which amounts to 39.1 mil kg (almost 4 kg/capita), and 3100 mil. Czech Crowns (CZK), in the total CR. This value corresponds to 1/6 of the timber harvest value in an average year. Nevertheless, (in recent years) the share is even higher, exceeding 20% of the timber harvest value. A comparatively small part of the population collect NTFP to save money and an even lower share sell NTFP. The data obtained in these studies aims to improve the quality of the state forestry policy focused on the optimum use of NTFP, to enhance the income from forests, to support NTFP commercial production and to raise the level of forest conservation.

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1. Introduction

Multifunctional forestry is a globally accepted way of forest land management. Nevertheless, regarding production, the attention is historically, prevalently focused, in many cases, on market timber production. Non-timber forest products (NTFP) were not treated as an important commodity in many countries and communities. The situation has been gradually changing which corresponds to the principles of multifunctional sustainable forest management (MSFM) with the aim to optimise the delivery of different products and services to the respective societies while keeping the sustainability of the forest ecosystems. The presented article corresponds to the above trends in using the forest products and services potential, including the commercialization of NTFP by MSFM principles. Such needs have been identified by the European Forest-Based Sec-

tor Technology Platform and discussed on the level of the European Union over the last several years (European Commission, 2013).

Attention to the importance of NTFP in many temperate zone countries is also addressed. Emery and O'Halek (2001) focus on the historical use of NTFP in the U.S. Pacific Northwest and the Upper Midwest, underlying the continuity in the harvest and use of NTFP in the United States from prehistory to modern times. In the CR and numerous European countries NTFP have also been collected from times immemorial. Alexander et al. (2002) published an economic and systemic view on the production significance of trees and mushrooms that grow in the forests of the Pacific Northwest. Through their description and analysis of the necessary definitions and assumptions to assess the value in the joint production of timber and wild mushrooms, they found that the values are sensitive to assumptions about the changes in forest management, yields for mushrooms and trees, and costs. Similar systemic contexts have been studied also in the CR in relation to the valuation of non-timber forest functions. Gram's (2001) study analyses the strengths and weaknesses of different methods for calculating the economic importance of forest

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products extracted by rural populations. The economic importance of NTFP harvested by the people in the CR is based on shadow market prices and amounts of the respective commodities collected.

Intensive research on NTFP was conducted in Western and Southern Europe to evaluate the potential of NTFP as another financial resource in forestry. In contrast to the results of a long-term survey in the whole of the CR, there were two detailed surveys carried out in six cities in Switzerland. Kilchling et al. (2009) showed a significant demand of NTFP from urban consumers, requiring structural and organisational innovations, marketing efforts and sales support including certification of the products' origin, environmental performance, and NTFP quality, which is still missing in the CR, and is a good example and challenge for further research. Pettenella et al. (2007) survey, describe and categorize NTFP as: mass-produced, specialised and complementary, pointing out that, especially, the second category can significantly support the profitability of small and medium-scale forest-based enterprises. This conclusion corresponds with the results of debates in the CR. Publications by Merlo and Croitoru (2005), and Croitoru (2007) provided comprehensive estimates of the economic benefits (income) from NTFP on a national and regional level in the Mediterranean region. The presented values are generally comparable with those ascertained by the respective research in the CR over a similar time period.

NTFP are important and have even greater potential future importance in many Central, Eastern and Northern European countries as published by Barszcz (2004) for Poland, Polevshchikova (2004) for North–West Russia, Saastamoinen et al. (2004) for Finland, Kovalčík (2014) for Slovakia, for example. The group of harvested NTFP in the above mentioned countries prevalently includes the same traditional forest products like those in the CR—mainly forest fruits, mushrooms, medicinal plants as well as decorative plants. The vast majority of these products are collected free of charge by forest visitors, not only in the CR but also in other Central, Eastern and Northern European countries.

The problem is that conventional official national inventories do not usually provide clear economic indicators of the importance of NTFP in many countries including the CR. The interests of policy makers in the development of rural areas, through the support of new economic activities including subsidies (Jarský and Pulkrab, 2013), should be extended to include the investigation of the socio-economic importance of NTFP. Already, Glück (2000) has highlighted that non-market forest goods and services are provided as positive externalities of the production of market goods; their sufficient provision also has to be ensured. Moreover, Jöbstl (2009) stressed the need to include NTFP into the accounts and economic statistics, which is also one of the NTFP long-term investigation purposes in the CR.

1.1. Forest lands and forestry in the Czech Republic

The CR, situated in Central Europe, occupies an area of 78,863 km² (7.886 mil ha) has 10.5 mil inhabitants, or 133 inhabitants per 1 km². Forest lands cover 2.662 mil ha, i.e., 33.8% of the total area of the CR. The area of the forests has been gradually increasing over a long period (from 2.191 mil ha in 1875–2.479 mil ha in 1950–2.662 mil ha in 2013). In 2012, forest stands covered 98.2% of the total forestland area, which demonstrates a relatively high percentage of forestland used for forest services including non-timber forest production (MZe, 2014). The annual timber harvest sold in the market has varied around 16.5 mil m³ over the last several years. This means a comparatively high intensity of timber production and harvest from the forestland area. Apart from this, the forests of the CR provide many other

non-market goods and services including NTFP for the society, not yet included into official statistics.

The importance of the collection and use of NTFP for the inhabitants of the CR has been systematically investigated in different research projects since 1994. So, in 2013 we celebrated 20 years of the systematic investigation of NTFP collection and use in the CR. Before these investigations started, there was no idea, about the amounts and socio-economic importance of non-market NTFP production and collection for the people in the CR. During the period 1994–2013, big political, socio-economic and ownership changes took place in the CR for forests and forestry. In 1990, almost no private forest owners and no municipal forest owners existed in the CR but by the end of 2013, there were about 135 thousand private forest owners in the CR with 23% of forestland and more than 5 thousand municipal forest owners with 17% of the forestland. State forest ownerships has decreased from almost 100% to 60% of the forestland, administered by several different state establishments (including two state forest enterprises and four national parks). Nevertheless, these ownership changes have not substantially influenced NTFP production and collection by forest visitors.

1.2. Theory-socio-economic essence and potential of NTFP collection in the CR

The citizens of the CR have collected and used NTFP, generally freely and free of charge, since medieval times. Access and entrance to forests in all kinds of ownership has been largely unrestricted, with only a few exceptions as to individual localities, forest owners, and time. According to Article 19 of the latest Forest Act No. 289 from 1995 (Czech, 1995), individuals are entitled to enter the forest at their own risk, and to collect for their own needs forest fruits and dry waste wood lying on the ground. While doing so, they shall be obliged not to damage the forest, not to interfere with the forest environment and to follow the instructions of the owner or tenant of the forest and their staff. This statement means that all forest stands are accessible to people, and people can pick non-wood forest products freely, and free of charge, almost irrespective to the kind of forest ownership. Unfortunately, the Forest Act does not mention mushrooms and medicinal plants explicitly, which can cause confusion and misunderstandings. However, these products are widely collected and treated in the same way as forest fruits. Another problem can result from the unclear statement, “for their own needs”, which could be interpreted as, “NTFP collected free of charge by forest visitors cannot be sold”. In practice, NTFP are sold without restriction (with the exception of compulsorily licensed sellers of mushrooms who are regulated for consumer safety reasons).

If picked freely and without charge by forest visitors, NTFP and their collection can be included in the set of externalities which impact on the Czech forests and forestry. The collection of NTFP, as a forest externality, has a double socio-economic meaning, market and non-market. On one hand, NTFP are part of the physical production (tangible goods), but on the other hand, they can be ranked among intangible outputs as a part of the recreational function of the forests (Gregory, 1972). Many NTFP collected by forest visitors are a substitute for similar agricultural products. However only a comparatively small part of the NTFP picked free of charge is marketed in the CR. The greater part is collected by forest visitors and consumed within their own households, which influences the market because NTFP are substituted in place of other similar products of an agricultural origin bought at market prices. The importance of NTFP collection as an externality should be expressed simultaneously both in the context of a non-market (recreational) forest service and in the context of a market or “shadow market” (production) forest service.

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