Cent. Eur. For. J. 67 (2021) 212–229 sciendo DOI: 10.2478/forj-2021-0013
CENTRAL EUROPEAN Forestry Journal
http://www.nlcsk.sk/fj/

REVIEW PAPER

Anchor of cultural forest services in the national forest policies of Central European countries

Miroslava Hochmalová*, Tereza Červená, Ratna Chrismiari Purwestri, Miroslav Hájek, Roman Sloup

Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, CZ – 165 00 Praha 6–Suchdol, Czech Republic

Abstract
Forests and human connection with nature have a major impact on human health. Through exercise and recreation in the forest, people receive many benefits from forest ecosystem services (FES) which have a positive impact on their physical and mental health. The paper tackles two main goals i) the first one is an overview of existing literature related to human health and well-being derived from forests in the countries of Central Europe published in the Scopus database. ii) The second goal was to create an overview of policy instruments related to forest cultural services (FCS) in the forest policy documents of selected Central European countries (CEC). A partial goal of the research is to identify gaps and to find a focus of future research in the field of human forest well-being and FES. The results showed that on the national level there is a lack of guidelines for culture services and their anchor in legislative documents. A challenge for the anchor of cultural services is to improve communication between different resort organizations and forest stakeholders. For future research is recommended to survey the forest impact on human health that would provide a base for creating a platform for policy tools related to FCS and help to set up recreation planning in European forests.

Key words: forest policy; forest recreation; forest ecosystem services; human health and well-being; cultural ecosystem services

Editor: Zuzana Sarvašová

1. Introduction

Forests, trees and green infrastructures provide to the society a plenty of forest ecosystem services (FES) that create healthy living environments for humans. Forest cover in Central Europe is around 32% (The World Bank Group, 2020). Therefore, forests are highly valued not only for the economic aspect but also for other benefits also known as FES which are essentials to human well-being (Millennium Ecosystem Assessment, 2005). Ferrell (1995) defined well-being as quality of life composed of four aspects: physical, mental, social and spiritual well-being. Synonymous is positive mental health (Ruggeri et al. 2020). The World Health Organization (World Health Organization, 2001) proclaimed that mental well-being is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. Although their existence is crucial for human populations and life, forest ecosystem services are currently under the pressure of climate change (European Commission, 2019).

The Millennium Ecosystem Assessment (Millennium Ecosystem Assessment, 2005) define the cultural ecosystem services in terms of the non-material benefits gain from the ecosystems. Through the experiences and senses in nature, people gain benefits in many ways from cultural ecosystem services. The knowledge of natural and cultural diversity, spiritual and religious values, intellectual development, educational values, inspiration, aesthetic enjoyment, social relations, sense of place, cultural heritage, recreation, and ecotourism.

The idea of cultural services relieves to define the cultural values and meaning that the forest provides to people. In addition, emphasize to society the significance and benefits of ecosystems and their physical and mental health and cultural identity (Fish et al. 2016). In the context of the forest, forest management based on cultural norms and values helps drives the forested landscape and

*Corresponding author. Miroslava Hochmalová, e-mail: sodkova@fld.czu.cz, phone: +420 604 349 293

the benefits such as diversity, identity, education, justice, and spirituality (Farber et al. 2002; Fisher et al. 2009).

One of the tools for satisfying human well-being through forest ecosystems are outdoor activities which positively affect human nutritional, physical and mental health. Unfortunately, due to continuously increasing urbanization, people are losing contact with nature (Agimass et al. 2019; Askerlund & Almers 2016; Hansen et al. 2017; Lee et al. 2017; Oh et al. 2020; Vasilis Margaras 2019). Moreover, the nowadays restriction of movement related to pandemic situation of COVID-19 disease is another stress factor that weakens human health. On the other hand, it emphasizes the crucial role of forests for the public and the forest capability to reduce the stress level (Brooks et al. 2020; Somma et al. 2020). If forest ecosystems continue to lose resilience and population urbanization continues to increase, it could directly impact human (Gaston 2010; Turner et al. 2004). Šodková (et al. 2020) found that a half of visitors to forests in the Czech Republic don't practice a sport in the forest. Results are similar in all European Union (EU) members, more than a half of EU population never exercise or play sports. The main barrier to go for a sport is the lack of time (European Commission, 2014). According to previous studies, it is proven that movement in nature and forest recreation have a positive effect on the physical condition of human body (Ernest Bielinis et al. 2019a; Robinson & Breed 2020; Song et al. 2013, 2016; White et al. 2019; Yau & Loke 2020) in addition, it has a very positive effect on the human mental health. Forests and their effect on the mental state of humans were subject of many studies, especially in Japan which is also a cradle of forest therapy methods or Shinrin-yoku (Hansen et al. 2017; Lee et al. 2017; Oh et al. 2020; Yi et al. 2019). Forest therapy is a collection of activities performed directly in the forest that work with various natural elements, such as aromatherapy, physiotherapy, meditation, phytotherapy, etc. (Hansen et al. 2017). It is more than visible that the forest environment has a direct positive effect on human health but tools for the implementations of cultural services in forest management are lacking (Dodev et al. 2020).

Ownership, structural and socio-demographic characteristics of Central European forests are diverse. In some Central European countries (CEC), half of the forest belongs to private owners (Austria, Slovenia, Slovakia) whereas the predominant forest owner in some countries is the state (Czech Republic, Poland). In Germany and Hungary, forest ownership is equally balanced. As all the EU countries, should be involved in the effort to ensure multifunctionality of the forest complex landscape policies and their tools need to be designed with care. The term multi-functionality refers to the capacity of landscape or ecosystems to provide multiple material and non-material goods to satisfy social demands and thus to provide to the society a set of environmental, social and economic benefits (Benz et al. 2020; Hölting et al. 2019, 2020). Consequently, the priority of EU forest policy is to ensure forest multi-functionality and hence forest ecosystem services. Nevertheless, there is still a gap between the theory and real steps in the specific instruments supporting FES including forest cultural services (FCS) (Langemeyer et al. 2016; Saarikoski et al. 2018; Saidi & Spray 2018; Sitas et al. 2014). According to Torralba et al. (2020), FCS are still neglected among other FES in EU forest related policies. Unlike other FES, FCS are not integrated into the EU forest strategy, EU Biodiversity Strategy and the Green infrastructure Strategy. FCS are displayed only in the connection with tourism and recreation in the Rural Development Regulation and in the EU Forest Action Plan.

One of the problems may be that competences for setting objectives and tools of forest management are in responsibilities of Member States that do not emphasize FCS (Bouwma et al. 2018). The European Union provides a framework in the form of a forestry strategy that, as mentioned above, does not deal with FCS to in-depth extent. Thus, it does not create incentives for Member States to take the initiative themselves.

While public health is not directly linked to environmental or forestry policy, it is difficult to design tools to support and determine the control of the fulfillment of objectives. Another problem is the insufficient funding of FCS support where in some cases other FES are preferred, which bring economic benefits (Baveye et al. 2013; Hernández-Morcillo et al. 2017). Funding in the form of FCS payments in the CEC is not yet common, but many studies have been published on this topic. The crucial issue is that FCS are inherently difficult to grasp and quantify, unlike other FES. Due to their intangible character such as the aesthetic, spiritual and cultural heritage or the effect on human health, they are often not measurable (Dickinson & Hobbs, 2017; Willcock et al. 2017). In addition, their perception and thus value change over time according to development of society (Gould et al. 2018).

In Central Europe, FCS generally cover recreation, and hunting the trend of FCS and activities related to human health and spirituality as forest therapy is not supported and realized to a greater extent.

In recent years, efforts emerged to develop a forest and health framework (Forest Europe, 2019; Rametsteiner & Mayer 2004). Unfortunately, there is a huge amount of studies about health benefits derived from forest but real policies do not exist, which would be focused on the forest and public health promotion. The aim of this paper is to provide an overview of literature available in the SCOPUS database and systematic investigation of CEC forest policy documents related to the forest, FCS and human health. The paper tries to find out how the issues of forest recreation, tourism and human health related to forests are currently anchored in the national forest policies of CEC. In addition, the paper aims to open a discussion between policymakers and academics about the formulation of policy instruments and to set up a new

policy framework to support activities in the forest practice related to human health and their implementation into the forest management. In the 21st century, when a great emphasis is placed on the sustainability of forests and human health, forest managers and planners should use a full potential of the forest ecosystem services that forests provide beside timber production.

2. Material and methods

The countries in Central Europe, namely Germany, Poland, Czech Republic, Hungary, Slovenia, Slovakia and Austria, were included in the review paper. The selection was made from a total of 15 countries that the Food and Agriculture Organisation (FAO) considers to be CEC (Food and Agcriculture Organization, 2001). The review study comprised two sections. The first part was a literature review using the Scopus database, while the second part was a document analysis on national forest strategies in the studied countries.

2.1. Scopus Publications

The literature review was used to investigate current research on association between FES and human health in the studied countries. A review of the literature was carried out using the Scopus database. Papers and conference proceedings that were accessible, as well as non-published reports, and written in English were included in the study. The Scopus literature search was conducted in September–October 2020 using the following keywords: *forest* ('forest' OR 'forest-based' OR 'forestry) AND 'ecosystem services' OR 'recreation' OR 'therapy' OR 'education' OR 'health' OR nutrition* OR well-being* OR welfare*. The studied countries were included as filtered criteria for the literature search.

After obtaining the list of titles from the search engine according to the given keywords and countries, each paper was checked based on accessibility and availability, correctness between the keywords and content, and conformity on study site. An overview of countries of study locations, objectives, methods and indicators, as well as outcomes of the collected papers, was developed to better understand how the studied countries utilize their FES in improving the health, nutrition and well-being of various target populations, such as children, elderly, healthy or sick people, etc.

2.2. Policy documents analysis

The second stage of the review study aimed at investigating the core forest strategy documents. For the purpose of the review, National Forest Programs or Forest strategies were analysed. The current strategic forest policy documents selected for the assessment were those that were published most recently on official websites of the countries state authorities. The non-English and non-Czech/Slovakian documents were translated prior to the document review analysis.

National programs were preferred but in case of Austria and Germany the newest version of forest strategic documents in form of Forest strategy were selected, while the State forest policy of the Czech Republic was chosen for the review analysis.

Table 1. The list of reviewed policy documents.

Document	Scope
Slovenia Resolution on National Forest Program (adopted 2007)	A fundamental strategic document aimed at determining the national policy of sustainable development of forest management drafted under The Ministry of Agriculture, Forestry and Food. The goals are tackling three aspects (Environmental, Economic and Social) and 9 other fields (Public forestry service, supervision in forestry, education of forestry personnel, education and training of forest owners, public awareness, research, funding, tax policy, international participation, wildlife)
Austrian Forest Strategy 2020+	The document was developed under Federal Ministry for Sustainability and Tourism in cooperation with 85 organizations (Austrian Forest Dialogue) in the forest policy sector. It sets out concrete goals in 7 action fields (climate protection, forest health and vitality, productivity and economic aspect, biodiversity, protective functions, social and economic aspects, international responsibility)
National Forest Program of the Slovak Republic (adopted 2007)	A fundamental policy document that defines the most important forest policy strategic goals in 5 strategic fields (ecological management, forest protection, quality of life, competitiveness, communication).
German Forest Strategy 2020 (adopted 2011)	Published by the Federal Ministry of Food. Federal Government adopted the Forest Strategy 2020 for Forests as a Natural and Economic Resource. The main purpose is to ensure the sustainable forest. There are 9 action fields (Climate protection and adaptation; Property, work and income and; Raw materials use and efficiency; biodiversity and forest conservation, Silviculture, hunting; Recreation, health and tourism; Research, education, awareness-raising).
Poland National Forest Policy (adopted 1997)	A main strategic document is the "National Forest Policy" (PLP), adopted by the Council of Ministers in 1997. It sets the directions of Poland's forestry development, defines forest policy objectives and priorities. It also outlines organizational national, economic and legal conditions for its implementation, describes the schedule of tasks and schedule of the expected fulfillment of their effects. In total, it consists of 15 goals related to 3 aspects (economic, environmental and social).
Czech Republic State Forest Policy 2035	The concept of the State Forest Policy, created on request of the Ministry of Agriculture, is a basic strategic document that responds to the current state and situation in forests. The aim of this strategic document was to set priorities of forest management so that Czech forests could fulfill all their functions through four objectives on a long-term basis. (Fulfill forest functions for the future generations; Biodiversity and ecological stability; Ensure the competitive ability of forestry development; Develop consultancy and education, Research and innovations).
Hungary National Forest program (adopted 2016)	The document was developed under the Ministry of Agriculture."National Forest Strategy 2016-2030". It corresponds with the main objectives of the EU Forest Strategy 2013 and enables the maintenance of multiple functions of Hungarian forests through their balanced impact on the environment, society and economy.

The objective of the review was to map the anchoring of FCS and human health and well-being related to the forest in the strategic documents. The document analysis were conducted according keyword research. Based on the keywords, the anchoring of CES was identified in the documents. The following keywords were used for the analysis: Keywords were a tool to identify them: *forest* ('forest' OR 'forest-based' OR 'forestry) and 'health' OR 'well-being' OR 'cultural ecosystem services' OR 'education' (Table 1).

3. Results and discussion

3.1. Scopus Publications

The search using the keyword: 'forest' AND 'ecosystem services' filtered by the studied CEC produced the highest amount of 1,405 articles published from 1992 to 2020; it was followed by the keywords: 'forest' AND 'health' (569 articles), and 'forest' AND 'nutrition' (569 articles). 'Forest' AND 'recreation', 'forest' AND 'education', as well as 'forest' AND 'therapy', 'forest' AND 'well-being', the search of which resulted in 472, 411, 246, and 47 articles, respectively. After examining the relevanceof the paper contents and accessibility of the articles via the University library, seven original research papers from the selected CEC were chosen, which are presented in Table 2. Five articles were from Poland, which tackled the topic of forest recreation and forest therapy. Two articles were contributed from the research in Germany and Austria.

The relationship between forests and human health and well-being is mediated by the forest FES in cultural functions(Millennium Ecosystem Assessment, 2005). Table 2 depicts the summary findings on the positive effect of forest recreation and education on human health and psychological status. The studies were carried out in CEC, mostly in Poland. Besides Poland, the rehabilitation system for physical and mental health has been successfully implemented also in the other studied countries (Gerdes et al. 2006; Eldar et al. 2008; Maehr et al. 2016). Forest regions were often used as locations for clinics, e.g. in Germany and Austria; however, there are only few publications dealing with the type of activities based on the clinic location and outcomes of the therapy. More recently, different forest recreation packages, e.g. managed forest, forest bathing, forest walking, etc., have been implemented in some of the studied countries, and positively affected the psychological and physiological status of participants and visitors (Bielinis et al. 2018; Bielinis et al. 2019a, 2020; Hussain et al. 2019; Janeczko et al. 2020; Rathmann et al. 2020). The positive effect of spending leisure time in the forest and by outdoor activities was observed in different age groups, from young age (Kimic & Kundziewicz 2020) and young adults (Bielinis et al. 2018; Bielinis et al. 2019a; Hussain et al. 2019; Janeczko et al. 2020An overview of the findings shows the contribution of the forests to the human physical and mental health. Development of infrastructures and policy harmonization that enable the forests to perform their services optimally are encouraged in countries where such forest recreation and education still do not exist.

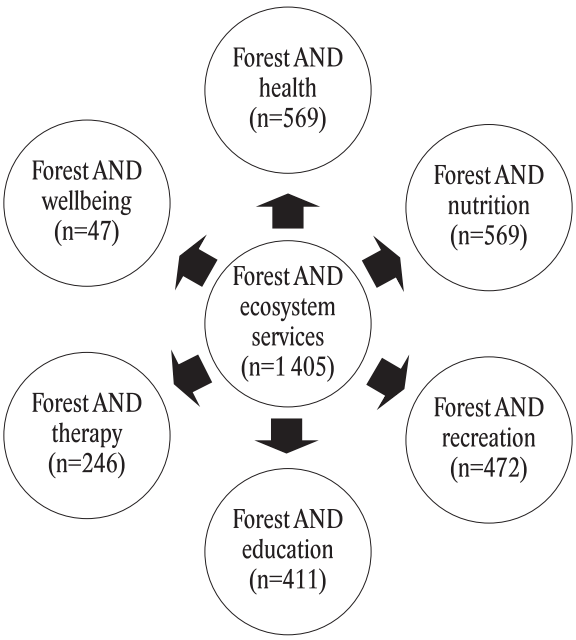


Fig. 1. Literature search process.

3.2. Policy documents analysis

Slovenia

The Resolution on National Forest Program issued in 2008 was investigated. The beauty of nature is the main reason to visit Slovenia that reported nearly 60% of visitors. Slovenia has a significant share of forests in the total area of the country (60%) and is also the third country with the largest afforestation in the European Union. Forest owners have to allow free access to their forests as well as recreational activities and gathering of non-wood forest products (NWFPs) regarding to decree on the protection of wild fungi and forest protection regulations. In some part of Slovenian forests are "peaceful zones" which ensure favorable living conditions for wild animals. Entry to those areas are restricted (Forest act, 1993). The largest representation of owners includes natural persons (71%). Despite the fact that forests are in private ownership, ensuring a wide spectrum of FES to the general public, forest management costs are partly funded by the state. However, Slovenia aims to increase the share of state forests, especially in forests close to tourist attractions or nearby cities to better coordinate social functions. The Forest National Program mentions that Slovenian forests offer unexploited possibilities of forest social functions. One of the aspects concerning recreation in the forest is to regulate visits to the forest and to set up areas according to the intensity of recreational and

Table 2. Summary findings of the effect of forest recreation and education on human health and psychological status carried out in central European countries, based on the Scopus database literature search.

No	Location	Main objectives and methods	Primary findings
		Forest recreation	
1.	An old nature conservation area, mainly also as a drinking water protection area, in Augsburg, Bavaria, Germany (Rathmann et al. 2020)	Data of human physiology indicators and subjective well-being were collected from eleven male and ten female students. Climatic conditions were also recorded.	reduction of heart rate was prevalent in densely forested sites than in areas of open mid-rise and scattered trees.
2.	Extensively managed and abandoned semi-dry meadows located in the Austrian and Swiss Alps (Hussain et al. 2019)	Short-term psychological and physiological health of ten males and twelve females (mean age 27 years) was associated with biodiversity attributes (e.g. richness and abundance of plants, insects, and landscape characteristics surrounding the meadows).	No effect on the participants´ pulse rate, systolic and diastolic blood pressure. Perceived health benefits (e.g. stress reduction, attention restoration) were better in the managed than that in abandoned meadows. Managed meadows were rated higher in terms of the attractiveness of the surrounding landscape and recreation suitability.
3.	Two urban environments (apartment and green suburbs) were used, as well as two forests (coniferous and deciduous) in Warsaw, Poland (Janeczko et al. 2020)	Four psychological questionnaires (Profile of Mood States/POMS; Positive and Negative Effect Schedule/PANAS; Restorative Outcome Scale/ROS; Subjective Vitality Scale/SVS) and physiological state, heart rate, blood pressure before and after a short walking program of 75 Polish students aged 19–24 y were collected to investigate the impact of the studied environment on human psychology and physiology.	Staying in an urban area with greenery and in a forest, the environment positively affected the physiological state and psychological relaxation. A short walk in the suburbs was as attractive as a walk in the forest (forest bathing) in autumn.
4.	City forest or urban (control), Poland (E. Bielinis et al. 2018)	Four psychological questionnaires (POMS, PANAS, ROS, and SVS) before and after 15 minutes of exposure to the city forest vs. urban (control) were administered to 31 participants per group to investigate the effect of winter forest bathing on human psychological states.	A short interaction with the forest during winter in Central Europe could lead to a substantial emotional, stimulating, and vitalizing effect on the surveyed participants.
5.	Recreational program in the nature reserve Redykajny, near the suburban forest of the city of Olsztyn, Poland (Ernest Bielinis et al. 2019b)	Four psychological questionnaires (POMS, PANAS, ROS, and SVS) and physiological state employing pulse rate, blood pressure 21 Polish students were assessed before and after the recreational program.	Decreased the negative mood indicators and increased the positive markers (including restoration and vitality) after the recreation program. Significantly lower pulse rates, systolic blood pressures, and mean arterial pressures were reported after the program.
6.	Forest bathing therapy intervention, in a psychiatric hospital, Olsztyn (north Poland), Poland (Ernest Bielinis et al. 2020)	Patients with affective and psychotic disorders (suffering from post-traumatic stress disorder or experiencing stress) participated in one hour and forty-five minutes walk in the forest under supervision of a therapist in summer and autumn 2018. POMS and the State-Trait Anxiety Inventory (STAI-S) was self-administered before and after the study.	For patients with affective disorders, forest bathing positively affected nearly all POMS scale sub-scales, except the 'anger–hostility' sub-scale. Also, a significant decrease in the level of anxiety measured with the STAI-S scale was reported. For patients with psychotic disorders, the values of 'confusion' and 'vigor' sub-scales and the STAI-S scale were positive for the health of patients, and change in the 'fatigue' sub-scale.
		Forest education	
7.	Forest Kindergartens in Warsaw and suburban municipalities – Granica, Mariew, and Kąty, Poland (Kimic & Kundziewicz 2020)	Data on detailed information of kindergartens and outdoor activities, including teaching subjects in the forest were collected from 171 children aged 3–6 years from nine kindergartens.	Average time spent on outdoor activities: 5–6.5 hours per day. The main activities of the children were carried out outdoors, which improved their physical health.

tourism activities. Porter (1995) stated that similarly to other industries the regulation of tourism should be based on shared responsibilities of government, forest owners, and other stakeholders, and on a legal framework which would allow developing the responsibility of forest owners and stakeholders to environmental problems without losing competitiveness. To increase the quality of life in rural areas, guidelines should be set up for improving the quality of life supporting development of new job opportunities related to supplementary activities in forests such as tourism. Furthermore, the guidelines should aim to equip the forest for tourists and recreational purposes.

An important point tackling the field of social functions is education where one of its goals is to strive to enhance forest owners knowledge about the marketing of forest services. Pettenella (2007) mentioned that nature tourism and recreation services can enhance profitability of the forest-based businesses and moreover nourish the competitiveness of forest products in the consumer chain. In line with new trends, the demand for environment friendly products has been increasing recently (Ernst & Young 2007; Purwestri et al. 2020; Vacík et al. 2020). This step partly contributes to good public relations and helps fulfill the goal of raising awareness about the importance of forests. Besides the forest owners, the education focuses also the forestry personnel and their comprehensive training including communication, psychological and social competencies. This can lead to the establishment of new job opportunities related to FCS such as the trail instructors, healing therapy or sport activity specialist (Dodev et al. 2020). In the reviewed document, direct actions referring to forest therapy, forest culture, or forest sports activities were not found.

Table 3. Anchor of forest cultural services in the Slovenia Resolution on National Forest Program.

Grouping themes of strategic measures	Resolution on National Forest Program
Legislative instruments and rules	*7 Economic aspect of Slovenian forests* *Management of state forest* Goal 1: Increase the share of state forest primarily the forests with added value in ecological and social functions Goal 6: Incentives for forests in which ecological or social functions determine the manner of management. Guideline: Evaluate ecological and social benefits of forests for the entire society *8 Social aspect of forests* Goal 1 – Significantly contribute to the quality of life, in particular to health of all citizens Guideline: Maintain and regulate free access to the forest and prevent its misuse Increase the share of state forest and municipal forests in the proximity of larger cities for better coordination of using forests in the conditions of emphasized social functions Constantly monitor the emphasis on individual social functions of forests, identify the areas of conflict use of forests and methodically decrease the level of conflict by directing the use of forests Define optimal conditions of forests for successful implementation of protective function in most frequent circumstances when its emphasis is necessary, and even the smallest areas of forest for the successful implementation of hygienic and health functions
Innovation and increase of employment	*8 Social aspect of forests* Goal 2: Provide employment and profit to people living in rural areas through work in forests and activities related to wood and forests, and contribute to the quality of life in rural areas. Guideline: Create opportunities for additional jobs and profit in farm holdings with the development of supplementary activities based on wood and other forest goods, and activities related to forests (beekeeping, tourism).
Public relation	*7 Economic aspect of Slovenian forests* Goal 8: Improve marketing of FWP, FNWPs and functions of the forests. Guideline: Provide education and marketing advice to forest owners *8 Social aspect of forests* Goal 5: Raise awareness about the importance of forests and their functions, forestry, hunting, wood and other forest goods Guideline: Popularize the importance of forests, forestry, hunting, wood and other forest goods. Accessibility of forests to the public should be presented as a value.
Education	*7 Economic aspect of Slovenian forests* *Management of private forest* Goal 1: Intensify education of forest owners and counseling, development of methods of public participation in forest planning Goal 10: Use of the forest for tourism adjusted to forest functions Guideline: Train personnel to organize tourism and recreation in forest areas, primarily forest owners *8 Social aspect of forests* Goal 1 – Guideline: Expand the educational function of the forests from forest educational paths to forests in the proximity of schools, and establish more interdisciplinary educational paths in the forest environment *11 Education of forestry personnel* Goal: Forestry education programs should include more content from the area of general knowledge, legislation, related professions, environment, communication, information and communication technology, psychological and social competences. *12 Education and training of forest owners* Goal: Forest owners aware of the importance of forests and their functions and trained for work in forests, who want to actively participate in the area of planning the forest development
Recreation	*7 Economic aspect of Slovenian forests* Goal 10: Use of the forest for tourism adjusted to functions of forests Guideline: Define the forest area in terms of adequacy for different forms of tourism and recreation and different intensities related to both activities Adequately equip forests for tourism and recreation *8 Social aspect of forests* Goal 1 – Significantly contribute to the quality of life, in particular to health of all citizens Guideline: Define the forest area in terms of adequacy for different forms and intensity of tourism and recreation activities and provide supervision over the implementation of recreation activity In the areas frequently visited by people, adjust the time of forest operations and harmonize it with the rhythm of visits and strengthen the aesthetic function of forests. Goal 3: Create arranged environment to cultural heritage sites, for the sake of heritage and as a contribution to the development of tourism. Guideline: Plan and implement works in the areas of cultural heritage sites and their areas of influence in forests aesthetically and adapted to the protection arrangement and adjust the time of works to the rhythm of visits.
Human health	*8 Social aspect of forests* Goal 1: Significantly contribute to the quality of life, in particular to the health of all citizens.

Slovakia

The initial reviewed document was the National Forest Programme of the Slovakia Republic issued in 2007. According to the Slovakia Forest Act, the forest is accessible for recreational use. Everyone has the right to access forest land in the case of non-profit use of the forest. Exceptions are possible, especially in military areas and in the case of further protection of public interests (Zákon o lesoch, 2005). The forest cover amounts to 41.2% of country's area and the state owns 39.5% of total forest area (Ministerstvo pôdohospodárstva a rozvoja vidieka Slovenskej republiky, 2017). Cultural and societal services are paramount especially in the protective and special-purpose forests (27.92%); multi-functional management methods are used in the commercial forest (72.1%). Slovakia strives to improve life quality in rural and mountain areas by diversification of economic activities related to societal services where the focus areas tackling cultural services are tourism, pedagogy, tourist guide, and hunting. The document highlights the potential of forests in the field of tourism and provision of services related to social functions of the forest. Though, all new opportunities in tourism should be developed so that the surrounding nature suffers no damage (Korňan 2020). However, National Forestry Programme of the Slovakia Republic mentiones, that the main obstacles to their implementation are weak infrastructure, lack of accommodation, and a low level of customer services. Tourism could develop only with the well-developed infrastructure. A well-accessible place increases the attractiveness and visibility of the place (Feng 2010; Page 2005). In addition, there is a lack of information about the various variants of these services which the forest management could provide to the public. There is a need to create a basis comprehensive concept for tourism development. Within the valuation priority, there is a problem of the non-placement of cultural services in the market, which are thus not reflected in the price of wood and NWFPs. This is why the measures want to implement the methods of their identification, quantification and assessment.

Austria

Austrian Forest Strategy issued 2018 was investigated since it is the latest policy forest document in Austria building on the first Forest Program issued 2007. In Austria, the forest covers 47.6% of total country area. Austrian Federal Forests and other publicly owned forests are 15% of the national forest area. Privately owned are 82% of Austrian forest. Forests represent important cultural identity for the society in Austria (Bundesministerium für Nachhaltigkeit und Tourismus, 2018). Everybody has a free access to the forest for recreation excluding horse riding and camping for which a permission from the forest owner is needed (Quadt et al. 2013). According to a national survey, 70% of respondents are proud of the Austrian forest and 40% of them assert to visit the forest for recreation at least once per week (Federal Ministry for Agriculture, Forestry Environment and Water Management, 2017). One priority of social and economic aspects is to develop rural areas by extension of various products and services and establishment of new kind of undertaking. The link between the NWFP and services in the specific area may apply territorial marketing to develop the rural areas where complementary products and services create a complex portfolio (Parvex 2011; Pettenella et al. 2007; Vidale et al. 2010). As to the FSC use development, an important point is the promotion of social acceptance of using forests for commercial purposes on the basis of multi-functional management. A powerfully built base in terms of cultural services is in the public relations section. Several objectives mention the need to strengthen communication with the public about

Table 4. Anchor of forest cultural services tin the National Forest Programme of the Slovakia Republic.

Grouping themes of strategic measures	National Forestry Program of Slovakia
Legislative instruments and rules	Priority 6: To develop socio-economic monitoring Priority 10: Improving economic, legislative, institutional and information instruments to strengthen research and faster transfer of results into practice Priority 16: Optimize the public demand and forest owners needs.
Innovation and increase of employment	3 Strategic goal life quality improvement Priority 8: – Establishment of new small-scale businesses based on social functions. Priority 11: – Development of methods for identification, quantification and assessment of non-wood forest products and forest ecosystem services. Priority 9: Support multi-functional use of forest by optimizing the planning, decision making and innovative process
Public relation	3 Strategic goal life quality improvement – Achieving the public acceptance of forest ecosystem services as forest management externalities Priority 18: Achieve positive attitude of the public to forestry
Education	Priority 13: Building and applying the advisory service system for forest owners Set up the comprehensive system of lifetime education to build a knowledge-based society Create a public relation forest organization

forest functions and the balance of demands on the forest. Rametsteiner and Kraxner (2003) investigated that the general public is concerned about forest health and threatened biodiversity. Strategic Objective 7 explicitly emphasizes the relevance of forests for national culture and effects of forests on human health. A key challenge is to overcome the conflict of pure economic use and potential and a variety of other socio-economic and FCS. One of priorities in education is to expand new professions and training opportunities in forestry as well as to set up cooperation with the Federal Ministry of Education, Science and Research. A significance point link to recreational use is to develop recreational facilities and evaluation of recreational opportunities for the public. Besides the recreation, there is a strategic goal of conservation of cultural forest habitats specific for traditional forest management and thus to preserve the tradition of forestry in the national culture.

Germany

One-third of Germany is covered with forests. The forested landscape in Germany is 11,419 ha; all of them are multi-purpose forests or have more than one function. For instance, forest with the production function and recreation, or biodiversity and recreation, etc. (Federal Ministry of Food and Agriculture, 2017). In relation to the total population, one ha of German forests falls to about 7,000 inhabitants (Eurostat, 2020; Purwestri et al. 2020). The German forest-based sector is also recognized with the sustainable forestry implementation with the highest net annual increment among European countries in the forests and other wooded land for wood supply by about

Table 5. Anchor of forest cultural services in the Austrian Forest Strategy.

Grouping themes of strategic measures	Austrian Forest Strategy
Compensation of social services	*Field of action 5: protective functions of Austria 's forests* Strategic goal 4: Creation of framework conditions for the sustainable protection of the sufficient quality and quantity of forest water resources Strategic priorities Promotion of compensation for protective and welfare services in case of management obstacles
Innovation and increase of employment	*Field of action 6: social and economic aspects of Austrian forests* Strategic goal 2: Extension of the product range to increase the regional value added of the forest and wood sector and strengthen the rural area Key strategic challenges: Creation of new fields of business Strategic goal 3: Further development of the forest and wood sector through innovation and reinforcement of research
Public relations	*Field of action 3: productivity and economic aspects of Austrian forests* Strategic goal 1: Promotion of social acceptance for commercial use of Austrian forests on the basis of multi-functional and sustainable management principles *Field of action 6: social and economic aspects of Austrian forests* Strategic goal 1: Targeted information and active communication about forest functions and the diverse forest and wood industry services *Field of action 6: social and economic aspects of Austrian forests* Strategic goal 6: Promotion of the balance of diverse interests and demands on the forest Strategic priorities Consistent continuation of discussions regarding the balance of diverse interests and demands on the forest Participatory development of control and regulation concepts for amateur athletes and people seeking recreation *Strategic goal 7: Building awareness of the significance of forests for national culture and their health effects* Key strategic challenges Cooperation with institutions and companies that offer services Improvement of the social understanding of the historical cultural value of forests, but also the countless cultural assets associated with forest ownership Building bridges across conflicts between the purely economic use of the forest and the potential and diversity of other socio-economic and forest cultural services for society
Education	*Field of action 6: social and economic aspects of Austrian forests* Strategic goal 4: Safeguarding and further development of broadly based science and practice-oriented educational opportunities for the areas of forest and timber through qualified educational institutions Strategic priorities Development of new professions and training options Strategic goal 5: Establishment of minimum forest curricula throughout all training and further training Strategic priorities Increased cooperation with the Federal Ministry of Education, Science and Research
Recreation	*Field of action 6: social and economic aspects of Austrian forests* Strategic goal 6: Promotion of the balance of diverse interests and demands on the forest Strategic priorities Evaluations of all offers for people seeking recreation in the forest and support options for recreational amenities / control measures
Human health	*Field of action 6: social and economic aspects of Austrian forests* Strategic goal 7: Building awareness of the significance of forests for national culture and their health effects Key challenges: Recognition of the health benefit of time spent in the forest in health policies or health care and the strategic application of implementation measures
Cultural services	*Field of action 3: productivity and economic aspects of Austrian forests* Strategic goal 4: Conservation or development of ecologically and cultural-historically relevant forest habitats characterized by specific traditional forms of management Key strategic challenges: Establishment and strengthening of forest cultural services and potential of Austrian forestry

119 million m^3 (Eurostat, 2019). Almost half (48%) of the German forests are private forests (with a half of them covering less than 20 hectares), followed by the federal-state (Länder) (29%), communally owned (19%), and a small proportion (4%) is owned by the Federal government (Federal Ministry of Food and Agriculture, 2014). The ownership structure directs the forest management in Germany towards liberation that is limited by responsibilities and forest laws.

The German forests contributed essentially in supporting the country's bio-economy strategy (Federal Ministry of Food and Agriculture, 2014). The role was initiated from the sustainable wood forest production (Glück 1987; Schmithüsen 2013), nowadays research and innovation in forest bio-economy also involve the promotion of various FES and its impact on rural development in the country (Federal Minister of Food and Agriculture, 2014; Giurca & Späth 2017; BIOPRO, 2018; European Commission, 2020).

At least once a year, 66.67% of the German general population went to forests (Federal Ministry of Food, Agriculture and Consumer Protection, 2011). The forest has an important role for German culture, often occurring in myths, legends, stories and songs (Federal Ministry of Food, Agriculture and Consumer protection, 2011).

Access to forests for recreational purposes at anytime and anywhere is a public right in Germany, as regulated by the first paragraph of Article 14 of Federal Forest Act (Bundeswaldgesetz). However, the free access also required a commitment to act responsibly towards the forest owner, nature and other forest visitors. Entering forests for commercial purposes should be based on the consent of forest owners. The second paragraph of Article 14 further explained about details on German forest accessibility under the federal-states' decision, e.g. for some essential reasons the federal-state government can restrict the public access to forests (Federal Ministry of Food and Agriculture, 2017; Federal Ministry of Food and Agriculture, 2014; Federal Ministry of Justice and Consumer Protection, n.d.).

Forest Strategy 2020; Sustainable Forest Management – An Opportunity and a Challenge for Society, is the main forest strategy document in the country, published by the Federal Ministry of Food, Agriculture and Consumer Protection (Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz) in 2011. The German forest strategy envisages German forests in the following vision: "Sustainable management preserves and develops site-specific, robust forests with mainly indigenous species of trees that are able to adapt to climate change. The forests provide the necessary raw

Table 6. Anchor of forest cultural services in the German Forest Strategy 2020.

Grouping themes of strategic measures	The German Forest Strategy
Recreation	*Area of action 8: Recreation, health and tourism, p. 29–30* *Future Challenge* In general mentioned the recreational "hotspots" where high numbers of visitor can lead to excessive burden on the ecosystem and damage of nature. *Possible solutions* – The tried-and-tested instrument of visitor flow management in highly frequented and ecologically sensitive areas – nature-compatible recreation within the framework of the right of free access continues to have priority over specific recreation concepts (forest rallies, fitness trails etc.) – individual and non-profit recreation activities are to remain free of charge – The federal government and Länder are to elaborate recommendations for the nature-compatible leisure use of forests together with the representatives of forest owners, forestry, local authorities and the associations concerned – New tourism, environmental education and leisure schemes are to be supported in consultation with forest owners – Raise awareness among forest visitors about nature sustainable forestry. Opportunity for stakeholder cooperation.
Hunting	*Area of action 6: Hunting, p. 24–25* – Hunting issues solved out in an ongoing discussion process in which all the stakeholders are involved. Together with the forest owners, farmers, hunters, sport, leisure and environmental associations, concrete measures and model projects should be developed for conflict minimization at a regional level and, on this basis, a model elaborated for hunting in forests.
Legislative instruments and rules	*Area of action 4: Biodiversity and forest conservation, p. 18–21* *Future challenge* Nature provides mankind with a number of good services that constitute the foundations of human well-being. Assessment of forest ecosystem services have to be integrated into the decision-making processes. *Possible solutions* – The evaluative approaches in the TEEB study should be carried over to the ecosystem services of indigenous forests and biodiversity and their value should be quantified. Obtained values should be incorporated into decision-making processes.
Education and public relation	*Area of action 9: Education, public relations and research p. 30–32* *Future challenge* The importance of the sustainable use of forests as well as the social and economic importance of forests and forestry must be highlighted more from the angle of jobs, value added, nature conservation and climate protection *Possible solutions* – Put greater importance to forest-related education development to stop alienation of people from forest – Forest-related education work from the education in sustainable development concept is to be supported and promoted in cooperation with all kinds of forest owners – Greater importance to forest monitoring – The education and further training of private small forest owners – Trained workers in economics, technology and basics of natural sciences Train the methods and instruments taking into account, the sustainable management and diverse range of services. the sustainable management and diverse range of services.

materials, offer diverse habitats for flora and fauna, fulfill their protective functions and extend an invitation to leisure activities" (Federal Ministry of Food, Agriculture and Consumer Protection, 2011).

Poland

Polish forests cover an area of almost 30% of the total land area, which equals 9.2 million ha. The health of forests was severely affected by industrial pollution in the past, especially in the south-western part of the country. A total of 82% of Polish forests are owned by the state. Private forests then represent about 16%. Forests in Poland are open to the public, with a few exceptions in the form of young stands, experimental plots, refuges for endangered animal species, river springs, and areas endangered by erosion (Ustawa z dnia 28 wrzesnia 1991 r. o lesach, 1991). The main document setting out the directions of forestry development in Poland is the "National Forestry Policy" (PLP), adopted by the Council of Ministers in 1997 (Kaliszewski et al. 2017; MOŚZNiL, 1997). This document defines the objectives and priorities of forestry policy, describes the organizational, economic and legal conditions for its implementation and identifies the expected outcomes. While the natural, social, economic, institutional, and legal environment changed significantly over the last 20 years, the PLP has not been revised and updated yet, even despite Poland's international obligation under the Ministerial Conference on the Protection of Forests in Europe (MCPFE) now renamed to Forest Europe) (Kaliszewski 2018b; Kleinschmit et al. 2013). Although there were several updating proposals to the National Forest Program 1997 document, none of them has ever been adopted.

Update of the National Forestry Program is a vital step to achieve the objectives and priorities defined in declarations adopted under the MCPFE conferences.

Table 7. Anchor of forest cultural services in the National Forest Policy.

Grouping themes of strategic measures	National Forest Policy
Legislative instruments and rules	*IV. Organizational, economic, and legal conditions* 14) Improvement of regulation through systemic solutions ensuring appropriate support for forestry sector (public and private) *V. Desirable impact of forestry policy* 1) Expected effects – improvement of the monitoring process, more accurate forecasting of the state of forest resources
Compensation of social functions	*IV. Organizational, economic, and legal conditions* 12) General availability of forests for society must not be understood as unrestricted availability of forest resources to subjects of economic activity that benefit from hunting of game, plant materials, mining, tourism, recreation and sport. Regulation of these aspects is essential to save the diversity and sustainability of forests. *Directions:* – determining a sensible level of utilization of these resources – introducing payments for the use of resources *V. Expected effects of forestry policy* 1) Expected effects – improving the state of forest resources and the sustainability of forests
Innovation and increase of employment	*II. Thesis of the forest state policy* 8) Forestry policy is an integral part of environmental policy which provides legal and financial mechanisms to support owners and forest managers for them to invest and protect the common goods in forests *IV. Organizational, economic and legal conditions* 13) Increasing the economic efficiency of privately owned forests
Public relation	*IV. Organizational, economic, and legal conditions* 8) Nature and forest education and support to forestry policy c) making forestry policy approachable by the public: – launch regular public consultations at local and regional levels – adhere to the principles of continuous informing of the public about the state of forests *9) Interdepartmental cooperation* – The role of forests in the socio-economic development of the country – define the interpretation of forestry policies which are implemented in systems across departments *V. Expected impact of forestry policy* 1) Expected effects – increase in public awareness about the forests, their protection and use
Education	*IV. Organizational, economic and legal conditions* 8) Nature and forest education and support of forestry policy a) in the field of formal education – expanding knowledge about the functioning of forest ecosystems in secondary and higher forestry education – striving for their introduction into the curriculum in primary and secondary education b) in the field of non-formal education – organize and develop different types of training – organization of courses, workshops, exhibitions, ... – use of media – publishing of books, magazines
Recreation	*IV. Organizational, economic and legal conditions* 4) the structure of state administration determines universal availability of forests for people is determined *V. Expected impact of forestry policy* 1) Expected effects – preservation of forest values by directing tourism and recreation into forests

Kaliszewski (2018) shows that many European forestry policy priorities are not reflected in the PLP. The priorities that are not included are adaptation of forests to climate change, perspective of a "green economy", increasing the economic contribution of sustainable forest management to rural development and ensuring the participation of all stakeholders in forests. Related to this is the matter of decision-making processes, the need for improvement in communication across forestry and the development of interdepartmental cooperation across the industry (Kaliszewski 2018b). One of points of the program mentions the introduction of payments for using forest resources with striving to result in their balanced use. This point is partly pleased in the form of visitor's fees for entering the forests of national parks and reservations (Ustawa z dnia 28 wrzesnia 1991 r. o lesach, 1991).

One of important goals within the development of cultural ecosystem FCS is the promotion of new education tools regarding forests among the public. Another important element is the development of tourism and recreation, which should be focused on game management, which is one of the most favorite tourist attractions (Instytut Badawczy Leśnictwa, 2014).

Czech Republic

There are 2.6 million ha of forest in the Czech Republic, which represents 34% of the total land area. More than a half of the forest area is owned by the state (Ministry of Agriculture, 2019).

In accordance with its obligations arising from international law and membership in the European Union, the Czech Republic strives to ensure SFM and to fulfill positive non-production effects. Everyone has a right to enter the forest at their own risk, picking non-wood forest products while not disturbing or damaging the forest environment. In terms of payments for FES, free entry into the forest has been established and no fee can be charged for it (Lesní zákon, 1995)

Mushroom and plant roots picking are common activities with family members and generate positive socio-economic impact such as transfer of knowledge at a community level. (Šišák et al. 2016;) The main driver for visiting the forest was just to go for a walk or just to enjoy the outdoors, especially during holidays or weekends, amounting up to 79% of the inhabitants. Meditation, relaxation as well as sport in woodlands all belong to motives for forest recreation (Šodková et al. 2020). The recent study from the Czech Republic (Riedl et al. 2019) found that the general public is willing to actively participate in community voluntary works in the forest rather than receiving the forest news. This clearly means that people prefer their own experience associated with forests. An effective tool for forest promotion can be tree planting events or other forest excursions.

The most current strategic document regarding Czech forests is the State Forest Policy 2035, issued by the Czech Ministry of Agriculture. The aim of this policy is to set priorities in forest management in a way that forests fulfill all their functions i.e. economic, environmental and social on a long-term basis. This document will

Table 8. Anchor of forest cultural services in the State Forest Policy 2035.

Grouping themes of strategic measures	Resolution on the National Forest Program
Legislative instruments and rules	*Long-term Goals:* A) Ensure well-balanced complete performance of all forest functions for future generations Legislative instruments: forest law, hunting law B) Increasing biodiversity and ecological stability of forest ecosystems while maintaining the production function Legislative instruments: Forest Act, Act on Trade in Forest Tree Reproductive Material C) Ensure competitive ability of forestry and its related industries Legislative instruments: Forest Act, Competence Act, Public Procurement Act
Innovation and increase of employment	*Long-term goals:* C) Ensure competitive ability of forestry and its related industries Measures: 1) reduction of legislative burden D) Strengthen the importance of advice, education, research and innovation in forestry Measures: 1) strengthening the role of science, research and innovation
Public relation	*Long-term goals:* C) Ensure competitive ability of forestry and its related industries Measures: 4) preservation of public use of forests 7) strengthen the importance of forestry at a regional level D) Strengthen the position of counselling, education, research and innovation among forestry sectors Measures: 3) development of counselling and education
Education	*Long-term goals:* D) Strengthen the position of counselling, education, research and innovation among forestry sectors Measures: 1) strengthening the role of science, research and innovation 2) improving the content of curriculums among all levels of forestry education 3) developing counselling and public education 5) significantly strengthen the position of Czech forestry research at an international level

serve as a foundation for the formulation of legislation and subsidies. Where appropriate, it may also be used to set out the common tasks of ministries and professional institutions concerned. It reflects the current challenges arising mainly from the bark beetle calamity and the current situation on the raw wood market.

The vision of this policy is to achieve the following: "Forests for society": sustainable multi-functional forestry that fulfills current and expected societal needs; Positive contribution of forests to the quality of life. Forests are providing a pleasant living environment, opportunities for recreation and preventative healthcare while also maintaining and enhancing environmental amenities and ecological values. SFM provides various FES, them being environmental, economic, social, and cultural benefits for society; Provision of a renewable raw material which is being produced and used in an environmentally friendly manner. This plays an important role in economic development, employment and prosperity, especially in rural areas (Ministry of Agriculture, 2020).

The document does not directly list specific measures to improve the provision of FCS. The content includes primarily general goals and steps for the fulfillment of sustainable forest development. The absence of emphasis on FCS is mentioned in a study Báliková et al. (2019) where FCS were considered the least important in a pairwise comparison.

Hungary

Unlike in most European countries, majority of forests in Hungary are covered with broadleaved species. (Palla et

Table 9. Anchor of forest cultural services in the National Forest Program.

Grouping themes of strategic measures	Resolution on the National Forest Program
Innovation and increase of employment	*V.1. Rural and regional development, afforestation, forest protection* *V.1.2. Strategic goals:* 2) efficient use of rural development support 3) increasing the number of forest workers, improving their working conditions and job security, securing stable employment in rural areas *V.3. Development of private forestry* *V.3.2. Strategic goals:* 1) to increase employment in rural areas 2) to improve the profitability of private forestry 3) create and develop a professional base of the private forestry sector *V.4.2. Strategic goals:* 4) application of close-to-nature methods while maintaining high employment rates in rural areas and creating new job opportunities
Public relations	*V.2 Development of state forest administration* *V.2.3. Proposals for achieving strategic goals:* h) active participation in education, research, and development of IT i) efficient use of media and public relations j) harmonization of forest management and game management *V.4. Nature protection in forests* *V.4.3. Proposals for achieving strategic goals:* b) strengthening cooperation with nature conservation organizations and departments *V.8. Forest management* V.8.2. Strategic goals: 5) operation of modern and efficient forest management methods 6) international relations 7) facilitating the dissemination of forest-related information *V.10. Effective communication* *V.10.1. General objectives:* 1) enhancing the level of forestry study program and education, V. 10.2. Strategic objectives: 1) emphasizing the importance of forests and the need for sustainable forest management 2) explanation of the fact that sustainable management of forests involves the provision of FES 4) Presentation of the strengths of Hungarian forests and their current challenges
Education	*V.2 Development of state forest administration* *V.2.1. General objectives:* 4) development of infrastructure and environmental education, support of forest pedagogy, forest nurseries, formation of ecological attitude *V.9. Research, education* *V.9.2. Strategic goals:* 5) use of FES and public social functions
Recreation	*V.2. Development of state forest administration* *V.2.1. General objectives:* 3) development of infrastructure for the purpose of public recreation *V.2.2. Strategic goals:* 4) Quality satisfaction of social needs of the public by state forests and quality fulfilment of public care 5) development of ecotourism infrastructure and services *V.2.3. Proposals for achieving strategic goals:* d) Public well-being and development of tourism

al. 2019). The last decades brought extraordinary political and legal changes in Hungary, including the accession to the Europe Union. The primary result of international forest policy developments in Hungary was definitely the set-up of the National Forest Program (NFP) for the period 2006–2015. The NFP embraced ten main goals such as nature conservation in forest, development of state and private forest management, or modern forms of forest protection. By the end of 2015, following the review of the implementation results of main NFP objectives, the process of developing a new, long-term forest strategy started. The new "National Forest Strategy 2016–2030" (NFS) corresponds with main objectives of the EU Forest Strategy 2013 and enables the maintenance of multiple functions of Hungarian forests through their balanced impact on the environment, society and economy.

The NFS represents high political commitment for SFM and addresses following challenges: ensuring the conservation and enrichment of the forest; reducing the impacts of climate change; and considering the impact of natural factors and human interventions on forest ecosystems and habitats. The NFS also considers an increasing social support to efforts which promote nature conservation in forests and extension of close-to-nature forest management

One of the main principles and objectives of forest management in Hungary is the consistent and sustainable management of forests as a natural resource, which, at the same time, must meet the forest-focused environmental, social, recreational and consumption needs of society (Komarek 2007). Hungarian forests are open to the public, it is allowed to use the forests for recreation and to collect materials other than wood free of charge. Grazing in the forests is, however, prohibited. One of the strategic priorities is building forest infrastructure in order to develop accessibility and improve recreational use of forests (Benkhard et al. 2018; Földművelésügyi Minisztérium, 2016). Ecotourism is one of the point tackling cultural services. In the past decade, huge investments were realized into secure and healthy recreation forest opportunities. The role of forest put in forward economic, social and nature conservation effects. Recently, the government emphasizes the role of the forest has gained importance with regard to the economic, social, and protective effects of nature (Stefan Gössling 1999; National Forestry Association, 2019)

4. Conclusion

The study examined the anchor of FCS in the main national forest policy documents of selected CEC. Due to the increasing demand for forest recreation (Font & Tribe 2000; Gössling et al. 2006) and at the same time due to the growing urbanization (European Commision, 2020; Turner et al. 2004) in Europe, FCS come to the fore more than ever before. Therefore, if we want to achieve multi-functional forestry, the integration of the whole FES spectrum, especially of neglected FCS into policy documents and decision-making processes is crucial.

The article shows that the common general point of reviewed forest programs and strategies is the effort to ensure that forests provide a multi-purpose function, including environmental, social and economic aspects, as anchored in the EU Forest Strategy. However, FCS are on the edge of policy frameworks because the goals of forest policy are allocated to other areas of forest policy interest.

Consequently, countries should include a full spectrum of FES in their national forest policies, thus providing tools and guidance to forest owners on how to use the forest multiple functions regarding to FCS. Support for business innovation in this direction has been found to be crucial, especially for rural areas. Create a portfolio of various recreational activities for potential consumers is the first step to develop less attractive recreation areas.

In order to create national platforms for the field of FCS in forestry, it is necessary to involve more academic studies across Central Europe for focusing on the development of FCS and human health. A shortcoming seems to be the lack of interdisciplinary cooperation in the processes of setting FCS-related objectives. The challenge for the future is to develop collaboration with the specialists of biology, healthcare, pedagogy, ecology, and forestry who would training experts, design methodologies, plan facilities in the forests, and promote the FCS to the general public.

The final recommendation is to continue in efforts to implement FCS in the national forest programs and strategies and to launch a participatory, holistic, interdisciplinary process of forest policy planning, implementation, monitoring, and evaluation. One opportunity could be to apply payments for FCS so that the forest better serves the public interest.

Author Contributions: Conceptualisation, M.H., methodology, M.H., writing-original draft preparation, M.H., TČ, R.C.P ; software, R.C.P., formal analysis R.C.P; critical revision of the manuscript for important intellectual content, R.C.P., T.Č.; supervision; M.H. leader of project; M.H.. project administration M.H., R.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research was financed by the Operational Program Research, Development, and Education (OPRDE), Ministry of Education of the Czech Republic, grant no. CZ.02.1.01/0.0/0.0/16_019/0000803, and the the Ministry of Agriculture of the Czech Republic, grant no. QK1920391.

Acknowledgments

This work was supported by the "Advanced research supporting the forestry and wood-processing sector's adaptation to global change and the 4th industrial revolution" and the project "Diversification of the Impact of the Bioeconomy on Strategic Documents of the Forestry-Wood Sector as a Basis for State Administration and the Design of Strategic Goals".

References

Agimass, F., Abildtrup, J., Mayer, M., Ščasný, M., Strange, N., Lundhede, T., 2019: Childhood Experience in Forest Recreation Practices: Evidence from Nine European Countries. Urban Forestry & Urban Greening, 46:126471. Available on https://doi.org/10.1016/j.ufug.2019.126471

Askerlund, P., Almers, E., 2016: Forest gardens – new opportunities for urban children to understand and develop relationships with other organisms. Urban Forestry & Urban Greening, 20:187–197.

Báliková, K., Červená, T., De Meo, I., De Vreese, R., Deniz, T., Abdelmohssin et al., 2019: How Do Stakeholders Working on the Forest-Water Nexus Perceive Payments for Ecosystem Services? Forests, 11: 12. Available on https://doi.org/10.3390/f11010012

Baveye, P. C., Baveye, J., Gowdy, J., 2013: Monetary valuation of ecosystem services: It matters to get the timeline right. Ecological Economics, 95:231–235.

Benkhard, B., Előd, R., & Erdős, K., 2018: Restrictions or possibilities? – Visitor management in the Börzsöny landscape unit of Danube-Ipoly National Park (Hungary). Turizam, 22. Available on https://doi.org/10.5937/turizam22-18798

Benz, J. P., Chen, S., Dang, S., Dieter, M., Labelle, E. R., Liu et al., 2020: Multifunctionality of Forests: A White Paper on Challenges and Opportunities in China and Germany. Forests, 11: 266. Available on https://doi.org/10.3390/f11030266

Bielinis, E., Takayama, N., Boiko, S., Omelan, A., Bielinis, L., 2018: The effect of winter forest bathing on psychological relaxation of young Polish adults. Urban Forestry and Urban Greening, 29:276–283.

Bielinis, E., Bielinis, L., Krupińska-Szeluga, S., Łukowski, A., Takayama, N., 2019a: The Effects of a Short Forest Recreation Program on Physiological and Psychological Relaxation in Young Polish Adults. Forests, 10:1. Available on https://doi.org/10.3390/f10010034

Bielinis, E., Bielinis, L., Krupińska-Szeluga, S., Łukowski, A., Takayama, N., 2019b: The Effects of a Short Forest Recreation Program on Physiological and Psychological Relaxation in Young Polish Adults. Forests, 10: 34. Available on https://doi.org/10.3390/f10010034

Bielinis, E., Jaroszewska, A., Łukowski, A., Takayama, N., 2020: The Effects of a Forest Therapy Programme on Mental Hospital Patients with Affective and Psychotic Disorders. International Journal of Environmental Research and Public Health, 17:118. Available on https://doi.org/10.3390/ijerph17010118

Bouwma, I., Schleyer, C., Primmer, E., Winkler, K. J., Berry, P., Young, J. et al., 2018:. Adoption of the ecosystem services concept in EU policies. Legal Aspects of Ecosystem Services, 29:213–222.

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N. et al., 2020: The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. The Lancet, 395:912–920.

Dickinson, D. C., Hobbs, R. J., 2017: Cultural ecosystem services: Characteristics, challenges and lessons for urban green space research. Ecosystem Services, 25:179–194.

Dodev, Y., Zhiyanski, M., Glushkova, M., Shin, W. S., 2020: Forest welfare services—The missing link between forest policy and management in the EU. Forest Policy and Economics, 118:102249. Available on https://doi.org/10.1016/j.forpol.2020.102249

Eldar, R., Kullmann, L., Marincek, C., Sekelj-Kauzlarić, K., Švestkova, O., Palat, M., 2008: Rehabilitation medicine in countries of Central/Eastern Europe. Disability and Rehabilitation, 30:134–141.

Farber, S. C., Costanza, R., Wilson, M. A., 2002: Economic and ecological concepts for valuing ecosystem services. Ecological Economics, 41:375–392.

Feng, Z., 2010: A Review of "Tourism and Transport: Modes, Networks and Flows". Tourism Geographies, 12: 579–582.

Ferrell, B. R., 1995: *The impact of pain on quality of life. A decade of research*. Nursing Clinics of North America, 30:609.

Fish, R., Church, A., Willis, C., Winter, M., Tratalos, J. A., Haines-Young, R. et al., 2016: Making space for cultural ecosystem services: Insights from a study of the UK nature improvement initiative. Shared, plural and cultural values, 21:329–343.

Fisher, B., Turner, R. K., Morling, P., 2009: Defining and classifying ecosystem services for decision making. Ecological Economics, 68:643–653.

Font, X., Tribe, J., 2000: Forest Tourism and Recreation: Case Studies in Environmental Management. Available on https://books.google.cz/books?id=XS32uZOqCBcC

Gerdes, N., Zwingmann, C., Jäckel, W. H., 2006: The system of rehabilitation in Germany. Research in rehabilitation. Stuttgart: Schattauer, 3:19.

Giurca, A., Späth, P., 2017: A Forest-based Bioeconomy for Germany? Strengths, Weaknesses and Policy Options for Lignocellulosic Biorefineries. Journal of Cleaner Production, 153:51–62.

Glück, P., 1987: Social values in forestry-synopsis. Ambio, 16:158–160.

Gössling, S., Hall, C. M., 2006: Tourism and Global Environmental Change: Ecological, Social, Economic and Political Interrelationships. Routledge, 344 p.

Gössling, S., 1999: Ecotourism: A means to safeguard biodiversity and ecosystem functions? Ecological Economics, 29:303–320.

Gould, R. K., Coleman, K., Gluck, S. B., 2018: Exploring dynamism of cultural ecosystems services through a review of environmental education research. Ambio, 47:869–883.

Hansen, M. M., Jones, R., Tocchini, K., 2017. Shinrin-Yoku (Forest Bathing) and Nature Therapy: A State-of-the-Art Review. International Journal of Environmental Research and Public Health, 14:8. Available on https://doi.org/10.3390/ijerph14080851

Hernández-Morcillo, M., Bieling, C., Bürgi, M., Lieskovský, J., Palang, H., Printsmann, A. et al., 2017: Priority questions for the science, policy and practice of cultural landscapes in Europe. Landscape Ecology, 32:2083–2096.

Hölting, L., Beckmann, M., Volk, M., Cord, A. F., 2019: Multifunctionality assessments – More than assessing multiple ecosystem functions and services? A quantitative literature review. Ecological Indicators, 103:226–235.

Hölting, L., Felipe-Lucia, M. R., Cord, A. F., 2020: Multifunctional Landscapes. In: M. I. Goldstein, D. A. DellaSala (ed.): Encyclopedia of the World's Biomes, p. 128–134.

Hussain, R. I., Walcher, R., Eder, R., Allex, B., Wallner, P., Hutter, H.-P. et al., 2019: Management of mountainous meadows associated with biodiversity attributes, perceived health benefits and cultural ecosystem services. Scientific Reports, 9:14977. Available on https://doi.org/10.1038/s41598-019-51571-5

Janeczko, E., Bielinis, E., Wójcik, R., Woźnicka, M., Kędziora, W., Łukowski, A. et al., 2020: When Urban Environment Is Restorative: The Effect of Walking in Suburbs and Forests on Psychological and Physiological Relaxation of Young Polish Adults. Forests, 11:591.

Kaliszewski, A., 2018a: Forest policy goals in Poland in light of the current forestry aims in Europe Part 3. European priorities for the forest policy in Polish programmes and strategies. Forest Research Papers, 79:211–227.

Kaliszewski, A., 2018b: Forest policy goals in Poland in light of the current forestry aims in Europe Part 5. Towards a new forestry development strategy in Poland. Forest Research Papers, 79:355–364.

Kaliszewski, A., Gil, W., 2017: Cele i priorytety „Polityki leśnej państwa" w świetle porozumień procesu Forest Europe (dawniej MCPFE).Sylwan, 161:648−658.

Kimic, K., Kundziewicz, K., 2020: Programme of forest kindergartens supporting children's development through contact with nature – Warsaw case study. In: Fialová, J.: Public recreation and landscape protection – with sense hand in hand? Mendel University in Brno, 592 p.

Kleinschmit, D., Edwards, P., 2013: Pan-Europe and the European Union 3.1. Pan-European forest-focused and forest-related policies. In: European Forest Governance: Issues at Stake and the Way Forward. What Science Can Tell Us 2, p. 45–51. European Forest Institute. Available on https://efi.int/sites/default/files/files/publication-bank/2018/efi_wsctu2_2013.pdf

Komarek, L., 2018: Hungarian forest management tendencies at the beginning of the xxi century. Russian Journal of Agricultural and Socio-Economic Sciences, 78:7–18. Available on https://doi.org/10.18551/rjoas.2018-06.01

Korňan, M., 2020: Potential negative effects of construction of a high-mountain ski resort in the High Tatras, Slovakia, on breeding bird assemblages. Community Ecology, 21:213–226.

Langemeyer, J., Gómez-Baggethun, E., Haase, D., Scheuer, S., Elmqvist, T., 2016: Bridging the gap between ecosystem service assessments and land-use planning through Multi-Criteria Decision Analysis (MCDA). Advancing urban environmental governance: Understanding theories, practices and processes shaping urban sustainability and resilience, 62:45–56.

Lee, I., Choi, H., Bang, K.-S., Kim, S., Song, M., Lee, B., 2017: Effects of Forest Therapy on Depressive Symptoms among Adults: A Systematic Review. International Journal of Environmental Research and Public Health, 14. Available on https://doi.org/10.3390/ijerph14030321

Maehr, B., Keilani, M., Wiltschke, C., Hassler, M., Licht, T., Marosi, C. et al., 2016: Cancer rehabilitation in Austria – Aspects of Physical Medicine and Rehabilitation. Wiener Medizinische Wochenschrift, 166:39–43.

Margaras, V., 2019: Demographic trends in EU regions. EPRS/European Parliamentary Research Service. Available on https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/633160/EPRS_BRI(2019)633160_EN.pdf

Oh, K. H., Shin, W. S., Khil, T. G., Kim, D. J., 2020: Six-Step Model of Nature-Based Therapy Process. International Journal of Environmental Research and Public Health, 17. Available on https://doi.org/10.3390/ijerph17030685

Page, S. J., 2005: Transport and Tourism: Global Perspectives. Pearson Education, 219 p.

Palla, B., Borsicki, I., Lukács, Z., Papp, V., 2019: Onnia triquetra (Pers.) Imazeki, a pine associated polypore species reported for the first time from Hungary. 7:42–54.

Parvex, F., 2011: Territorial Marketing; When Places become products. Available on https://www.slideshare.net/parvex/territorial-marketing-when-places-become-products-kazinsbarcika-2011

Pettenella, D., Secco, L., Maso, D., 2007: NWFP&S Marketing: Lessons Learned and New Development Paths from Case Studies in Some European Countries. Small-scale Forestry, 6:373–390.

Porter, M. E., van Der Linde, C. (1995). *Green and Competitive: Ending the Stalemate*. Harvard Business Review 73.

Purwestri, R. C., Hájek, M., Šodková, M., Jarský, V., 2020: How Are Wood and Non-Wood Forest Products Utilized in the Czech Republic? A Preliminary Assessment of a Nationwide Survey on the Bioeconomy. Sustainability, 12. Available on https://doi.org/10.3390/su12020566

Purwestri, R. Ch., Hájek, M., Šodková, M., Sane, M., Kašpar, J., 2020: Bioeconomy in the National Forest Strategy: A Comparison Study in Germany and the Czech Republic. Forests, 11:608.

Quadt, V., van der Maaten-Theunissen, M., Frank, G., 2013: Integration of Nature Protection in Forest Policy in Austria. INTEGRATE Country Report for Austria. EFICENT-OEF, Freiburg, 49 p.

Rametsteiner, E., Kraxner, F., 2003: Europeans and Their Forests: What Do Europeans Think About Forests and Sustainable Forest Management? A Review of Representative Public Opinion Surveys in Europe. Forest Europe, 55 p.

Rametsteiner, E., Mayer, P., 2004: Sustainable Forest Management and Pan: European Forest Policy. Ecological Bulletins, 51:51–57.

Rathmann, J., Beck, C., Flutura, S., Seiderer, A., Aslan, I., André, E., 2020: Towards quantifying forest recreation: Exploring outdoor thermal physiology and human well-being along exemplary pathways in a central European urban forest (Augsburg, SE-Germany). Urban Forestry & Urban Greening, 49:126622. Available on https://doi.org/10.1016/j.ufug.2020.126622

Riedl, M., Jarský, V., Palatova, P., Sloup, R., 2019: The Challenges of the Forestry Sector Communication Based on an Analysis of Research Studies in the Czech Republic. Forests, 10:935. Available on https://doi.org/10.3390/f10110935

Robinson, J. M., Breed, M. F., 2020: The Lovebug Effect: Is the human biophilic drive influenced by interactions between the host, the environment, and the microbiome? Science of The Total Environment, 720:137626. Available on https://doi.org/10.1016/j.scitotenv.2020.137626

Ruggeri, K., Garcia-Garzon, E., Maguire, Á., Matz, S., Huppert, F. A., 2020: Well-being is more than happiness and life satisfaction: A multidimensional analysis of 21 countries. Health and Quality of Life Outcomes, 18:192. Available on https://doi.org/10.1186/s12955-020-01423-y

Saarikoski, H., Primmer, E., Saarela, S.-R., Antunes, P., Aszalós, R., Baró, F. et al., 2018: Institutional challenges in putting ecosystem service knowledge in practice. Ecosystem Services, 29:579–598.

Saidi, N., Spray, C., 2018: Ecosystem services bundles: Challenges and opportunities for implementation and further research. Environmental Research Letters, 13:113001. Available on https://doi.org/10.1088/1748-9326/aae5e0

Schmithüsen, F. J., 2013: Three hundred years of applied sustainability in forestry. *Working papers/Forest Policy and Forest Economics Department of Forest Sciences. International series*, Available on *https://doi.org/10.3929/ethz-a-009955604*

Sitas, N., Prozesky, H. E., Esler, K. J., Reyers, B., 2014: Exploring the Gap between Ecosystem Service Research and Management in Development Planning. Sustainability, 6. Available on https://doi.org/10.3390/su6063802

Somma, A., Gialdi, G., Krueger, R. F., Markon, K. E., Frau, C., Lovallo, S. et al., 2020: Dysfunctional personality features, non-scientifically supported causal beliefs, and emotional problems during the first month of the COVID-19 pandemic in Italy. Personality and Individual Differences, 165:110139. Available on https://doi.org/10.1016/j.paid.2020.110139

Song, C., Ikei, H., Miyazaki, Y., 2016: Physiological Effects of Nature Therapy: A Review of the Research in Japan. International Journal of Environmental Research and Public Health, 13. Available on https://doi.org/10.3390/ijerph13080781

Song, C., Joung, D., Ikei, H., Igarashi, M., Aga, M., Park, B.-J. et al., 2013: Physiological and psychological effects of walking on young males in urban parks in winter. Journal of Physiological Anthropology, 32:18. Available on https://doi.org/10.1186/1880-6805-32-18

Šodková, M., Purwestri, R., Riedl, M., Jarský, V., Hájek, M., 2020: Drivers and Frequency of Forest Visits: Results of a National Survey in the Czech Republic. Forests, 11: 414. Available on https://doi.org/10.3390/f11040414

Torralba, M., Lovrić, M., Roux, J.-L., Budniok, M.-A., Mulier, A.-S., Winkel, G. et al., 2020: Examining the relevance of cultural ecosystem services in forest management in Europe. Ecology and Society, 25. Available on https://doi.org/10.5751/ES-11587-250302

Turner, W. R., Nakamura, T., Dinetti, M., 2004: Global Urbanization and the Separation of Humans from Nature. BioScience, 54:585–590.

Vacík, H., Hale, M., Spiecker, H., Pettenella, D., Tomé, M., 2020: Non-Wood Forest Products in Europe. Ecology and management of mushrooms, tree products, understory plants and animal products. Books on Demand, 416 p.

Vidale, E., Cai, M., Maso, D., Pettenella, D., 2010: Rural network marketing as innovative ways to achieve rural goals. Available on https://www.slideserve.com/clea/enrico-vidale-with-m-cai-d-maso-and-d-pettenella-dept-landuse-and-agro-forestry-systems-university-of-padua-italy

White, M. P., Alcock, I., Grellier, J., Wheeler, B. W., Hartig, T., Warber, S. L. et al., 2019: Spending at least 120 minutes a week in nature is associated with good health and wellbeing. Scientific Reports, 9: 7730. Available on https://doi.org/10.1038/s41598-019-44097-3

Willcock, S., Camp, B. J., Peh, K. S.-H., 2017: A comparison of cultural ecosystem service survey methods within South England. Putting ES into practice, 26:445–450.

Yau, K. K.-Y., Loke, A. Y., 2020: Effects of forest bathing on pre-hypertensive and hypertensive adults: A review of the literature. Environmental Health and Preventive Medicine, 25. Available on https://doi.org/10.1186/s12199-020-00856-7

Yi, J., Ku, B., Kim, S. G., Khil, T., Lim, Y., Shin, M. et al., 2019: Traditional Korean Medicine-Based Forest Therapy Programs Providing Electrophysiological Benefits for Elderly Individuals. International Environmental Research and Public Health, 16:4325. Available on https://doi.org/10.3390/ijerph16224325

Zsigmond, G., 2010: The meanings and functions of mushrooms as food in Hungarian folk tradition. Acta Ethnographica Hungarica, 55:115–138.

Other sources

BIOPRO, 2018: Country Report WP3 A-3.1. Cross-clustering partnership for boosting eco-innovation by developing a joint bio-based value-added network for the Danube Region. Framework Conditions for Cluster Development in bio-based industry in the Region of Baden-Württemberg, Germany. DanuBioValNet.

Bundesministerium für Nachhaltigkeit und Tourismus, 2018: Austrian Forest Strategy 2020+. Federal Ministry for Sustainability and Tourism.

Ernst & Young, 2007: LOHAS lifestyle of health and Sustainability. Available on http://p285140.mittwaldserver.info/sites/default/files/upload/LOHAS_Ernst_and_Young_2007.pdf

European Commision, 2020: Urbanisation in Europe. Available on https://knowledge4policy.ec.europa.eu/foresight/topic/continuing-urbanisation/urbanisation-europe_en

European Commission, 2014: Sport and Physical activity. Special Eurobarometer 472 – Wave EB88.4 – TNS opinion & social. Brussels.

European Commission, 2019: COMMUNICATION FROM THE COMMISSION: The European Green Deal. European Commission. Available on https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2019:640:FIN

European Commission, 2020: Factsheet on 2014-2020 national framework for rural development in Germany. Available on https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/rdp-factsheet-germany-national-framework_en.pdf

Eurostat, 2019. Volume of timber (code: For_vol). Available on https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Eurostat, 2020, March 5: Population on 1 January by Age and Sex. Available on https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo_pjan&lang=en.

Federal Minister for Agriculture, Forestry Environment and Water Management, 2017: Forests in Austria. Available online: https://bfw.ac.at/rz/bfwcms.web?dok=10282

Federal Minister of Food and Agriculture, 2014: National Policy Strategy on Bioeconomy. Renewable resources and biotechnological processes as a basis for food, industry and energy. Federal Ministry of Food and Agriculture, Division 531 – Strategy and Coordination of the Directorate-General. Available on https://www.bmel.de/SharedDocs/Downloads/EN/Publications/NatPolicyStrategyBioeconomy.pdf?__blob=publicationFile

Federal Minister of Food and Agriculture, 2017: Forests and Forest Policy in Germany. Available on https://www.bmel.de/SharedDocs/Downloads/EN/Publications/WaldberichtkurzEN.pdf?__blob=publicationFile

Federal Ministry of Food, Agriculture and Consumer protection, 2011: Forest Strategy 2020, Sustainable Forest Management – An Opportunity and a Challenge for Society.

Federal Ministry of Food, Agriculture and Consumer Protection, 2011: Forest Strategy 2020 Sustainable Forest Management – And Opportunity and Challenge for Society. Federal Ministry of Food, Agriculture and Consumer Protection. Available on https://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestStrategy2020.pdf?__blob=publicationFile

Federal Ministry of Food and Agriculture (BMEL), 2014: The Forests in Germany. Federal Ministry of Food and Agriculture (BMEL), Berlin, Germany. Available on https://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestsInGermany-BWI.pdf?__blob=publicationFile

Federal Ministry of Justice and Consumer Protection. (b.r.). § 14 BWaldG – Einzelnorm. Available online https://www.gesetze-im-internet.de/bwaldg/__14.html

Földművelésügyi Minisztérium, 2016: *N*emzeti Erdőstratégia 2016–2030. Földművelésügyi Minisztérium Erdészeti és Vadgazdálkodási Főosztály. Available on http://erdo-mezo.hu/wp-content/uploads/2016/10/nemzeti_erdostrategia_2016.pdf

Food and Agcriculture Organization, 2001: Global Forest Resources Assessment 2000. Available on http://www.fao.org/3/Y1997E/Y1997E00.htm

Forest act. Zakon o gozdovih, Nos 30/1993, 67/2002, 110/2002, 110/2007, 106/2010, 63/2013, 17/2014 and 24/2015 EPA 0119; SOP 1993-01-1299 (1993). Official Gazette of the Republic of Slovenia

Forest Europe, 2019: Human Health and Sustainable Forest Management. Liaison Unit Bratislava. Available on https://foresteurope.org/wp-content/uploads/2017/08/Forest_book_final_WEBpdf.pdf

Millennium Ecosystem Assessment, 2005: Ecosystems and Human Well-being: Synthesis; A Report of the Millennium Ecosystem Assessment. Available on https://www.millenniumassessment.org/documents/document.356.aspx.pdf

Ministerstvo pôdohospodárstva a rozvoja vidieka Slovenskej republiky, 2017: Správa o lesnom hospodárstve v Slovenskej republike za rok 2017 - Zelená správa. Národné lesnícke centrum.

Ministry of Agriculture, 2019: Zpráva o stavu lesa a lesního hospodářství České Republiky v roce 2018. Ministry of Agriculture the Czech Republic. Available on http://eagri.cz/public/web/file/640937/Zprava_o_stavu_lesa_2018.pdf

Ministry of Agriculture, 2020: Koncepce státní lesnické politiky do roku 2035, (The Concept of State Forestry Policy until 2035). Ministry of Agriculture of the Czech Republic. Available on http://eagri.cz/public/web/mze/lesy/lesnictvi/koncepce-a-strategie/koncepce-statni-lesnicke-politiky-do.html

MOŚZNiL,1997:. Polityka leśna państwa. Dokument przyjęty przezRadę Ministrów w dniu 22 kwietnia 1997 r. Warszawa. Ministerstwo Ochrony Środowiska, Zasobów Naturalnych i Leśnictwa. Available on https://www.katowice.lasy.gov.pl/c/document_library/get_file?uuid=506deebb-988d-4665-bcd9-148fcf66ee02&groupId=26676

Zákon o lesoch, 326/2005: National Council of the Slovak Republic.

National Forestry Association, 2019: Megalakult az Aktív és Ökoturisztikai Fejlesztési Központ (The Active and Ecotourism Development Center has been established). Országos Erdészeti Egyesület (National Forestry Association). Available on https://www.oee.hu/hirek/agazati-szakmai/aktiv_okoturisztikai_fejlesztes_kozpont_megalakult

Zákon č. 289/1995 Sb., ze dne 3. listopadu 1995 o lesích a o změně a doplnění některých zákonů, Pub. L. No. 289/1995 Sb, 1995: Parliament of the Czech Republic, Available on http://lesnizakon.cz/

The World Bank Group, 2020, October 24: Forest area (sq.m) -countries. Available on www.data.worldbank.org. https://data.worldbank.org/indicator/AG.LND.FRST.K2

Ustawa z dnia 28 wrzesnia 1991 r. O lesach, Pub. L. No. 444, 101 1357. Available on http://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU19911010444/O/D19910444.pdf

World Health Organization, 2001: Strengthening mental health promotion (Fact sheet, No. 220). World Health Organization. Geneva.