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ENSURING ECOSYSTEM SERVICES OF FORESTS WITH THE EMPHASIS ON THEIR PRODUCTION FUNCTION

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INTRODUCTION

- forests as one of the important elements, fulfil the ecological, economic and social functions
- necessary to raise support and implementation of SFM, conservation and reasonable use of all wood and non-wood forest products
- ecosystem, as well as forests and their related processes, offer a number of goods and services for human society
- rapid growth and development of economic societies leads to the global conversion of ecosystems

FORESTRY EXTERNALITIES

- many people believe that services of nature are free/they are of little/no value
- reflected in the loss in terms of increased illnesses, reduced soil fertility, waste water treatment facilities, losses in those images of nature contributing human basic happiness → EXTERNALITIES
- EXTERNALITIES – positive/negative
  - positive - increasing landscape quality, increasing water quality, etc.
  - negative – pollution, forests losses in biodiversity and landscape value occurred due to plantation forestry, the losses of recreational value arisen from poor management and intensive plantation forestry, etc.

CLASSIFICATION OF ECOSYSTEM SERVICES

- CBD (2019) – the ecosystem approach is a strategy for the integrated management of land, water and living resources promoted conservation and sustainable use in an equitable way
- three globally recognized approaches for categorise of ecosystem services:
  - Millennium Ecosystem Assessment (MEA);
  - Common International Classification of Ecosystem Services (CICES);
  - Economics of Ecosystem and Biodiversity (TEEB).

Millennium Ecosystem Assessment (MEA)

- MEA - important global study about ecosystem services
- categories of ecosystem services:
  - Provision - include products obtained from ecosystems (food, water, raw materials, energy and genetic resources etc.)
  - Regulation - provide benefits obtained from regulation of ecosystem processes (climate, disease, water regulation, water purification and pollination)
  - Cultural - create nonmaterial benefits obtained from ecosystems (spiritual and religious, recreation and ecotourism, aesthetic, inspirational, educational, sense of place, cultural heritage)
  - Supporting - offer services necessary for the production of all other ecosystem services (soil formation, nutrient cycling and primary production)

Common International Classification of Ecosystem Services (CICES)

- CICES (2018) classification:
  - supply (e.g. wood as a material, biomass for energy production);
  - regulatory and support (e.g. regulation of soil environment, water, climatic conditions, biodiversity conservation);
  - cultural (recreational).

Economics of Ecosystem and Biodiversity (TEEB)

- TEEB (2010) recognizes four categories of services - supporting; provisioning; regulating and cultural
- TEEB considers them as direct and indirect contributions of ecosystems to human wellbeing

PRODUCTION FUNCTIONS OF FORESTS

- forest functions – non-productive/productive function
- in SR – production function is mainly understood as the production of wood
- Forest Europe – forest is a major resource for social welfare where forests:
  - (i) protect us and our infrastructure;
  - (ii) provide us with wood for a wide range of uses and many other goods;
  - (iii) energy from wood resources contributes significantly to achieve renewable energy targets;
  - (iv) woody biomass is the most important single source of renewable energy in Europe (wood presents for almost as much energy like hydro, wind, solar, geothermal, municipal and industrial waste and other biomass put together).

FOREST CERTIFICATION AS SUPPORTIVE TOOL

- in Slovakia, specific and practically the most and exclusively used voluntary tool is certification
- forest certification – to achieve a condition allowing the forest serving for people in the right way
- certification tasks complemented to other forestry policy tools and forestry governance:
  - ensuring the legality of wood;
  - requirements of public wood purchasing policies;
  - stakeholder participation; etc.
- basis for the Slovak Forest Certification Systems (PEFC endorsed) is the certification of quality management system in terms of sustainability of forest management

Criterion title	SUSTAINABILITY AND CONTINUITY OF HARVESTING
Full wording of criterion	The volume of timber for harvesting shall be determined differently according to the categories of the forest in order to ensure optimum utilization of the productive potential of forests and maintain sustainable fulfilment of the functions of the forest
Criterion objective	Uniform use of standing volume up to the objectively determined harvesting indicator level
Legislative framework	- Act NR SR 326/2005 Coll. on forests as amended - Decree MP SR 453/2006 Coll. on forest management and forest protection as amended - Decree MPRV SR 297/2011 Coll. on forest management records
Regional indicators	1. The existence of mechanisms for a long-term determining of sustainable harvesting, use of forests and their functions (yes / no) 2. Comparison of the total current increment and timber harvesting (m^3) 3. Comparison of allowable cut and timber harvesting (m^3)
Individual indicators	1. Compliance with legislative principles for timber harvesting 2. The total volume of timber harvesting prescribed in FMP shall not be exceeded 3. The annual volume of harvesting during the validity of the FMP under the proper forest management shall be in the range between 70% to 130% of the 1/10 of the FMP prescription (valid for entities over 1000 ha) 4. The volume of intentionally harvested timber by species shall equal (+/- 15%) to data on volume obtained from trees marking and recorded in the harvesting permit.
Explanatory note	Proper forest management: the total volume of accidental felling shall not exceed 36% of the total harvesting prescribed by FMP for forest of ownership unit
Sources of information	- databases of IS LH NLC, FMP and LHE of forest manager, permission for timber harvesting, results of state supervision, inspection in forest

CONCLUSION

- production of wood and non-wood products is one of the most important functions of forest ecosystems
- forest functions (including production) is a part of the definitions given by the major world classifications of ecosystem services (e. g. MEA, CICES and TEEB)
- production function (both wood and non-wood products) is categorized under the provision of services, main goal is to obtain products from ecosystems and use them as efficiently as possible
- in Slovakia, ecosystem services are considered to be the effects of forest functions
- production function is directly supported by the forestry legislation and in addition by the voluntary national forest certification system endorsed by PEFC
- management of certified forests complies with the highest environmental, social and ethical standards and labelled certified forest products can be easily recognised and identified by the consumers

Thank you for your attention!

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