

THEORETICAL AND HISTORICAL ASPECTS OF FOREST POLICY DEVELOPMENT

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Abstract. The Latvia's National Forest policy is internationally recognized. In the same time influence of related policies to forests is growing and vision of forest sector development needs to be improved with taking into account the set of global and European Union goals. The article analyses whether Latvia's forest-related policy planning documents cover the horizontal objectives of European Union's new initiatives and assesses whether the forest sector's potential is included within achievement of related policy goals, and whether Latvia's forest policy development trends are in line with forest experts' future vision. Qualitative study of EU policies and policy instruments and action plans has been carried out in order to identify forest-related goals, as well as Latvia's policy planning documents have been analysed to identify appropriate initiatives and measures related to the implementation of climate-smart forestry and results of activities implementation since 2015 are demonstrated. Study demonstrates that in spite the EU Green Deal serves as a framework for the coordination of policy initiatives, the potential input of forests in related policies has been fragmented and, in some cases, has contradictory nature. These aspects raise concerns about incompletely realised contribution of forestry and the forest sector potential. The Analysis shows that the new initiatives are largely included in Latvia's national policy planning documents; however, some nuances of these EU documents still require more careful evaluation and implementation. In order to promote full contribution of a forest sector to the implementation of the EU Green Deal and achievement of related policies goals, it is necessary to identify the full potential of Latvia's forestry and forest sector. In order to fulfil forest sector potential contribution to the EU Green Deal concept, it is necessary to facilitate greater use of climate-smart forestry concept in Latvia's forestry and policy and improve existing and elaborate new policy instruments.

Keywords: forest policy, policy instruments, sustainable forest management, forest.

JEL code: Q23.

Introduction

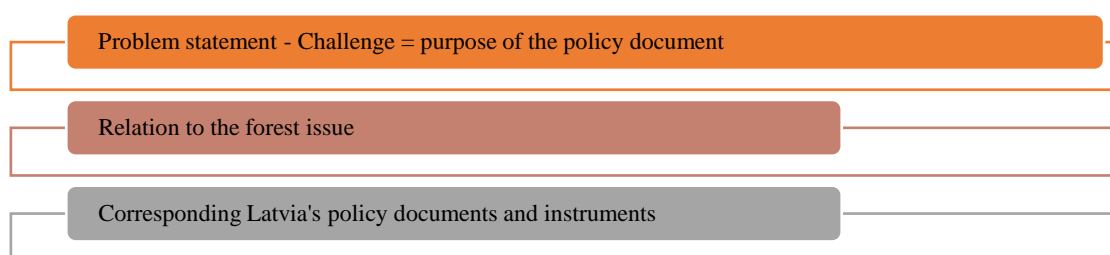
The Latvia's National Forest policy is internationally recognized; however, the influence of forest related policies is growing and the vision for the development of forest sector needs to be improved, taking into account the set of global and European Union development goals. In Latvia, the development of the forest sector is interlinked with development of the common land use policy, climate change mitigation, environment, energy and other policies and sectors. There is a growing need to assess interests and needs of other sectors and interest groups and to find the best balanced solution for co-development. Therefore, it is important to understand the development aspects of forest policy in order to look for solutions of the forest sector development within the framework of Latvian economy and the European Union (EU) Green Deal goals.

The EU Green Deal has set a new vision for the development of the European Union, elaborate a number of new initiatives for achievement of new strategic goals, and many of them also concern a forest sector. There has been no systematic analysis of the impact of EU forest and forestry related policy documents influence on a forest sector. International studies also note that impact of related policies to the forest sector is fragmented and does not provide a confidence of full use of forest management and forest sector potential contribution to achievement of related policy goals. Therefore, objective of this article is to analyse forest policy and other policy documents related to forest sector development interlinks. For achieving the research objective, the following tasks were highlighted: 1) study forest policy development globally and in the EU; 2) determine Latvia's forest policy interconnection with global challenges in the world and the EU.

Significant new initiatives have been developed in the EU in the last 3 years. This article has assessed compliance of Latvia's forest sector national policy planning documents with the new paradigms and tested the *hypothesis* whether the forest-related policy planning documents cover the horizontal objectives of the new initiatives, as well as whether the potential of forest sector is included in achievement of related policy goals and whether Latvia's forest policy development trends are in line with forest experts' future vision.

Material and methods. The article analyses the most important processes and policy documents in forest policy. EU and Latvia's policy documents adopted after Paris Summit (2015) which have a significant impact on forest policy have been selected for in-depth analysis. Documents and instruments of EU significance related to the goals of the EU Green Deal are considered to analyse up to beginning of 2022 and results are summarized in Table 1. In the perspective of forest policy development, possibilities of achieving related policy goals through the concept of climate-smart forestry are analysed. Qualitative study of EU policies and instruments and action plans has been carried out to identify forest-related goals. For this purpose, the Eurelex database was used, using keywords - climate, green course, biodiversity, forest. Latvia's policy planning documents have been qualitatively analysed, searching for appropriate initiatives and measures related to the implementation of climate-smart forestry and implemented activities have been valued since 2015.

Qualitative analysis of processes and documents related to forest policy was performed according to the analytical scheme shown in Figure 1.



Source: created by the author

Fig. 1 Scheme of policy documents analysis

Published scientific findings on development of European policies and instruments for achieving sustainable development goals and role of forests, forest management and forest sector in general have been examined. The articles selected from the ScienceDirect journals database and the Google Scholar search by using keywords - forest, climate smart forestry, EU policy instruments – were used. An evaluation of Latvia's forest policy measures in connection with implementation of the concept of climate-smart forestry has been performed.

Research results and discussion

1. Global forest policy developments and EU policies and instruments

The term "forest policy" in today's sense was firstly mentioned in the literature in W. Rosch's article "Agriculture in the National Economy" in 1860 (Krott M., 2005). Forest policy, which initially took place in form of restrictions based on laws and regulations issued by governments, was the result of over-exploitation of forests. Extensive deforestation and land use for other purposes, mainly for agriculture, posed risks to needs and well-being of a population as a whole. Forests became an object of public interest. Along with changes in economic development from agrarian development to industrial and further to high-tech society, goals of implemented world's forest policy have changed - from preserving of forest areas to increase of forest productivity and up to understanding the importance of forest ecosystems, ecosystem

services and preservation of their provision. National forest policy documents tend to be different - formulated as a general setting of overarching goals and objectives for management of national forest resources, or as a set of relatively precise actions with specific objectives in a particular area. A sound policy in a sector should provide guidance and direction for a certain period of time. Policies are designed to guide current and future decisions and actions (FAO Forestry Paper 161, 2010).

A significant turning point in development of forest policy is related to an emergence of the concept of sustainable development. Sustainable development - "development that meets the needs of today without compromising the needs of future generations" is defined in the report of United Nations World Commission on Environment and Development "Our Common Future" (Brundtland, 1987). Next step was the UN Rio Summit (1992), when the Declaration on the Environment and Development, the Convention on Biological Diversity, the Convention on Climate Change and the UN Forest principles on forests use was adopted. The initiatives from these documents provided basis for global and regional forest policy activities. The United Nations Forum on Forests has launched an initiative within UN system to promote sustainable forest management. The process of Ministerial Conferences on Protection of Forests in Europe has been established in European region. Today, forest policy in Latvia takes into account the political settings of the worlds and the regional forest policy forums.

The beginning of forest policy in Latvia are related to first emergence of forest management regulation. The oldest known forest-related document in the territory of Latvia is from the 16th century. In the First Republic of Latvia, Law on Forest Protection (1923) was adopted, which was followed by Law on Forest Protection (1937). During the restoration of Latvia's independence, the regulatory framework for forest management was developed. The Latvia's Forest Policy – vision of various stakeholders on national forest sector common development - was one of the first strategic documents in the renewed Latvia (LR Ministru Kabinets, 1998).

Since the accession to the European Union, Latvia's as Member State's development has been closely linked to the growth vision of the EU, especially in the areas of common policy. Forest policy is a matter for each Member State and the principle of subsidiarity applies to forest sector, but EU forest related horizontal policies also have an impact on development of the forest sector. The EU shares responsibilities with the Member States in trade, agriculture, environment, energy and climate, which are closely linked issues to the development of the forest sector (Pulzl et al., 2013).

The most important policy strategic documents and instruments of the EU in the beginning of 2022 are summarized in Table 1.

Table 1

EU strategy documents related to the forest sector

Title	Abbreviation	Year of publication
New EU Forest strategy 2030 (European Commission, 2021)	EU Forest strategy	2021.
A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment (European Commission, 2018)	EU Bioeconomy strategy	2018.
The European Green Deal (European Commission, 2019)	EU Green Deal	2019.
A Farm to Fork Strategy: For a fair, healthy and environmentally-friendly food system (European Commission, 2020)	A Farm to Fork Strategy	2020.
EU Biodiversity Strategy for 2030 Bringing nature back into our lives (European Commission, 2020)	Biodiversity Strategy	2020.
REGULATION (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment (European Commission, 2020)	Taxonomy regulation	2020.
Regulation framework for climate neutrality (European Commission, 2021)	Climate law	2021.
Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change (European Commission, 2021a)	Climate Adaptation Strategy	2021.
Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing (EUROPEAN COMMISSION, 2021)	Deforestation regulation	Proposal 2021.

Source: created by the author, adopted from M.Lier et al., 2021

One of the areas that transcends the EU's borders and one of the most significant global challenges is the reduction of greenhouse gas emissions or climate policy. Climate change poses increasing challenges to human health, safety, well-being and the economy and nature in general. Limiting global warming requires comprehensive action by all countries around the world to reduce greenhouse gas (GHG) emissions. The Paris Agreement (2015) aims to strengthen global action to tackle climate change and keep global warming well below 2 ° C compare to pre-industrial levels. The Agreement aims to encourage a shift in investment towards low-carbon and climate-resilient development. Latvia's obligations in context of the Paris Agreement are defined within framework of European Union. In response slow progress of actions EU called for higher targets and go ahead by raising EU GHG reduction target to 55% of 1990 levels. EU has set a new development scenario – EU Green Deal to achieve a common climate neutrality in 2050. The Climate Law (2021) legally approve established target. Achieving Europe's climate goal is part of a comprehensive EU Green Deal strategy to transform EU into a fairer and more prosperous society with a modern, resource-efficient economy. A Forest ecosystem plays a key role in sequestering of CO₂ and reaching the goal.

The second major challenge is a loss of biodiversity, decline and extinction of many plants and living species populations. A number of successive policy documents have been developed within EU to implement the objectives of the Convention on Biological Diversity, the most recent is the EU Biodiversity Strategy 2030 (2020). It sets out a number of actions in several sectors to not only halt the loss of biodiversity by 2030, but also to provide sufficient conditions for nature to recover. The strategy stipulates that at least 10% of the EU's land and 10% of the EU's sea area must be strictly protected, including all forests that

qualify as primary old-growth forests. These settings will affect also forestry and areas for timber production.

The EU Bioeconomy Strategy marks possibility step by step decline use of fossil fuels and set background for further development on renewable resources and applying principles of a circular economy. Developments in bioeconomy are in line with the EU Green Deal initiatives. Although there are some contradictions in production and use of biomass and in increase of uptake of greenhouse gases, which are being actively addressed through development of new GHG reduction regulations. Forest biomass and its further use play a significant role in bioeconomy, as well as in ensuring of neutral balance of GHG in Land use, land use change and forestry sector.

A Farm to Fork Strategy sets out the basic principles and key actions for achieving food sustainability, as well as an opportunity to improve lifestyles, health and the environment. The role of forests is in interactions with sustainable food chains, mitigation of climate change. Reducing deforestation caused by agricultural is also important. The issue of deforestation and forest degradation is more widely addressed in new Regulation on deforestation proposal.

The development of environmentally friendly, climate-neutral smart technologies is important for the implementation of the EU Green Deal. In 2018, the European Commission adopted Action Plan for Financing Sustainable Growth, under which the Commission committed to establish a clear and detailed EU classification system for sustainable action or Taxonomy. This system creates a common understanding among all actors in the financial system to assess whether economic activities are "sustainable" in transition to climate neutrality in the framework of the EU Green Deal. The Taxonomy Regulation provides four forestry-related activities for which technical examination criteria have been established in order to considered eligibility for sustainable financing.

The EU Bioeconomy Strategy, A Farm to Fork Strategy, the EU Biodiversity Strategy, the Climate Adaptation Strategy were developed relatively simultaneously and coordinated within the framework of the EU Green Deal. These strategy papers have had a direct impact on the development of the new EU Forest Strategy and on objectives and targets for the forest sector. Although some progress has been made in integration of policies, still policy documents in different areas are too autonomous and too focused on their framework (Elomina & Pulzl, 2021).

The above mentioned policy framework sets ambitious targets and tasks for maximizing carbon storage potential of forests to offset CO₂ emissions from Land, land use and forestry sector, co-financing measures to support sustainable forest management by halting the loss of biodiversity and ecosystem services (Aggestam & Giurca, 2021). Over the last decade forest policy has changed in various directions and absorbing the pressure to integrate other sectoral policies, such as biodiversity conservation, renewable energy and climate change (Sotirov & Storch, 2017). Achievement of sustainable development goals requires a shift from sectoral policy-making to cross-sectoral approach. Forest policy has changed to varying degrees and integrating other sectoral policies, such as biodiversity, bioenergy and climate change (Sotirov & Storch, 2017). The new EU Forest Strategy 2030 confirms the attempt to respect and integrate objectives of related policies.

In 2021, the EC issued a Communication on the EU Forest Strategy for 2030. The main emphasis in the document is on provision of socio-economic functions of the forest. The second area is the protection, restoration and expansion of the EU's forest resources. The challenge is to maintain forest sector economic viability and global competitiveness within this framework. The Strategy lists the goals to be achieved in different areas, without assessing whether their achievement is possible at the same time (increasing the long-term CO₂ sequestration, increasing the area of protected areas, promoting the bioeconomy). In the

context of climate policy, the proposal for a new regulation on Land use, land use change and forestry sector determine GHG sequestration target for forest in 2030, but in setting this is important to take into account CO₂ sequestration potential of forests in long-term. The preferred forest management model for the future in EU outlined in the strategy overcome the principle of subsidiarity and possibility for a Member State to choose the most appropriate forest management method in each situation and reduces the global competitiveness of EU forestry. Consequently, the document developed by the EC has been heavily criticized by organizations representing forest owners and also by the Member States. The EU's forest strategy should keep sustainable forest management at its heart and be in line with Member States' development goals and provide its potential contribution to related policies objectives.

The goals of national climate neutrality pose challenges for development of the national economy and society in general - it is a way to change daily habits, consume less, gradually abandon fossil resources, and introduce the principles of a circular economy in every field. It is clear that it is not possible to exclude GHG emissions completely, at least for the time being, so the capture and storage of emissions must be considered. Forests are essentially the only terrestrial ecosystem with a positive GHG balance (more CO₂ is sequestered than emitted during trees growth). Foresters face a new challenge in forest management - how increase CO₂ sequestration in forest. Solutions are being sought for climate-smart forestry. Climate-smart forestry consists of three components: increasing CO₂ storage in forests and wood products, improving forest viability and adaptation, and the sustainable use of wood resources by replacing fossil fuels (Verkerk et al., 2020). The main idea for this approach is as follows: climate-smart forestry is a holistic approach, as the forest and forest-based sector can contribute to climate change mitigation by considering the need to adapt to climate change and taking into account specific regional conditions (Hetemaki L., Kangas K., & Peltola H., 2022).

Within the EU, there is an opportunity to enhance the role of forests and the forest sector in achieving climate goals. At EU level, the potential for timber production should be identified by strengthening both the forest's CO₂ storage and the substitution effect, with the aim not only of increasing removals but also of increasing GDP and sustainable investment in EU energy security (Nabuurs et al, 2015).

When planning a forest investment, a longevity of forestry must be taken into account - a lifespan of a forest stand can vary from 50 to 100 years. As the projections show, it is possible to achieve an additional 441 Mt CO₂ / year by climate-smart forestry in EU after 2050. At the same time, climate-smart forestry through GHG sequestration and / or emission reduction, adaptation and forest resilience, sustainably increased forest stand productivity and income growth, contributes to a number of different policy objectives (Nabuurs et al, 2017).

However, the potential of climate-smart forestry has not yet been fully assessed in various strategic documents. This approach combines linkage with adaptation, forest sustainability and provision of ecosystem services, and helps meet the resource and service needs of a growing planet population. Climate-smart forestry is an offer for forest management in Europe, but the approach has also a global importance. It is based on sustainable forest management with a focus on climate and ecosystem services and has three mutually reinforcing components: 1) enhance global afforestation and preventing deforestation and forest degradation, 2) combine mitigation and adaptation measures in forest management, 3) sustainable use of wood and replacement of non-renewable carbon-intensive materials (Verkerk et al., 2020).

Latvia's forest policy, strategic documents and state support measures already contain important elements of climate-smart forestry, which more detailed analysed later in this article.

2. Consequences of forest policy development in Latvia in the context of EU policies

A number of EU policy documents set direct or indirect quantitative and qualitative targets relevant to the forest sector. The EU Bioeconomy Strategy, A Farm to Fork Strategy, the EU Biodiversity Strategy, the Climate Adaptation Strategy were developed and published almost simultaneously and coordinated through the EU Green Deal, which affects all of them (Lier et al., 2021). EU policy documents and instruments related to forest management and forest sector are summarized in Table 2, indicating the relationship of related policies objectives with forest sector and corresponding policy planning documents in Latvia. Overviewed policy documents developed in the period from 2015 to 2022.

The EU Bioeconomy Strategy was revised in 2018 to include more clearly the importance of biomass production. The renewed strategy also clarifies the role of forests. The development of forestry and the forest sector can contribute to the second, third, fourth and fifth objectives of the strategy. Latvia's policy document in context of the objectives of the EU bioeconomy strategy with relation to forest sector is Informative Report - Latvia's Bioeconomy Strategy 2030 (Latvijas Bioekonomikas Strategija 2030, 2017). In Latvia's bioeconomy, forestry sector plays an important role in production of bioresources, while use and processing of wood and other forest products are the base for wood industry, furniture production, chemical industry and energy. The implementation of goals of the EU bioeconomy strategy and also of Latvia's bioeconomy strategy is integrated in the forest sector development planning document - Guidelines for the Development of the Forest and Related Sectors for 2015-2020 (Meza un saistīto nozaru attīstības pamatnostādnes 2015.–2020. gadam, 2015). Activities that promote development of bioeconomy are also included in the National Energy and Climate Plan (NECP) (Latvijas nacionālais enerģētikas un klimata plans 2021.–2030. gadam, 2020).

It should be noted that the potential of forests and the forest sector has not been fully assessed in both the Green Deal announcement and the Climate Law and the Climate Adaptation Strategy. The ability of a forest ecosystem to sequester and store CO₂ is assessed, while potential of wood as a resource to replace fossil resources and ability to store CO₂ in wood products is not fully reflected. In addition, the target setting for forests to sequester emissions often fails in assessing short-term and long-term benefits. The targets' setting for 2030 can limit timber production and reduce sector's overall contribution to climate change mitigation. National activities to increase forest sink are defined in the Latvian National Climate and Energy Plan.

The role of forests in the context of A Farm to Fork Strategy is linked to environmental and natural sustainability. Forest has a positive effect on soil stability, water quality and circulation, plant and animal welfare. The provision of these forest functions is incorporated in the Forest and Related Sectors Development Guidelines for 2015-2020 and activities and indicators, which have to be achieved.

Latvia's policy planning documents and instruments already cover a significant part of national implementation of different goals set in EU policies, but new initiatives are emerging internationally and within EU provision, which requires a different perspective on development of forestry and the forest sector. Related policies must be taken into account when a vision for the strategic development of the forest sector after 2020 is developed. The settings and goals of some of related policies are contradictory and require new knowledge and approaches to finding the best solutions. This is not always a successful case, as demonstrates the EC 's New EU Forest Strategy 2030 document.

Table 2

EU policy documents and instruments' connection with forest issues and policy planning documents in Latvia

EU policy documents and instruments	Objectives	Connection with forest issue	Latvia's policy planning documents and instruments
EU Bioeconomy Strategy	Second goal – sustainable management of natural resources	Forest is one of the most important renewable natural resources in Latvia. Sustainable management is background of forest industry's overall development	Latvia's Bioeconomy Strategy, Guidelines for the development of forest and related industries 2015-2020; National Climate and Energy Plan – Land Use, Land Use Change and Forestry activities
	Third goal – to reduce dependence on non-renewable, unsustainable resources of both domestic and foreign origin	Forest biomass is a renewable energy resource and fuel wood accounts for 31% of total energy consumption in 2019	
	Fourth goal – climate change mitigation and adaptation	Forest sequesters CO ₂ , Viability of forest stands is depended on management to improve adaptation	
	Fifth goal – to strengthen Europe's competitiveness and create jobs.	Forest sector is a significant employer, directly employing 45 thousand people, especially in rural territories of Latvia	
EU Green Deal	Transforming the EU into a fair and prosperous society with a modern, resource-efficient and competitive economy in which net greenhouse gas emissions are reduced to zero in 2050 and economic growth is decoupled from resource consumption	Forest ecosystem is main source of terrestrial CO ₂ and along with wood products a storehouse; Forest biomass is a renewable resource that can replace fossil resources	National Climate and Energy Plan – Land Use, Land Use Change and Forestry activities
A Farm to Fork Strategy	Establish a new approach to reduce GHG emissions by 55% compared to 1990 levels through contribution of agriculture, fisheries and aquaculture, as well as food value chains	Forest biodiversity stabilizes overall sustainability of the environment and nature. Forest protects soil, water, plant and animal health and welfare, which is essential for food and feed production	Guidelines for the development of forest and related industries 2015-2020
EU Biodiversity Strategy	Achieving the recovery of Europe's biodiversity by 2030 and people, the climate and the planet will benefit from it	EU plans to set strict protection requirements for 10% of terrestrial and marine areas and increase the coverage of protected areas to 30%. Forest ecosystem is of high biodiversity, protected forest areas have already been established, including NATURA 2000 network in forest lands, nature protection requirements have been set also in forest management outside the protection regime areas	Draft strategic development document for the new period
Taxonomy Regulation	Establish criteria for determining whether an economic activity is considered to be environmentally sustainable in order to determine the extent to which the investment is environmentally sustainable	Test criteria are relatively detailed in forestry, determining supported forest management methods	Draft strategic development document for the new period
Climate Law	A binding target for climate neutrality in the Union by 2050. Establish a framework for the irreversible and gradual reduction of anthropogenic greenhouse gas emissions and the increase in removals by sinks.	From 2030, a target will be set for CO ₂ sequestration in the forest	Draft strategic development document for the new period; National Climate and Energy Plan – Land Use, Land Use Change and Forestry activities
Climate Adaptation Strategy	Implement 2050 vision of a climate-resilient Union by making adaptation smarter, more systematic and faster, and by stepping up international action.	There is a growing need for new knowledge and understanding on how to improve the adaptability of forest ecosystems to climate change	Draft strategic development document for the new period
EU Forest Strategy	Overcome the difficulties and unlock the potential of forests for the future of the EU, in accordance with the principle of subsidiarity and with best available scientific evidence and the requirements of better regulation	Strategy includes different areas policy without assessing whether their achievement is possible at the same time (increasing the long-term CO ₂ sequestration, increasing the area of protected areas, promoting the bioeconomy)	Draft strategic development document for the new period
Deforestation regulation proposal	Reduce consumption of products from supply chains related to deforestation or forest degradation	Applies to imports and consumption of products in the EU. However, the concept of deforestation and forest degradation can be extended to forests in the Member States	Latvia's regulations restrict deforestation, and forest losses must be compensated

Source: created by the author

In 2022, the EU Forest Strategy is in an improvement process and, as already mentioned in this article, has received significant criticism from forest sector organizations, the Member States and the European Parliament Commissions. The EU Forest Strategy is trying to incorporate objectives of related policies, but is losing a clear vision of the role and development of forest sector within the EU and in the Member States.

It should be noted that there are also areas where Latvia's national vision and conditions are already in place, while the EU framework is still being formulated. One of them is the Proposal to limit deforestation. Latvia's regulatory framework sets strict limits for deforestation and provides requirement to compensate forest loss in monetary terms or by planting new forests to an extent of deforested areas elsewhere.

3. Forest policy perspectives and features in Latvia

EU policy trends in forest management set targets for conserving biodiversity and increasing emissions sequestration, which can reduce and limit timber production, in parallel forest experts are looking for other perspectives. Forests, the world's largest source of non-food and non-fodder renewable biological resources, play an important role and cannot be set aside solely for carbon storage. New technologies are emerging and provide previously unknown possibilities for the use of wood and create new approaches to biomaterial-based solutions that can replace fossil-intensive and non-renewable products such as building materials, chemical components, textiles or plastics. Thus, forest management that ensures a continuous and stable flow of wood raw materials is critical to mitigating climate change (Verkerk et al., 2020).

In perspective, a new approach to forest management is coming - climate-smart forestry. As scientists have pointed out, a well-managed forest can contribute significantly to realization of many EU Green Deal goals. What is the state of Latvia's current forest policy, to what extent forest management in Latvia is implemented in accordance with principles of climate-smart forestry? Table 3 shows activities of forest management and the forest sector in Latvia, which can apply to components of climate-smart forest management, demonstrating also quantitative amounts of activities achieved in 5 years. Of course, the concept of climate-smart forestry is broader, and in order to fully implement this approach in Latvia, there is a need to supplement current forest policy and range of state instruments with new knowledge-based activities in field of forests.

Table 3

Implementation of climate-smart forestry in Latvia

Components	Activities	Results 2015.-2020.
<i>Enhance global afforestation and preventing deforestation and forest degradation</i>	Afforestation in Latvia Rural Development Programme (RDP)2014-2020 - Sub-measure "Afforestation" NECP Improvement of CO ₂ sequestration in forest holdings (Measure 9.3)	Afforested – 28.31 thousand ha
<i>Combine mitigation and adaptation measures in forest management</i>	Young stands tending, replacement of non-productive stands and use of selected planting material RDP 2014-2020 Sub-measure - "Investments to improve the sustainability and ecological value of forest ecosystems" NECP Improvement of CO ₂ sequestration of forest holdings (Measures 9.4, 9.5 and 9.6)	Young stands tending – 391.7 thousand ha Replacement of non-productive stands – 8.461 thousand ha Regeneration with use of selected planting material – 87.8 ha
<i>Sustainable use of wood and replacement of non-renewable carbon-intensive materials</i>	Memorandum on Cooperation on Promotion of the Use of Wood in Construction NECP Use of wood in construction (Measure 9.9)	In 2020, the consumption of wood products per capita exceeded 7 m ³

Source: created by the author

As shown in Table 4 with regard to promotion of afforestation, support measures have been implemented in Latvia in accordance with national policy planning documents aimed to increase the forest areas and also the growth of forest GHGs absorption in the long term. The volume of afforestation is growing over a five-year period.

Promoting of use of wood is another area where the potential of forest has not yet been exhausted. In recent years, Latvia has done a lot to promote the use of wood in construction, excellent examples of wooden architecture have been created; however, there are still restrictions that prevent the use of wood in construction, for example, in multi-storey buildings. To facilitate use of wood in construction, the Ministry of Economics signed a memorandum of cooperation with builders and the forest industry in 2021.

Table 4

Climate-smart forestry activities

Activity		2015.	2016.	2017.	2018.	2019.	2020.
Afforestation, thousand ha	Private land	3.3	4.0	3.9	4.6	4.9	6.1
	State forest	0.1	0.1	0.2	0.3	0.4	0.4
Young stands tending, thousand ha	Private forest	23.6	32.7	28.9	34.0	33.6	30.0
	State forest	34.7	35.9	36.4	35.3	34.3	32.3
Reforestation, thousand ha	Sown / planted	13.7	12.6	13.0	14.1	17.0	17.4
	Natural	28.0	26.0	27.4	27.0	27.6	22.0

Source: created by the author, SFS (Meza ieaudzēšana, VMD) (Jaunaudzu kopsana, VMD)

Results of combined mitigation and adaptation measures in Table 4 show stable trends in young stands tending and reforestation is visible in five-year period. Timely maintained young trees are more resilient to risks of climate change and can achieve higher productivity. Stands regenerated with high-quality forest planting material are more productive and able to sequester more CO₂ in life cycle and also adapt better

to climate change. The amount of sown / planted areas has been growing in recent years. Funding of the Rural Development Program 2014-2020 for afforestation has reached 5 437 386 EUR and the funding for maintenance of young stands - 23 266 985 EUR.

Conclusions, proposals, recommendations

- 1) This article analyses the development of forest-related policy in the world and the European Union and the impact on forest policy and strategic development documents on the forest sector in Latvia. The direct impact of global political decisions on development of forest-related processes in Latvia, as well as Latvia's responsibility and involvement in the implementation of common EU policies, has been identified. The EU has adopted a new vision for development - the EU Green Deal, in response to global challenges such as climate change and the loss of biodiversity. Over the last three years, a number of important strategic documents has been developed with the aim of achieving common climate neutrality in the EU Member States by 2050. These initiatives have a direct impact on forest policy in the Member States including Latvia. The EU Green Deal serves as a framework for coordination of policy initiatives, but in same time impact of forest-related policies on forests has been assessed as fragmented and in some cases contradictory, which is raising concerns about incompletely used contribution potential of forestry and the forest sector.
- 2) As analysis of political documents shows, settings of various EU policies for forest management and the forest sector in general have been taken into account in development and implementation of Latvia's national policy planning documents. The EU Bioeconomy Strategy, the EU Green Deal, the Climate Law objectives, the Climate Adaptation Strategy initiatives are largely included in the Latvia's Bioeconomy Strategy 2030, Forest and Related Sector Development Guidelines 2015-2020 and Latvia's National Energy and Climate Plan 2021-2030. However, some nuances of these EU documents still require more careful evaluation and implementation. New challenges for development of the forest sector are related to the EU Biodiversity Strategy, the Taxonomy regulation, the Climate Law framework Regulation, which sets out the target indicators for forest sinks, as well as settings in the new EU Forest Strategy.
- 3) The possible future principles of forest management such as climate-smart forestry, could be a perspective in the context of EU forest management, while maintaining the choice of each Member State for the best forestry solutions adapted to the specifics of the region. Components of climate-smart forestry could play an important role in the global context and in the development of EU forest management practices in line with regional conditions. However, the potential of forests to achieve goals of analysed EU policy documents is narrowed and does not allow to realize full contribution of forestry and forest sector.
- 4) Latvia's policy planning documents and their implementation instruments reviewed in the article include some aspects of climate-smart forestry. In the last seven years, forest management in Latvia has focused on implementation of climate change mitigation practices and increase of CO₂ sequestration in the forest. State support instruments have been introduced and have been operating in Latvia to promote afforestation, as well as to motivate private forest owners to invest in improvement of vitality and productivity of their forest, state support is available for maintenance of young stands. These measures are in line with the concept of climate-smart forestry: promoting afforestation, combined mitigation and adaptation. There are initiatives to use wood in construction and promote sustainable wood use. However, the concept of climate-smart forestry is broader and requires additional identification of the full potential of Latvia's forestry and the forest sector and appropriate development of forest policy and the review of existing state instruments, and the creation of new instruments to

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