

Abstract template for the conference “A century of national forest inventories – informing past, present and future decisions”

Dear author. This is a two-page template that in the first page will ask for information on presenter name, topic, and preferred presentation form.

On page two, you are asked to fill in your abstract in the format and font size indicated. Please remember to include authors affiliation information in the footer section of page two. The length of the abstract may not be more than one page including references.

Abstract title:		Development of Forest Reference Levels and National Forestry Accounting Plans: the Implications for Forest and Land Use Policy in Lithuania
Take-home message:		<i>The study is aimed to introduce Lithuanian GHG accounting and reporting system for Land Use, Land Use Change and Forestry sector, however, focusing on the Forest Reference Level and its forest and land-use policy implications and sustainable development challenges at national level.</i>
Presenter name:		Gintaras Kulbokas
Presenter contact info:		Aleksandras Stulginskis University Studentų str. 11, LT-53361, Akademija, Kaunas reg., Lithuania Lithuanian State Forest Service Pramonės av. 11A, LT-51327, Kaunas, Lithuania gintaras.kulbokas@amvmt.lt +370 68772821
General topic, see website: <small>(please double click on the check box and activate the relevant one)</small>	<input type="checkbox"/>	Improving future NFIs by learning from the past
	<input checked="" type="checkbox"/>	NFIs today and in the future
	<input type="checkbox"/>	Cutting edge and futuristic inventory techniques and technologies
Preferred presentation form:	<input checked="" type="checkbox"/>	Oral presentation
	<input type="checkbox"/>	Poster
<i>Abstracts will be reviewed by members of our scientific committee and you will be given information on decisions in due time after the submission deadline has passed.</i>		

Development of Forest Reference Levels and National Forestry Accounting Plans: the Implications for Forest and Land Use Policy in Lithuania

*Gintaras Kulbokas^{1,2}, Vaiva Jurevičienė^{2,3}, Edmundas Petrauskas¹,
Gintautas Mozgeris¹, Andrius Kuliešis²*

Introduction: The role of land-use change and forestry is highly important for balancing GHG emissions and removals in Lithuania. Current operational GHG accounting and reporting system for Land Use, Land-Use Change and Forestry sector is focused mainly on monitoring and international reporting, however, the importance of related political and management decisions is increasing. Such decisions are usually followed with risks and uncertainties concerning acceleration of climate change, complex dynamics of evolving rural and forest governance, developing ownership structures and land-use patterns. The new EU requirements for developing and reporting Forest Reference Levels are going to be quite a challenge, too. The presentation would introduce methodological framework for projecting forest development in Lithuania. The discussion is concentrated around the potential Forest Reference Level, forest and land-use policy implications and sustainable development challenges at national level under different future alternatives. Forest Reference Level will be compared with the projections, developed using alternative approaches, including other modelling tools.

Materials and methods: As an input for modelling forest management development, the Lithuanian NFI data collected in the period from 1998 till 2017 will be used. However, period from 2000 till 2009 will be considered for Forest Reference Level calculation to document forest management practices. First of all, a system of forestry and land-use scenario development based on the European Forestry Dynamics Model will be employed both (i) to estimate the Forest Reference Level and conduct the validations required by EU regulation and (ii) to simulate the most reliable forest development based on most recent forest management practices. Then, projections will be repeated and compared with other projection tools, like Lithuanian forestry simulator Kupolis, which is using data from stand-wise forest inventories for input. Finally, the projected forest resource development will be translated into the potential trends of ecosystem services. Trends of key forest ecosystem services achieved using alternative approaches will be compared with the ones assumed by the Forest Reference Level.

Results: Preliminary results indicate significantly growing-up national forest resources with increasing timber supply and carbon sequestration, keeping water and regulatory services at the same level and declining biodiversity and cultural ecosystem services, if forest management practices used during current decade are applied to specify modelling parameters. However, forestry during the reference period, which was used to build the Forest Reference level, is significantly different from the current one. I.e. the harvesting rate in private forests was steadily increasing and the areas of forests reserved for restitution (with practically no management) were going down to become both stable after 2010, resulting in rather contrasting outputs. So, the Forest Reference Level to be estimated and validated using strictly prescribed procedures may be difficult to perceive by several Lithuanian stakeholders.

Conclusion: Suggested legal framework to estimate Forest Reference Level needs to be followed strictly to fulfil international obligations and shall be used with care for future forest management decision support.

Reference: *Kulbokas, G., Mozgeris, G., Kuliešis, A., Kazanavičiūtė, V., Augustaitis, A. Development of national LULUCF GHG projection system: the implications for forest and land use policy in Lithuania // IUFRO 125th Anniversary Congress 2017, 18 – 22 September 2017, Freiburg, Germany : Abstract book. Freiburg, 2017. p. 73.*

1. Aleksandras Stulginskis university, Studentų 11, LT-53361, Akademija, Kaunas reg., Lithuania

2. Lithuanian State Forest Service, Pramonės av. 11A, LT-51327, Kaunas, Lithuania

3. Vytautas Magnus university, K. Donelaičio str. 58, LT-44248, Lithuania