Climate change mitigation potential of trees in shelter belts of drainage ditches in cropland and grassland

Nr. 1.1.1.1/21/A/030

Implementation period3/01/2022 – 30/11/2023

Latvian State Forest Research Institute SILAVA

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Ltd "Latvian Rural Consultation and Education Centre"

Deliverable 6.1.

Manuscripts of peer reviewed articles

Summary

Task 6.1 was implemented by elaboration of articles for peer reviewed journals and proceedings. Manuscripts of scientific publications had been elaborated for high level journals with citation index above 50% of the sectoral average (5 papers), additionally (3) original scientific articles published in magazines or conference proceedings included in the Web of Science or SCOPUS (A or B) database, and one paper will be submitted to the Estonian scientific journal Forestry studies. Initially planned thematic issues:

- "Review of crop communities suitable for different growth conditions in the shelter belts in Latvia",
- "Soil GHG fluxes in shelter belts with mineral and organic soils",
- "Development of carbon pools in the shelter belts",
- "Nutrient retention potential of the shelter belts of drainage ditches",
- "Socio-economic analysis of transformation of the shelter belts around drainage systems into biomass factories",
- "Principles and benefits of integration of design and assortment structure in short rotation coppice crops",

had been covered by publicications listed in table below.

No	**Authors, title, journal, link to the publication**	**Published**	**Activity related**	**Comments**
	Original scientific articles published in magazines or conference proceedings, the citation index of which reaches at least 50 percent of the average citation index in the sector.			**Expected: 4**
1.1.	Makovskis, K.; Dūmiņš, K.; Štāls, T.A.; Vendiņa, V.; Bārdule, A.; Lazdiņa, D. Long-Term Effect of Wood Ash and Wastewater Sludge Fertilization on Tree Growth in Short-Rotation Forest Plantations on Abandoned Agricultural Land: A Case Study. Sustainability 2023, 15, 16272. https://doi.org/10.3390/su152316272	24.11.2023	1,4,5	JCR - Q2 (Environmental Studies) / **CiteScore - Q1** (Geography, Planning and Development)
1.2.	Daugaviete, M.; Makovskis, K.; Lazdins, A.; Lazdina, D. Suitability of Fast-Growing Tree Species (*Salix spp., Populus spp., Alnus spp.*) for the Establishment of Economic Agroforestry Zones for Biomass Energy in the Baltic Sea Region. Sustainability 2022, 14, 16564. https://doi.org/10.3390/su142416564	10.12.2022	1,3,5	JCR - Q2 (Environmental Studies) / **CiteScore - Q1** (Geography, Planning and Development)
1.3.	Petaja, G.; Ancāns, R.; Bārdule, A.; Spalva, G.; Meļņiks, R.N.; Purviņa, D.; Lazdiņš, A. Carbon Dioxide, Methane and Nitrous Oxide Fluxes from Tree Stems in Silver Birch and Black Alder Stands with Drained and Naturally Wet	7.03.2023	1,2	JCR - Q1 (Forestry) / **CiteScore - Q1** (Forestry)

	Peat Soils. Forests 2023, 14, 521. https://doi.org/10.3390/f14030521			
1.4.	Bertins, M.; Paiste, P.; Makovskis, K.; Ansone-Bertina, L.; Busa, L.; Lazdina, D.; Lazdins, A.; Kirsimäe, K.; Klavins, M.; Viksna, A. Impact of Wood Ash and Sewage Sludge on Elemental Content in Hybrid Alder Clone. *Sustainability* **2023**, *15*, 7242. https://doi.org/10.3390/su15097242	26.04.2023	5	JCR - Q2 (Environmental Studies) / **CiteScore - Q1** (Geography, Planning and Development)
1.5.	Petaja, G.; Bārdule, A.; Zalmanis, J.; Lazdiņa, D.; Daugaviete, M.; Skranda, I.; Zvaigzne, Z.A.; Purviņa, D. Changes in Organic Carbon Stock in Soil and Whole Tree Biomass in Afforested Areas in Latvia. Plants 2023, 12, 2264. https://doi.org/10.3390/plants1212226	9.06. 2023	2,4,5	JCR - Q1 (*Plant Sciences*) / **CiteScore - Q1** (*Plant Science*)
	Original scientific articles published in magazines or conference proceedings included in the Web of Science or SCOPUS (A or B) database			**Expected: 2**
2.1.	Petaja G., Krumsteds L., Zvaigzne Z. Short term impact of fertilization on ground vegetation in deciduous forest stands and tree plantation, Conference proceedings Research for Rural Development Rural Development 2022, 37, pp. DOI: 10.22616/rrd.28.2022.010. Scopus	05.2022	1,4	
2.2.	Štāls, T.A.; Bārdule, A.; Dūmiņš, K.; Makovskis, K.; Lazdiņa, D. Remote-Sensed Tree Crown Diameter as a Predictor of Stem Diameter and Above-Ground Biomass in *Betula pendula* Roth and *Populus tremuloides* Michx. × *Populus tremula* L. Plantations. Land 2023, 12, 2006. https://doi.org/10.3390/land12112006	2.11.2023	5	JCR - Q2 (Environmental Studies) / CiteScore - Q2 (Nature and Landscape Conservation)
2.3.	Bārdulis, A.; Purviņa, D.; Makovskis, K.; Bārdule, A.; Lazdiņa, D. Soil-to-Atmosphere GHG Fluxes in Hemiboreal Deciduous Tree and Willow Coppice Based Agroforestry Systems with Mineral Soil. Land 2023, 12, 715. https://doi.org/10.3390/land12030715	21.03.2023	2	JCR - Q2 (Environmental Studies) / CiteScore - Q2 (Nature and Landscape Conservation)
2.4.	Forestry studies	Submitted	4	1
				Total: 4
				Grand total
		Submitted		**1**
		Published		**8**
		Total		**9**