https://doi.org/10.17221/75/2023-JFS

Administrative system of afforestation in the Czech Republic: A long journey to a new forest

Martin Baláš[1], *Josef Gallo*[1]*, *Marcin Czacharowski*[2], *Michal Pástor*[3], *Jaroslav Jankovič*[3], *Igor Štefančík*[3], *Ivan Kuneš*[1], *Hubert Hasenauer*[4]

[1]*Department of Silviculture, Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Prague, Prague, Czech Republic*
[2]*Department of Silviculture, Warsaw University of Life Sciences (SGGW), Warsaw, Poland*
[3]*Department of Silviculture and Forest Production, National Forest Centre – Forest Research Institute in Zvolen, Zvolen, Slovakia*
[4]*Institute of Silviculture, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria*

**Corresponding author: gallo@fld.czu.cz*

Electronic Supplementary Material (ESM)

The authors are fully responsible for both the content and the formal aspects of the Electronic Supplementary Material. No editorial adjustments were made.

https://doi.org/10.17221/75/2023-JFS

Appendix I. Calculation of the withdrawal fee

Legislative context of withdrawal fee. The fee for the withdrawal of the land plot from agricultural land resources is calculated according to the scheme resulting from Act No. 334/1992 Coll. Annex, part D. The amount is the result of the following values:

(*i*) ecological weight of the negatively affected environmental factor (it usually reaches values of 5–20, applies especially in the territory of national parks and 'protected landscape areas', otherwise the coefficient does not apply (Act No. 334/1992 Coll. Annex, part B);

(*ii*) coefficient according to the protection class (*I*: the best soils to *V*: the worst fertility) of agricultural land resources (Act No. 334/1992 Coll. Annex, Part D, Paragraph 4);

(*iii*) basic price of land according to 'Evaluated soil ecological units' (Regulation No. 441/2013 Coll. Annex No. 4).

The basic price for the particular Evaluated soil ecological units (ESEU) is determined according to Regulation No. 441/2013 Coll. Annex No. 4.

ESEU is a 4-digit number indicating the properties of the soil (climate, slope, exposure, stoniness, depth), i.e. the quality (fertility) of the soil and the resulting basic price. In our case, ESEU 83551 means: climate region 8 – mild cool, humid; main soil unit 35 – Dystric Cambisol; slope and exposure 5 – moderate slope, north exposure; stoniness and soil depth 1 – slight stoniness, depth > 30 cm. Details of the composition of the ESEU number are given in Regulation No. 227/2018 Coll.

The categorisation of particular ESEU into 'protection classes' is carried out in accordance with the Annex to Regulation No. 48/2011 Coll. The descriptive data of the cadastre contains, *inter alia*, data for tax purposes (Act No. 265/2013 Coll. § 4 par. 1 letter b), i.e. also the data of ESEU, as determined in Regulation No. 357/2013 Coll. § 24 par. 3 letter a). Therefore, ESEU for a given land is determined from the cadastre.

The fee for land withdrawal from the agricultural land resources is not determined for newly afforested lands in protection class *IV* and *V* (Act No. 334/1992 Coll. § 11a par. 1 letter h). Further, the fee is not determined for the land in class *III* in case the existing forest (e.g. a succession area or afforestation in the distant past) grows on the agricultural land and there is an effort to converse the land to the forest land resources (Act No. 334/1992 Coll. § 11a par. 1 letter m). The fee is not paid, for example, if it concerns the withdrawal of the implementation of common facilities within the complex land management – Act No. 334/1992 Coll. § 11a paragraph 1 letter p).

Examples of fee calculation. The land parcel belongs to ESEU 30511 (i.e. protection class *III*). The basic price is 0.44 EUR·m^{-2} (10.64 CZK·m^{-2}), and the coefficient (according to the protection class) has a value of 4. The fee is 1.77 EUR·m^{-2} (42.56 CZK·m^{-2}), i.e. 17 655 EUR·ha^{-1} (425 600 CZK·ha^{-1}).

The land parcel is included in ESEU 00100 (protection class *I*). The basic price is following: 0.70 EUR·m^{-2} (16.77 CZK·m^{-2}), coefficient 9. The fee is following: 6.26 EUR·m^{-2} (150.93 CZK·m^{-2}), i.e. 62 608 EUR·ha^{-1} (1.5093 million CZK·ha^{-1}).

In our case, the land parcel has ESEU 83551 (protection class *IV*). The basic price is 0.10 EUR·m^{-2} (2.48 CZK·m^{-2}), coefficient 3. The fee should be 0.31 EUR·m^{-2} (7.44 CZK·m^{-2}), i.e. 3 086 EUR·ha^{-1} (74 400 CZK·ha^{-1}). However, the fee for the purpose of afforestation (according to Act No. 334/1992 Coll. § 11a par. 1 letter h) is not assessed.

Appendix II. Periods to gain the documents

Table S1. Succession of documents in the administrative chain

Label	Document title	Application title	Issued by	Required supplements	Fee (CZK)*
A	copy of cadastral map	orally, personally	SALSC or CzechPoint – i.e. Post Office	–	100
B	extract from the real estate cadastre (REC)	orally, personally	SALSC or CzechPoint – i.e. Post Office	–	100 + 50
B'	web preview of the REC (after the land-use change is done)	web form	SALSC	–	0

https://doi.org/10.17221/75/2023-JFS

Table S1. To be continued

Label	Document title	Application title	Issued by	Required supplements	Fee (CZK)*
C	forest site type classification	application for forest site type classification of non-forest plot destined to afforestation (paper form)	FMI	A, B	0 + postage
D	power of attorney (in case of the representation)	orally	landowner	–	0
E	preliminary statement of the municipal authority	application for a decision of preliminary statement to afforestation (paper form)	Municipal Authority (Mistrovice)	A, B	0 + postage
F	afforestation project	documentation for afforestation project processing (personal use document)	Forest Manager (State Forests Enterprise)	(A, B – proof sheet), C, (D)	0 + postage
G	declaration for forest land – preliminary statement of the state forestry authority	application to issue preliminary statement to plot afforestation (paper form)	MEP (Žamberk MA, Department of the Environment and Agriculture – as the state forestry authority)	A	0 + postage
H	binding assessment on land parcel withdrawal from the agricultural land resources (ALR)	application for a decision of binding assessment on land parcel withdrawal from the ALR – plot afforestation (personal use document)	Regional Office (Pardubice Region, Department of the Environment and Agriculture – as ALR Protection body	A, B, C, (D), E, F, G	0 + postage
I	coordinated binding assessment	application to issue coordinated binding assessment (paper form + cover letter)	MEP (Žamberk Municipal Authority)	A, B, C, (D), E, F, G, H	0 + postage
J	statement on the existence of distribution grids	applications to release statement on the existence of grids (web forms on websites of respective companies)	intended companies of our case: GridServices, s.r.o. (gas pipe), Cetin, a.s. – data nets (electronic communication facilities), Telco Pro Services, a.s. (communication line), ČEZ Distribuce, a.s. (distribution services), Water Supply and Sewerage Jablonné nad Orlicí, a.s. (pipelines)	–	0

https://doi.org/10.17221/75/2023-JFS

Table S1. To be continued

Label	Document title	Application title	Issued by	Required supplements	Fee (CZK)*
K	statement of the State Road Authority to plot afforestation	application for statement to land-use change on plots neighbouring to the road of 1st category (personal use document)	Regional Office (Pardubice Region, Department of Transport and Road Management; Road Management and Traffic Availability Section – as State Road Authority and Special Civil Office for 1st category roads	A, B, (D), F, J	0 + postage
L	field survey sketch for plot division – verified concept	orally, cover letter via e-mail	private company (Geodet.ka s.r.o., Žamberk)	–	5 600
M	decision on plot division and decision on land-use change	application for decision to divide the land parcel in planning permission proceedings and application for decision on land-use change in planning permission proceedings (joined procedure) + cover letter	building authority (Jablonné nad Orlicí Municipal Authority – as authorised municipal authority	A, B, C, (D), E, F, G, H, I, J, K, L	1 000 3 000
N	survey sketch for plot division – confirmed by Cadastral Office	orally (the confirmation is provided by the geodetic company)	private company (Geodet.ka s.r.o., Žamberk)	M	
O	decision on declaration of land parcel for land destined to fulfil forest functions (LDFFF)	application for declaration of land parcel for LDFFF (paper form)	MEP (Žamberk MA, Department of the Environment and Agriculture – as state forestry authority	A, B, C, (D), F, H, I, (N), M	
P	execution of data changes in Cadastral Office (no document)	declaration of plot data changes for enrolment into real estate cadastre (paper form)	Cadastral Office for Pardubice Region (Cadastral workplace Ústí nad Orlicí)	M, (N), O	0 + postage, verified signature (CZK 30), verified copy (CZK 30 × number of pages: 13)
Q	real estate tax change	partial tax return	Tax Office for Pardubice Region (Žamberk workplace)	B', M, O	0 + postage
Total	–	–	–	–	CZK 10 513

Total costs: EUR 436.10 (CZK 10 513); postage costs: EUR 1.12 (CZK 27);
*CZK/EUR = 24.107; ALR – agricultural land resources; FMI – Forest Management Institute (ÚHÚL); LDFFF – land parcel for land destined to fulfil forest functions; MA – municipal authority (MÚ); MEP –municipality with extended powers (ORP); REC – real estate cadastre; SALSC – State Administration of Land Surveying and Cadastre (ČÚZK)

https://doi.org/10.17221/75/2023-JFS

Table S2. An overview of the periods to obtain the individual documents

Label	Reached period (days)	Period limit based on legislation (days)	Expected period (days)	Document preparation (h)
A, B	to wait	–	0	2
B'	to wait	–	0	1
C	**26**	30 (only between April 1 and October 31)	**30**	2
D	to wait	to wait	0	2
E	3	30	30	1
F	**105**	–	**30**	23
G	27	30	30	3
H	**5**	30	**30**	10
I	**82**	30 (60)	**60**	8
J (1–*n*)	2, 10, 2, 15	–	30	12
K	10	30	30	8
L	**12**	–	**30**	5
M	**89**	90 + 10 + 15 = 105	**105**	50
N	**155**	–	**90**	5
O	**75**	30 + 10 + 15	**55**	5
P	**5**	30	**30**	6
Q	(after 'P', until January 31 of the next year)	–	–	8
Critical path (days)	554	–	460	–

Bold – values belonging to the critical path

Appendix III. Forest site type classification in the Czech Republic

Forest site classification deals with the classification of forests according to habitat conditions. It divides forests into segments with similar growth conditions. According to the terminology used in Viewegh (2020), the typological unit is a 'forest site type complex – FSTC' or finer unit 'forest site type – FST'. Similar sets of forest types are grouped into 'target management units – TMU', for which management rules are prescribed, especially recommended tree composition. Compliance with the species composition is checked if the owner applies for subsidies for afforestation of agricultural land (according to Government Regulation No. 185/2015 Coll.).

The 'classification of land into sets of forest types and target management sets' is performed by the Forest Management Institute (FMI) on the basis of a written application, delivered to the locally relevant branch [local affiliation can be found on the map (FMI 2024a)]. FMI provides a uniform forest site classification system of forests in the Czech Republic, including the classification of non-forest land intended for afforestation. The application is submitted on the form available on the institutional website (FMI 2024b).

Appendix IV. Examples of protection zones for distribution grids

The width of the zone is 50 m from the axis of the adjacent traffic lane (i.e. at a traffic lane width of 3 m, the zone reaches 48.5 m from the edge of the lane). The protection zone restricts especially the construction of buildings or lays down special requirements (Act No. 13/1997 Coll. § 31), and also the zone limits the planting of trees so as not to disturb the view in the inner site of the curve and in the viewing zones around the intersections. This does not apply to existing forest stands (Act No. 13/1997 Coll. § 33). However, when afforesting the adjacent land, the authority or the owner of the road may set certain conditions. Specific conditions for tree planting applied

https://doi.org/10.17221/75/2023-JFS

in the statement of the Regional Office were taken from ČSN 73 6101 (Article 13.7.3.). The specific requirements of the Department of Transport of the Regional Office and the RMD (Road and Motorway Directorate – owner) were not identical. While the office requires a minimum distance of mature trees of 5 m from the edge of the road, the owner requires a distance of future tall trees of at least 10 m from the property border, i.e. specifically about 15 m from the roadside. The belt between the property border and the distance of 10 m from the border is requested by the road owner to plant low trees only.

For underground lines, the width of the protection zone on each side is given. For aboveground power lines, the width from the adjacent outer conductor is given: low-pressure or medium-pressure gas pipeline – 1 m; high-pressure gas pipeline – 4 m; aboveground electric lines of the voltage up to 35 kV incl. – 7 m; 35–110 kV incl. – 12 m; 110–220 kV incl. – 15 m; 220–400 kV incl. – 20 m; underground electric lines up to 110 kV incl. – 1 m; above 110 kV – 3 m; water supply and sewerage at pipes up to diameter 500 mm – 1.5 m; for pipes over 500 mm – 2.5 m. The width of the protection zones and the overview of restrictions in them result from the industry standard (ČSN 73 6005 – Spatial arrangement of technical equipment networks).

Appendix V. Real estate tax calculation

In general. The determined tax is paid once for the tax period, which is 1 calendar year (Act No. 338/1992 Coll. § 12c), always until May 31 (Act No. 338/1992 Coll. § 15 letter 2). The tax is determined for the given tax period according to the situation as of January 1 (Act No. 338/1992 Coll. § 13b). The partial tax return is filed by January 31 of the year following the year in which the circumstances decisive for determining the tax changed (Act No. 338/1992 Coll. § 13a), i.e. in our case after the decision to declare forest land came into force. The proportion of the amount of taxes before and after afforestation is always individual (original ESEU vs. newly determined set of forest site types).

The original amount of tax calculation for our case (before the land-use change). According to Act No. 338/1992 Coll. § 5 par. 1, the real estate tax base for the permanent grassland land-use mode is the average price of land, listed in the Annex to Regulation No. 298/2014 Coll. [specifically for the Mistrovice municipality 0.10 EUR·m^{-2} (2.39 CZK·m^{-2})]. The tax rate for permanent grassland land parcel is 0.25% of the above-mentioned tax base (Act No. 338/1992 Coll. § 6 par. 1 letter b).

Specifically: 2.39 × 18 568 m^2 (land parcel area) = EUR 1 841 (CZK 44 378) – tax base.

CZK 44 378 (tax base) × 0.0025 (tax rate) = EUR 4.60 (CZK 111) – tax for the original land-use mode – permanent grassland.

The new amount of tax calculation (after the land-use change). According to Act No. 338/1992 Coll. § 5 par. 2, for commercial forest land, the tax base can be defined in two ways: (a) as the price of the land determined in accordance with Regulation No. 441/2013 Coll., as amended on January 1 of the tax period; or (b) the base price can be also defined as the product of the land parcel area in m^2 and the amount of EUR 0.16 (CZK 3.80). The tax rate for commercial forests is 0.25% of the tax base (Act No. 338/1992 Coll. § 6 par. 1 letter b).

Ad (a): Calculation according to the actual price: The basic price is 0.26 EUR·m^{-2} [6.37 CZK·m^{-2} (Regulation No. 441/2013 Coll. Annex No. 6)]. The tax base is therefore CZK 118 279 (= 6.37 × 18 568 m^2), i.e. EUR 4 906. The tax rate is 0.25% of the tax base, i.e. EUR 12.28 (CZK 296). This calculation would be used in the case of a forest habitat with a very low site index (and thus the price) or in the case of applying deductions from the basic price, e.g. air pollution zone, water protection zone, land due to terrain obstacles, protected area etc. (Regulation No. 441/2013 Coll. Annex 7).

Ad (b): If the deductions are not applied (like in our case), the calculation outgoing from the 'universal' base price of 0.16 EUR·m^{-2} (3.80 CZK·m^{-2}) is used. Specifically, the tax base is CZK 70 559 (EUR 2 927) (= 3.8 × 18 568 m^2). The tax rate is, therefore, CZK 177 (= 70 559 × 0.0025), i.e. EUR 7.34.

To calculate the tax, the lower amount calculated according to (a) or (b) method is used. Calculations are always rounded up to the whole CZK or m^2 (Act No. 338/1992 Coll. § 12a). The amount of the tax calculated in this way is further multiplied by the local coefficient, which is set down by the relevant municipality in a local decree (Act No. 338/1992 Coll. § 12). The coefficient is always an integer in the range 1–5. In our case (Mistrovice municipality), the coefficient is not announced, i.e. it reaches the value 1 (GFD 2024).

The costs related to administration consist mainly of administrative work. The costs of direct fees

https://doi.org/10.17221/75/2023-JFS

Appendix VI. Economic calculation

Table S3. Overview of the costs spent on the afforestation in our case

Item	Unit price	Number of units	Price (CZK)	Price (EUR)
Direct costs				
Soil preparation	–	–	2 200	91
Planting stock	–	–	51 990	2 157
Mesh and nails	–	–	16 300	676
Fuel for earth auger	25 CZK·L^{-1}	30 L	750	31
Earth auger depreciation	–	–	4 000	166
Spare earth auger drill knives	–	–	1 200	50
Travel expenses to offices	6 CZK·km^{-1}	210 km	1 260	52
Transport of seedlings	6 CZK·km^{-1}	540 km	3 240	134
Subtotal	–	–	80 940 (36%)	3 358
Self-help work				
Planting stock grown by self-help	7 CZK·pc^{-1}	4 000 pcs	28 000	1 161
Wooden poles for fencing made by self-help	100 CZK·pc^{-1}	187 pcs	18 700	176
Planting of trees	1 500 CZK·day^{-1}	23 days	34 500	1 431
Fence construction	1 500 CZK·day^{-1}	8 days	12 000	498
Weeding 1st year	1 500 CZK·day^{-1}	4 days	6 000	249
Subtotal	–	–	99 200 (45%)	4 115
Administrative costs				
Planning permission proceedings fee	–	–	4 000	166
Survey sketch			6 000	249
Geodetic landmarks	110 CZK·pc^{-1}	15	1 650	68
Afforestation project	–	–	300	12
Fees for extracts from cadastre, verification of copies of documents and signatures	–	–	510	21
Postage	–	–	243	10
Phone	–	–	200	8
Subtotal	–	–	12 903 (6%)	535
Other costs related to administration				
Preparation of applications	150 CZK·hour^{-1}	151 hours	22 650	940
Additional search in legislation (beyond the preparation of applications)	150 CZK·hour^{-1}	30 hours	3 000	124
Additional consultation with authorities	150 CZK·hour^{-1}	10 hours	1 500	62
Field errand with geodesists	150 CZK·hour^{-1}	3 hours	450	19
Documents management (copying, sorting, archiving)	150 CZK·hour^{-1}	8 hours	1 200	50
Small office supplies	–	–	500	21
Subtotal	–	–	29 300 (13%)	1 215
Total	–	–	222 343 (100%)	9 223
Total costs per 1 ha (afforested area is approx. 1.57 ha)	–	–	141 620	5 875

https://doi.org/10.17221/75/2023-JFS

are rather marginal. If the area of several hectares is considered, the afforestation-related administration consumes a comparable amount of time as the afforestation work itself and the administrative costs expressed in money reach an amount comparable to a price for tree planting.

Notes: The financial expression of self-help works, field and administrative is following: 6.22 EUR·hour^{-1} (150 CZK·hour^{-1}) and 62.22 EUR·day^{-1} (1 500 CZK·day^{-1}). The exchange rate is following: CZK/EUR 24.107 (EU 2023).

Appendix VII. Subsidies for afforestation

Brief notes on the administration of subsidies: In principle, it is first necessary to submit a notification of entry into the grant program and then the actual application for a subsidy. The application shall be accompanied in particular by a decision on the declaration of forest land, afforestation project, extract from LPIS (with change to culture L), forest typological classification, proof of origin of planting stock, extract from real estate cadastre, planning permission, decision on withdrawal from agricultural land resources. The conditions for obtaining a subsidy are regulated by Government Regulation No. 185/2015 Coll.

Subsidies can be obtained:

– for the establishment of a forest stand (the rate varies according to the tree species, specifically 3 035 or 2 100 EUR·ha^{-1}, i.e. 73 854 or 51 101 CZK·ha^{-1}; the subsidy is provided only for tree species listed in Government Regulation No. 185/2015 Coll. Annex);
– for the care of the forest stand (for a period of up to 5 years from the establishment of the stand; year rate 669 or 298 EUR·ha^{-1} depending on the localisation, i.e. 16 279 or 7 252 CZK·ha^{-1});
– for the cessation of agricultural production (for up to 10 years; year rate 448 or 161 EUR·ha^{-1}, i.e. 10 902 or 3 918 CZK·ha^{-1}; only if the previous crop was arable land or permanent grassland).

Note: For the purpose of this Government Regulation No. 185/2015 Coll. (according to § 7 par. 5) the accounting rate for CZK to EUR conversion valid in December of the previous year is used. The conversion rate in December 2022 was CZK/EUR 24.334 (EC 2023).