



Input – Output evalvacija slovenske gozdno lesne verige - priložnosti za listavce

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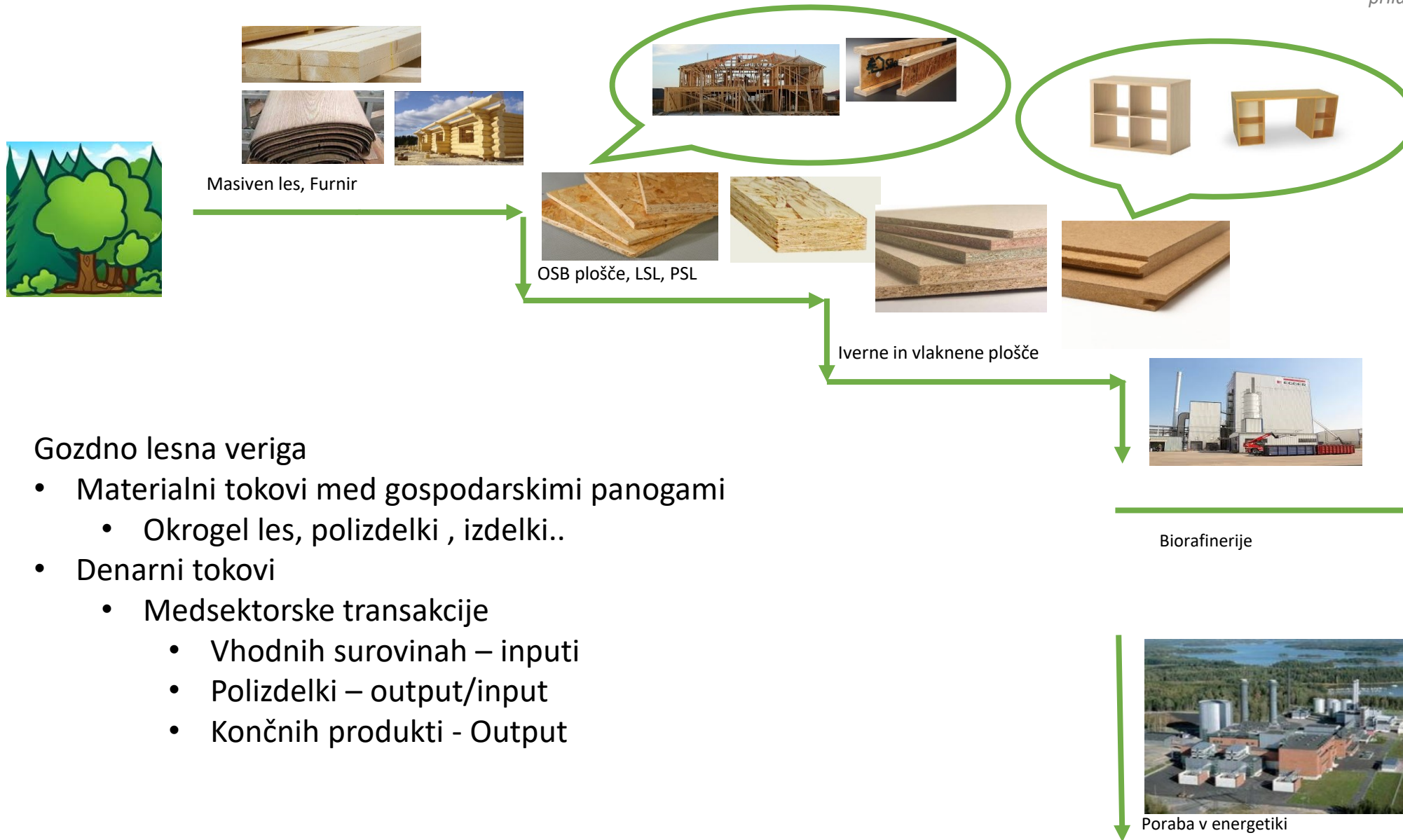
Uvod

**Material in
metode**

Rezultati

Sklepi





Gozdno lesna veriga

- Materialni tokovi med gospodarskimi panogami
 - Okrogel les, polizdelki , izdelki..
- Denarni tokovi
 - Medsektorske transakcije
 - Vhodnih surovinah – inputi
 - Polizdelki – output/input
 - Končnih produkti - Output

Uvod

**Material in
metode**

Rezultati

Sklepi



Materiali in metode – Input-output tabela

Končna poraba

Potrošnja
(gospodinka ali javna) Investicije, zaloge

Output

Input

Gradniki
dodane
vrednosti

		PRODUCERS AS CONSUMERS								FINAL DEMAND			
		Agric.	Mining	Const.	Manuf.	Trade	Transp.	Services	Other	Personal Consumption Expenditures	Gross Private Domestic Investment	Govt. Purchases of Goods & Services	Net Exports of Goods & Services
PRODUCERS	Agriculture												
	Mining												
	Construction												
	Manufacturing												
	Trade												
	Transportation												
	Services												
	Other Industry												
VALUE ADDED	Employees	Employee compensation								GROSS DOMESTIC PRODUCT			
	Business Owners and Capital	Profit-type income and capital consumption allowances											
	Government	Indirect business taxes											

Materiali in metode – Osnove raziskav za Slovenijo

Output

65 x 65 sektorjev

Končna poraba

Input

Gozdno lesna veriga



- Gozdarstvo (A2)
- Lesna industrija (C16)
- Papirna industrija (C17)
- Pohištvena industrija (C31)
- Kemikalije iz lesa (C21)
- Energetika (D35)

$$TS = \sum Input_{ij} + CE + IMP + OPI$$

CE – Sredstva za zaposlene
 IMP – Uvoz
 OPI – Ostali primarni inputi

Materiali in metode – Input-output multiplikatorji

Multiplikator za sektor „j“ je opredeljen kot skupna vrednost v vseh sektorjih gospodarstva, ki je potrebna, da se zadovolji končno povpraševanje v vrednosti ene enote (1 mio €) po proizvodnji sektorja „j“.

- Multiplikator vrednosti proizvodnje (output multiplikator)
- Multiplikator vrednosti dohodkov (Income multipliktor)
- Multiplikator števila delovnih mest (Employment multiplikator)



	Output			Employment			Income			Δ FD	Output			Employment			Income		
	OM	DOE	IOE	TEE	DEF	IEF	TIE	DIE	IIE		OM	DOE	IOE	TEE	DEF	IEF	TIE	DIE	IIE
Products of forestry, logging and related services	1.81	1.34	0.47	28.12	17.34	10.78	0.23	0.09	0.14	15.00	27.1	20.1	7.0	422	260	162	3.4	1.3	2.1
Wood processing	2.61	1.29	1.32	33.99	14.76	19.23	0.52	0.19	0.33	15.00	39.2	19.4	19.9	510	221	288	7.8	2.9	4.9
Paper and paper products	3.02	1.58	1.44	24.15	5.49	18.66	0.55	0.13	0.41	15.00	45.4	23.7	21.7	362	82	280	8.2	2.0	6.2
Chemicals from wood	2.33	1.00	1.33	22.99	7.61	15.38	0.51	0.22	0.29	15.00	35.0	15.0	20.0	345	114	231	7.7	3.3	4.4
Furniture and other manufactured goods	2.45	1.04	1.41	31.69	13.84	17.85	0.58	0.24	0.34	15.00	36.8	15.6	21.2	475	208	268	8.7	3.5	5.1
Electricity and heat from wood	2.41	1.00	1.41	24.22	5.96	18.27	0.41	0.16	0.25	15.00	36.1	15.0	21.1	363	89	274	6.2	2.4	3.8

Materiali in metode – proizvodne funkcije in scenarijska analiza

Srečanja ekspertnih skupin

- Evalvacija osnovnih podatkov (2015)
- Pretres možnosti razvoja
- Definicija proizvodne funkcije v prihodnje

5 scenarijev razvoja gozdno lesne verige v Sloveniji:

- Scenarij A - Osnovni scenarij
- Scenarij B - Scenarij s povečano učinkovitostjo predelave lesa
- Scenarij C - Scenarij s povečano energetsko rabo lesne biomase
- Scenarij D - Scenarij tehnološko in kapitalno intenzivnega prestrukturiranja
- Scenarij D+ - Scenarij tehnološko in kapitalno intenzivnega prestrukturiranja

Scenarijska analiza

- Input-output multiplikatorji
- Proizvodne funkcije gozdno lesne verige
- Vrednost proizvodnje, dohodkov, števila zaposlenih pod pogojem 100 mio € končnega povpraševanja

	Wood proc. SLOVENIA		Wood proc. AUSTRIA	
Products of forestry, logging and related services	74.16	7.6%	1,138.6	12.7%
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	128	13.1%	2,114	23.6%
Paper and paper products	2.92	0.3%	168.34	1.9%
Coke and refined petroleum products	7.4	0.8%	16.14	0.2%
Chemicals and chemical products	19.83	2.0%	126.12	1.4%
Other non-metallic mineral products	8	0.8%	61	0.7%
Basic metals	21	2.1%	20	0.2%
Fabricated metal products, except machinery and equipment	5.42	0.6%	77.49	0.9%
Electrical equipment	1.54	0.2%	0.	0.0%
Machinery and equipment n.e.c.	2.07	0.2%	33.64	0.4%
Motor vehicles, trailers and semi-trailers	5.11	0.5%	0.	0.0%
Furniture and other manufactured goods	2.05	0.2%	0.01	0.0%
Repair and installation services of machinery and equipment	2.96	0.3%	33.38	0.4%
Electricity, gas, steam and air conditioning	11.81	1.2%	168.69	1.9%
Constructions and construction works	5.86	0.6%	148.16	1.7%
Wholesale trade services, except of motor vehicles and motorcycles	36.88	3.8%	509.16	5.7%
Retail trade services, except of motor vehicles and motorcycles	6.99	0.7%	4.24	0.0%
Land transport services and transport services via pipelines	11.77	1.2%	333.43	3.7%
Warehousing and support services for transportation	1.63	0.2%	130.7	1.5%
Financial services, except insurance and pension funding	3.96	0.4%	94.91	1.1%
Real estate services excluding imputed rents	4.82	0.5%	39.03	0.4%
Legal and accounting services; services of head offices; management consultancy services	3.02	0.3%	132.42	1.5%
Architectural and engineering services; technical testing and analysis services	4	0.4%	15	0.2%
Advertising and market research services	2	0.2%	33	0.4%
Other professional, scientific and technical services and veterinary services	2.7	0.3%	2.96	0.0%
Rental and leasing services	7.33	0.8%	14.71	0.2%
Total	394.83	40.5%	5,685.82	63.5%
Compensation of employees	110.86	11.4%	1,051.19	11.7%
Imports of goods and services	396.76	40.7%	1,551.69	17.3%
Other primary inputs	71.36	7.3%	663.75	7.4%
Total supply at basic prices	973.81	100.0%	8,952.46	100.0%

Uvod

Material in
metode

Rezultati

Sklepi



Rezultati Proizvodne funkcije Lesarstva - panoga C16

- Doprinos primarnih virov
- Ustvarjanje dodane vrednosti znotraj panoge
- Ustvarjena proizvodnja znotraj nacionalnega gospodarstva
- Vrednost uvoza blaga in storitev
- Absolutne vrednosti proizvodnje panog

	Wood proc. SLOVENIA		Wood proc. AUSTRIA		Wood proc. GERMANY		Wood proc. SWEDEN	
Products of forestry, logging and related services	74.16	7.6%	1,138.6	12.7%	2,668.	8.1%	2,741.47	26.0%
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	128	13.1%	2,114	23.6%	6,537	19.9%	1,404	13.3%
Paper and paper products	2.92	0.3%	168.34	1.9%	110.	0.3%	16.46	0.2%
Coke and refined petroleum products	7.4	0.8%	16.14	0.2%	90.	0.3%	42.76	0.4%
Chemicals and chemical products	19.83	2.0%	126.12	1.4%	1,361.	4.1%	86.16	0.8%
Other non-metallic mineral products	8	0.8%	61	0.7%	905	2.8%	158	1.5%
Basic metals	21	2.1%	20	0.2%	51	0.2%	49	0.5%
Fabricated metal products, except machinery and equipment	5.42	0.6%	77.49	0.9%	168.	0.5%	112.35	1.1%
Electrical equipment	1.54	0.2%	0.	0.0%	1.	0.0%	44.26	0.4%
Machinery and equipment n.e.c.	2.07	0.2%	33.64	0.4%	0.	0.0%	36.77	0.3%
Motor vehicles, trailers and semi-trailers	5.11	0.5%	0.	0.0%	0.	0.0%	0.11	0.0%
Furniture and other manufactured goods	2.05	0.2%	0.01	0.0%	118.	0.4%	7.48	0.1%
Repair and installation services of machinery and equipment	2.96	0.3%	33.38	0.4%	380.	1.2%	137.15	1.3%
Electricity, gas, steam and air conditioning	11.81	1.2%	168.69	1.9%	354.	1.1%	200.55	1.9%
Constructions and construction works	5.86	0.6%	148.16	1.7%	180.	0.5%	56.12	0.5%
Wholesale trade services, except of motor vehicles and motorcycles	36.88	3.8%	509.16	5.7%	1,495.	4.6%	402.69	3.8%
Retail trade services, except of motor vehicles and motorcycles	6.99	0.7%	4.24	0.0%	729.	2.2%	17.	0.2%
Land transport services and transport services via pipelines	11.77	1.2%	333.43	3.7%	518.	1.6%	115.24	1.1%
Warehousing and support services for transportation	1.63	0.2%	130.7	1.5%	166.	0.5%	264.15	2.5%
Financial services, except insurance and pension funding	3.96	0.4%	94.91	1.1%	240.	0.7%	41.8	0.4%
Real estate services excluding imputed rents	4.82	0.5%	39.03	0.4%	442.	1.3%	47.04	0.4%
Legal and accounting services; services of head offices; management consultancy services	3.02	0.3%	132.42	1.5%	177.	0.5%	125.93	1.2%
Architectural and engineering services; technical testing and analysis services	4	0.4%	15	0.2%	265	0.8%	43	0.4%
Advertising and market research services	2	0.2%	33	0.4%	32	0.1%	17	0.2%
Other professional, scientific and technical services and veterinary services	2.7	0.3%	2.96	0.0%	17.	0.1%	17.64	0.2%
Rental and leasing services	7.33	0.8%	14.71	0.2%	427.	1.3%	47.04	0.4%
Total	394.83	40.5%	5,685.82	63.5%	19,060.	58.1%	6,833.09	64.9%
Compensation of employees	110.86	11.4%	1,051.19	11.7%	4,692.	14.3%	1,280.35	12.2%
Imports of goods and services	396.76	40.7%	1,551.69	17.3%	6,848.	20.9%	1,281.31	12.2%
Other primary inputs	71.36	7.3%	663.75	7.4%	2,208.00	6.7%	1,137.21	10.8%
Total supply at basic prices	973.81	100.0%	8,952.46	100.0%	32,808.	100.0%	10,531.96	100.0%

Rezultati Proizvodne funkcije papirništva - panoga C17

- Doprinos primarnih virov
- Ustvarjanje dodane vrednosti znotraj panoge
- Ustvarjena proizvodnja znotraj nacionalnega gospodarstva
- Vrednost uvoza blaga in storitev
- Absolutne vrednosti proizvodnje panog

	Paper SLOVENIA		Paper AUSTRIA		Paper GERMANY		Paper SWEDEN	
Products of forestry, logging and related services	12.89	0.9%	406.83	4.7%	98.	0.2%	1,794.65	13.0%
Mining and quarrying	28.42	2.0%	70.49	0.8%	354.	0.7%	96.64	0.7%
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	10	0.7%	44	0.5%	258	0.5%	450	3.3%
Paper and paper products	285.78	20.5%	1,232.41	14.4%	11,583.	22.3%	1,448.72	10.5%
Chemicals and chemical products	65.8	4.7%	341.76	4.0%	1,294.	2.5%	709.82	5.2%
Rubber and plastic products	2.34	0.2%	48.5	0.6%	801.	1.5%	77.93	0.6%
Fabricated metal products, except machinery and equipment	4.76	0.3%	1.09	0.0%	31.	0.1%	23.84	0.2%
Machinery and equipment n.e.c.	4.82	0.3%	18.41	0.2%	73.	0.1%	70.45	0.5%
Repair and installation services of machinery and equipment	11.06	0.8%	76.35	0.9%	591.	1.1%	232.19	1.7%
Electricity, gas, steam and air conditioning	32.94	2.4%	313.	3.6%	1,491.	2.9%	507.24	3.7%
Sewerage services; sewage sludge; waste collection, treatment and disposal services; materials recovery services; remediation services and other waste management services	3.42	0.2%	299.5	3.5%	2,422.	4.7%	176.39	1.3%
Wholesale trade services, except of motor vehicles and motorcycles	47.32	3.4%	302.15	3.5%	1,287.	2.5%	405.47	2.9%
Retail trade services, except of motor vehicles and motorcycles	10.14	0.7%	0.84	0.0%	251.	0.5%	18.6	0.1%
Land transport services and transport services via pipelines	29.25	2.1%	314.63	3.7%	850.	1.6%	207.6	1.5%
Warehousing and support services for transportation	4.59	0.3%	102.75	1.2%	42.	0.1%	468.97	3.4%
Computer programming, consultancy and related services; information services	3.88	0.3%	24.89	0.3%	216.	0.4%	61.57	0.4%
Financial services, except insurance and pension funding	5.79	0.4%	73.01	0.9%	287.	0.6%	29.61	0.2%
Insurance, reinsurance and pension funding services, except compulsory social security	2.46	0.2%	12.21	0.1%	174.	0.3%	14.	0.1%
Legal and accounting services; services of head offices; management consultancy services	8.85	0.6%	103.84	1.2%	436.	0.8%	354.91	2.6%
Total	598.44	42.9%	4,188.12	48.8%	25,916.	49.9%	8,336.96	60.6%
Compensation of employees	105.43	7.6%	944.36	11.0%	6,213.	12.0%	1,480.79	10.8%
Imports of goods and services	610.64	43.8%	2,621.83	30.6%	16,049.	30.9%	1,821.27	13.2%
Other primary inputs	79.34	5.7%	823.31	9.6%	3,766.00	7.3%	2,116.10	15.4%
Total supply at basic prices	1,393.86	100.0%	8,577.62	100.0%	51,944.	100.0%	13,755.12	100.0%

Rezultati Proizvodne funkcije pohištvena industrija C31-32

- Doprinos primarnih virov
- Ustvarjanje dodane vrednosti znotraj panoge
- Ustvarjena proizvodnja znotraj nacionalnega gospodarstva
- Vrednost uvoza blaga in storitev
- Absolutne vrednosti proizvodnje panog

	Furniture SLOVENIA		Furniture AUSTRIA		Furniture GERMANY		Furniture SWEDEN	
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	141	10.1%	289	2.5%	2,481	2.9%	225	2.4%
Paper and paper products	8.46	0.6%	26.51	0.2%	379.	0.4%	56.44	0.6%
Coke and refined petroleum products	4.84	0.3%	5.04	0.0%	50.	0.1%	8.55	0.1%
Chemicals and chemical products	13.35	1.0%	142.12	1.2%	430.	0.5%	108.29	1.2%
Rubber and plastic products	31.17	2.2%	134.03	1.2%	1,210.	1.4%	131.92	1.4%
Other non-metallic mineral products	5	0.4%	29	0.3%	291	0.3%	32	0.3%
Basic metals	10	0.7%	1,137	9.9%	681	0.8%	176	1.9%
Fabricated metal products, except machinery and equipment	37.57	2.7%	236.57	2.1%	2,114.	2.4%	144.64	1.6%
Computer, electronic and optical products	5.59	0.4%	69.74	0.6%	1,567.	1.8%	81.78	0.9%
Electrical equipment	8.39	0.6%	50.53	0.4%	548.	0.6%	110.75	1.2%
Machinery and equipment n.e.c.	3.25	0.2%	33.77	0.3%	269.	0.3%	30.68	0.3%
Furniture and other manufactured goods	27.28	2.0%	604.37	5.3%	4,139.	4.8%	349.78	3.8%
Repair and installation services of machinery and equipment	4.16	0.3%	19.11	0.2%	315.	0.4%	30.79	0.3%
Electricity, gas, steam and air conditioning	10.3	0.7%	49.71	0.4%	259.	0.3%	29.93	0.3%
Wholesale trade services, except of motor vehicles and motorcycles	47.93	3.4%	301.33	2.6%	3,304.	3.8%	276.44	3.0%
Retail trade services, except of motor vehicles and motorcycles	12.45	0.9%	3.62	0.0%	1,087.	1.3%	11.65	0.1%
Land transport services and transport services via pipelines	13.24	0.9%	65.74	0.6%	664.	0.8%	34.64	0.4%
Accommodation and food services	2.6	0.2%	24.11	0.2%	44.	0.1%	38.06	0.4%
Computer programming, consultancy and related services; Information services	2.61	0.2%	19.42	0.2%	267.	0.3%	21.06	0.2%
Financial services, except insurance and pension funding	5.89	0.4%	77.07	0.7%	386.	0.4%	18.81	0.2%
Insurance, reinsurance and pension funding services, except compulsory social security	2.46	0.2%	10.32	0.1%	136.	0.2%	10.48	0.1%
Legal and accounting services; services of head offices; management consultancy services	8.29	0.6%	131.68	1.1%	415.	0.5%	141.86	1.5%
Architectural and engineering services; technical testing and analysis services	3	0.2%	29	0.3%	119	0.1%	15	0.2%
Other professional, scientific and technical services and veterinary services	4.17	0.3%	3.87	0.0%	750.	0.9%	8.12	0.1%
Employment services	12.93	0.9%	35.77	0.3%	492.	0.6%	30.25	0.3%
Security and investigation services; services to buildings and landscape; office administrative, office support and other business support services	4.85	0.3%	28.54	0.2%	582.	0.7%	34.64	0.4%
Total	450.31	32.3%	3,988.93	34.8%	27,160.	31.4%	2,658.19	28.6%
Compensation of employees	175.49	12.6%	1,399.87	12.2%	15,688.	18.2%	1,075.74	11.6%
Imports of goods and services	651.85	46.7%	5,268.94	46.0%	37,517.	43.4%	4,720.3	50.8%
Other primary inputs	117.60	8.4%	807.46	7.0%	6,070.00	7.0%	834.68	9.0%
Total supply at basic prices	1,395.25	100.0%	11,465.2	100.0%	86,435.	100.0%	9,288.91	100.0%

Rezultati

Proizvodne funkcije proizvodnje kemikalij iz lesa

- Manj kot 1% kemijske industrije v Sloveniji predstavljajo kemikalije iz lesa

	Chemicals SLO		Wood based chemicals 2015	
Products of forestry, logging and related services	0.	0.0%	3.12 €	18.1%
Mining and quarrying	29.55	0.9%	0.10 €	0.6%
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	8	0.2%	0.07 €	0.4%
Paper and paper products	5.47	0.2%	0.08 €	0.4%
Coke and refined petroleum products	8.76	0.3%	0.15 €	0.9%
Chemicals and chemical products	487.53	14.3%	0.90 €	5.2%
Fabricated metal products, except machinery and equipment	3.38	0.1%	0.05 €	0.3%
Computer, electronic and optical products	0.	0.0%	0.24 €	1.4%
Machinery and equipment n.e.c.	5.62	0.2%	0.13 €	0.8%
Motor vehicles, trailers and semi-trailers	1.35	0.0%	0.07 €	0.4%
Furniture and other manufactured goods	1.42	0.0%	0.01 €	0.1%
Repair and installation services of machinery and equipment	6.63	0.2%	0.90 €	5.2%
Electricity, gas, steam and air conditioning	18.13	0.5%	0.39 €	2.2%
Sewerage services; sewage sludge; waste collection, treatment and disposal services; materials recovery services; remediation services and other waste management services	5.02	0.1%	0.05 €	0.3%
Constructions and construction works	0.	0.0%	0.15 €	0.9%
Wholesale trade services, except of motor vehicles and motorcycles	58.86	1.7%	0.05 €	0.3%
Retail trade services, except of motor vehicles and motorcycles	15.8	0.5%	0.03 €	0.2%
Land transport services and transport services via pipelines	31.12	0.9%	0.55 €	3.2%
Warehousing and support services for transportation	3.47	0.1%	0.03 €	0.2%
Accommodation and food services	1.08	0.0%	0.08 €	0.4%
Publishing services	0.39	0.0%	0.05 €	0.3%
Computer programming, consultancy and related services; Information services	3.36	0.1%	0.03 €	0.1%
Financial services, except insurance and pension funding	17.25	0.5%	0.27 €	1.6%
Real estate services excluding imputed rents	5.56	0.2%	0.03 €	0.1%
Advertising and market research services	0	0.0%	0.10 €	0.6%
Total	820.93	24.0%	7.64 €	44.3%
Compensation of employees	127.56	3.7%	3.17 €	18.4%
Imports of goods and services	2,291.86	67.0%	2.92 €	16.9%
Other primary inputs	180.32	5.3%	3.52 €	20.4%
Total supply at basic prices	3,420.68	100.0%	17.25 €	100.0%

Rezultati – proizvodna funkcija energetike

	Lesna energetika Slovenija	
Products of forestry, logging and related services	7.12 €	20.0%
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	8.03 €	22.6%
Electrical equipment	0.18 €	0.5%
Machinery and equipment n.e.c.	2.13 €	6.0%
Electricity, gas, steam and air conditioning	0.43 €	1.2%
Sewerage services; sewage sludge; waste collection, treatment and disposal services; materials recovery services; remediation services and other waste management services	0.11 €	0.3%
Constructions and construction works	0.18 €	0.5%
Land transport services and transport services via pipelines	0.14 €	0.4%
Financial services, except insurance and pension funding	0.11 €	0.3%
Insurance, reinsurance and pension funding services, except compulsory social security	0.07 €	0.2%
Imputed rents of owner-occupied dwellings	0.07 €	0.2%
Total	18.64 €	52.4%
Compensation of employees	4.83 €	13.6%
Imports of goods and services	4.91 €	13.8%
Other primary inputs	7.18 €	20.2%
Total supply at basic prices	35.55	100.0%

Strošek materiala =56,4 %

Strošek vzdrževanja in amortizacije=8.2 %

Strošek transporta in odpadkov... =0.7 %

Strošek finance, zavarovanj ... =0.7 %

Sredstva za zaposlene= 13,6 %

Ostali primarni inputi = 20,2 %

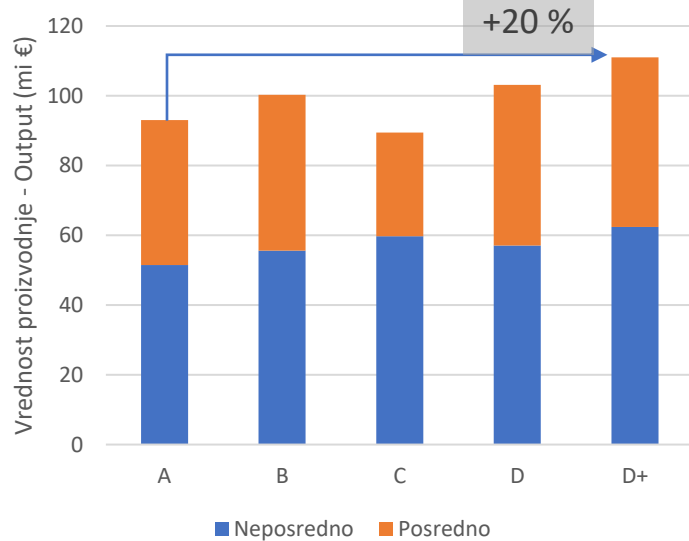
Delež industrijske energije iz lesa predstavlja cca 2% vse energetike pri nas.

1,86 %

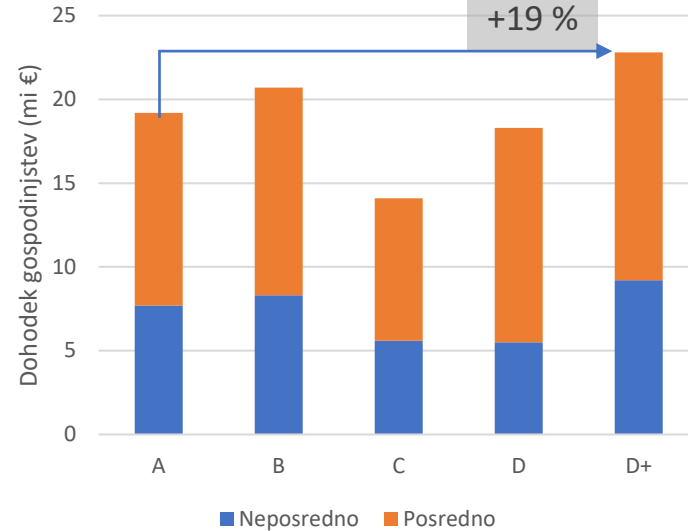
Panoga / leto	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	(2008-2017)
D35.11 Proizvodnja električne energije	0,02	0,01	0,01	0,02	0,02	0,02	0,01	0,02	0,02	0,02	0,02

Rezultati - Output multiplikatorji sektorjev gozdno lesne verige

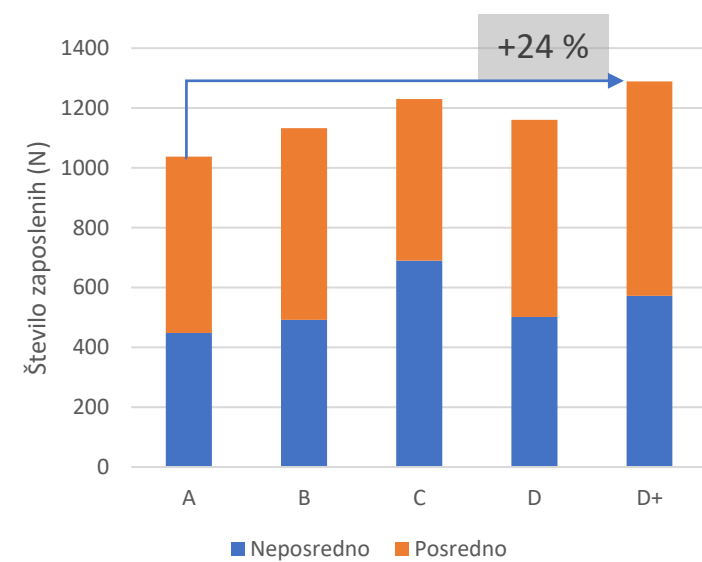
Vrednost proizvodnje



Dohodek



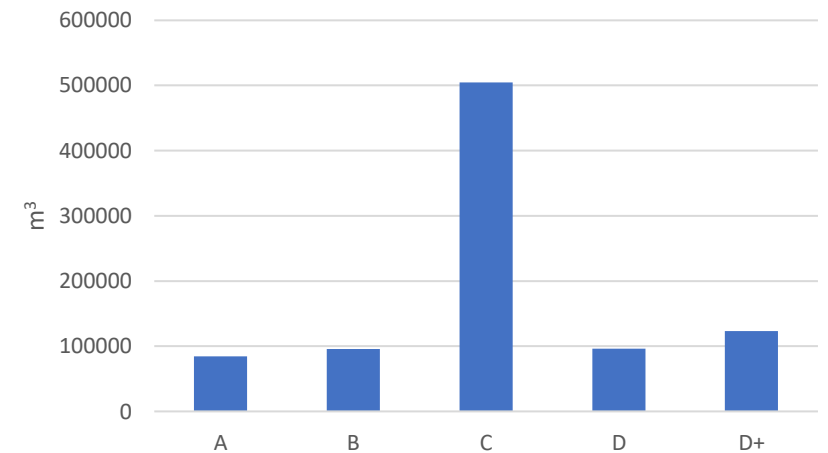
Število zaposlenih



5 scenarijev razvoja gozdno lesne verige v Sloveniji:

- Scenarij A - Osnovni scenarij
- Scenarij B - Scenarij s povečano učinkovitostjo predelave lesa
- Scenarij C - Scenarij s povečano energetsko rabo lesne biomase
- Scenarij D - Scenarij tehnološko in kapitalno intenzivnega prestrukturiranja
- Scenarij D+ - Scenarij tehnološko in kapitalno intenzivnega prestrukturiranja

Ocenjena količina lesa



Uvod

Material in
metode

Rezultati

Sklepi



- Gozdno lesna veriga ni sestavljena zgolj iz 6 sektorjev, ki jih v večini primerov izpostvaljamo (A2, C16, C17, C20*, C31, D35*), temveč jo neposredno in posredno sestavlja več kot 20 gospodarskih sektorjev
- Strukturne spremembe predelave lesa so v prihodnosti nujne in bi omogočile bistven razvoj Gozdno lesnega biogospodarstva
 - Potenciali niso neomejeni.
 - 20 - 25%
- V luči podnebnih sprememb - izboljšanje proizvodnih funkcij gospodarskih sektorjev z **predelavo listavcev**
 - **Zapolnitev vrzeli v lesnopredelovalni verigi**
 - **Dodajanje vrednosti lesu skozi več ravni predelave**
 - **Grozdjenje (nacionalno – mednarodno)**
 - **Strateški dokumenti - IZVEDBA**
 - **Dodati pomen lesu**

Zahvala



Javna agencija za znanstvenoraziskovalno
in inovacijsko dejavnost Republike Slovenije



GOZDARSKI INŠTITUT SLOVENIJE
SLOVENIAN FORESTRY INSTITUTE



ARRS J4-2541: Vpliv podnebnih sprememb na
dinamiko akumulacije lesne biomase bukve in
smreke v Sloveniji in ovrednotenje s tem povezanih
potencialov rasti biogospodarstva

Program usposabljanja MR – Domen Arnič

HVALA ZA POZORNOST!