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RAČUNI OKOLIŠA

ENVIRONMENTAL ACCOUNTS

Računi protoka materijala, 2017. – 2021.

Material Flow Accounts, 2017- 2021

Računi protoka materijala pružaju informacije o materijalnim tokovima između privrede i okoliša, a oni se sastoje od vađenja sirovina i drugih primarnih materijala i ispuštanja u okoliš, kao i materijalnih tokova između nacionalne privrede i ostatka svijeta (uvoz i izvoz).

Vrijednost izravnog unosa materijala u ekonomiju u 2021. godini (domaće vađenje + uvoz) je manji za 1,0% u odnosu na prethodnu godinu, dok je domaća potrošnja materijala u zemlji manja za 3,6%. Uvezeno je 8,7% više materijala, dok je izvoz materijala veći za 11,5%. Količina domaćeg vađenja resursa u 2021. godini je manja za 3,3% u odnosu na prethodnu godinu.

Fizička trgovinska bilanca u 2021. je za 18,6% manja nego u 2020. godini.

Material flow accounts provide information on material flows between the economy and the environment, and they consist of the extraction of raw materials and other primary materials from environment and the discharge into the environment, as well as material flows between the national economy and the rest of the world (import and exports).

The value of the direct material input into the economy in 2021 (domestic extraction + import) was less by 1.0% compared to the previous year, while the domestic material consumption in the country was less by 3.6%. Import increased by 8.7%, while the value of export increased by 11.5% more than the previous year. The amount of domestic extraction in 2021 was less by 3.3% compared to the previous year.

Physical trade balance in 2021 was 18.6% lower than in 2020.

1. Domaće vađenje materijala, Bosna i Hercegovina, 2016. – 2021.

Domestic extraction, Bosnia and Herzegovina, 2016 - 2021

000 tona
000 tonnes

	2017.	2018.	2019.	2020.	2021.
Ukupno <i>Total</i>	35 151 ¹⁾	37 218 ¹⁾	37 603 ¹⁾	38 771 ¹⁾	37 499
Biomasa <i>Biomass</i>	8 097 ¹⁾	9 680 ¹⁾	9 298 ¹⁾	9 692 ¹⁾	8 268 ²⁾
Metalne rude <i>Metal ores</i>	2 866	2 631	3 042	2 463	2 681
Nemetalni minerali <i>Non-metallic minerals</i>	10 105	10 402	11 886	13 081	13 081
Fosilna goriva <i>Fossil energy materials/carriers</i>	14 084	14 505	13 377	13 536	12 803

1) Revidiran podatak/Revised data

Količina domaćeg vađenja materijala u 2021. godini je 37,5 milijuna tona, što je za 3,3% manje u odnosu na 2020. godinu. U odnosu na prethodnu godinu, količina izvađene biomase u 2021. godini je manja za 14,7%, a fosilnih energetskih sirovina manja je za 5,4%. Količina metalne rude je veća za 8,8% te je povećana ekstrakcija nemetalnih minerala za 5,1%

Domestic extraction of materials in 2021 was 37.5 million tonnes, which was 3.3% less than in 2020. Compared to the previous year, the amount of extracted biomass decreased by 14.7%, fossil energy materials is less by 5.4%. Extraction of metal ores increased by 8.8% and extraction of non-metallic minerals increase by 5.1%.

2. Uvoz, Bosna i Hercegovina, 2017. – 2021.

Import, Bosnia and Herzegovina, 2017 - 2021

000 tona
000 tonnes

	2017.	2018.	2019.	2020.	2021
Ukupno <i>Total</i>	10 494 ¹⁾	10 605 ¹⁾	10 416 ¹⁾	9 179 ¹⁾	9 982
Biomasa i proizvodi od biomase <i>Biomass and biomass products</i>	3 092	2 988 ¹⁾	3 027 ¹⁾	2 842	2 783
Metalne rude i koncentracije, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i>	1 254	1 534 ¹⁾	1 494 ¹⁾	1 069	1 356
Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i>	1 482	1 377 ¹⁾	1 426	1 302	1 400
Fosilna goriva <i>Fossil energy materials/carriers</i>	4 039	4 040 ¹⁾	3 807	3 339	3 756
Ostali proizvodi <i>Other products</i>	622	640 ¹⁾	627 ¹⁾	592 ¹⁾	645
Otpad uvezen radi konačne obrade i odlaganja <i>Waste exported for final treatment and disposal</i>	4	27	35	36	41

1) Revidiran podatak/Revised data

Uvezeno je 9,98 milijuna tona materijala u 2021. godini, 8,7% više u poređenju s prethodnom godinom. Manje je uvezeno biomase i proizvoda od biomase (2,1%), Više od prethodne godine uvezeno je nemetalnih minerala (7,6%), metalne rude i koncentrata (26,9%) kao i fosilnih energetskih sirovina (12,5%).

The amount of imported materials in 2021 was 9.98 million tonnes, which is 8.7% more than the previous year. It was imported less biomass and biomass products (2.1%), More than the previous year, non-metallic minerals were imported (7.6%), metal ores and concentrates (26.9%) as well as fossil energy materials (12.5%).

3. Izvoz, Bosna i Hercegovina, 2017. – 2021.

Export, Bosnia and Herzegovina, 2016 – 2020

000 tona
000 tonnes

	2017.	2018.	2019.	2020.	2021.
Ukupno <i>Total</i>	8 379	8 596 ¹⁾	8 740 ¹⁾	8 345	9 304
Biomasa i proizvodi od biomase <i>Biomass and biomass products</i>	2 603	2 343	2 039 ¹⁾	1 956	2 184
Metalne rude i koncentracije, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i>	1 583	1 660	1 585 ¹⁾	1 400	1 775
Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i>	1 932	2 194	3 042	3 179	3 293
Fosilna goriva <i>Fossil energy materials/carriers</i>	1 009	1 102	783	652	769
Ostali proizvodi <i>Other products</i>	1 251	1 297 ¹⁾	1 289 ¹⁾	1 159	1 282
Otpad izvezen radi konačne obrade i odlaganja <i>Waste exported for final treatment and disposal</i>	0	0	1	1	1

1) Revidiran podatak/Revised data

Izvoz materijala u 2021. godini je iznosio 9,3 milijuna tona, što je za 11,5% više u odnosu s prethodnom godinom. Zabilježen je veći izvoz biomase i proizvoda od biomase (11,7%), metalne rude i koncentrata (26,8%), fosilnih energetske sirovina (17,9%). Porast je zabilježen kod izvoza nemetalnih minerala i to za 3,6%.

Exports of materials in 2021 amounted to 9.3 million tonnes, which is 11.5% more than in the previous year. Compared to the 2020, there were higher exports of biomass and biomass products (11.7%), metal ores and concentrates (26.8%), fossil fuels (17.9%). An increase was recorded in exports of non-metallic minerals by 3.6%.

4. Pokazatelji protoka materijala, Bosna i Hercegovina, 2021.

Material flow indicators, Bosnia and Herzegovina, 2020

000 tona
000 tonnes

	Domaće vađenje <i>Domestic extraction</i>	Uvoz <i>Import</i>	Izvoz <i>Export</i>	Izravni unos materijala ¹⁾ <i>Direct material input²⁾</i>	Domaća potrošnja materijala ²⁾ <i>Domestic material consumption³⁾</i>	Fizička trgovinska bilanca ³⁾ <i>Physical trade balance⁴⁾</i>
	1	2	3	4 = 1 + 2	5 = 4 - 3	6 = 2 - 3
Materijali, ukupno <i>Materials, total</i>	37 499	9 982	9 304	47 481	38 177	679
Biomasa i proizvodi od biomase <i>Biomass and biomass products</i>	8 268	2 783	2 184	11 051	8 867	599
Metalne rude i koncentрати, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i>	2 681	1 356	1 775	4 037	2 262	-419
Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i>	13 748	1 400	3 293	15 148	11 855	-1 893
Fosilna goriva <i>Fossil energy materials/carriers</i>	12 803	3 756	769	16 559	15 790	2 987
Ostali proizvodi <i>Other products</i>	0	645	1 282	645	-636	-636
Otpad <i>Waste</i>	0	41	1	41	39	39

1) Izravni unos materijala (DMI) = domaće vađenje + uvoz
Direct material input (DMI) = domestic extraction + import

2) Domaća potrošnja materijala (DMC) = domaće vađenje + uvoz - izvoz
Domestic material consumption (DMC) = domestic extraction + import - export

3) Fizička trgovinska bilanca (PTB) = uvoz - izvoz
Physical trade balance (PTB) = import - export

U 2021. godini je izravno uvedeno u ekonomiju 47,5 milijuna tona materijala (79,0% iz domaćih izvora, 21,0% iz uvoza), 1,0% manje nego u prethodnoj godini. Domaća potrošnja materijala u zemlji iznosila je 38,2 milijuna tona, te je manja za 3,6% nego u 2020. godini. Uvoz materijala je veći za 8,7% kao i izvoz za 11,5%. Bilanca fizičke trgovine u 2021. godini iznosila je 0,7 milijuna tona, 18,6% manje u odnosu na prethodnu godinu, što znači da je u 2021. godini uvezeno 0,7 milijuna tona materijala više nego što je izvezeno.

In 2021, the direct material input was 47.5 million tonnes (81.2% from domestic sources and 21.0% from imports), 1.0% less than in the previous year. Domestic material consumption in the country was 38.2 million tonnes, which was 3.6% more than in 2020. Imports of materials increased by 8.7% and exports by 11.5%. The physical trade balance in 2021 was 0.7 million tonnes, which was 18.6% less than in the previous year. This means that 0.7 million tonnes more materials were imported than exported in 2021.

5. Pokazatelji protoka materijala, Bosna i Hercegovina, 2017. – 2021.

Material flow indicators, Bosnia and Herzegovina, 2017 – 2021

000 tona
000 tonnes

	2017.	2018.	2019.	2020.	2021.
Domaće vađenje <i>Domestic extraction</i>	35 151 ¹⁾	37 218 ¹⁾	37 603 ¹⁾	38 771 ¹⁾	37 499
Uvoz <i>Import</i>	10 494 ¹⁾	10 605 ¹⁾	10 416 ¹⁾	9 179 ¹⁾	9 982
Izvoz <i>Export</i>	8 379	8 596 ¹⁾	8 740 ¹⁾	8 345	9 304
Izravni unos materijala ²⁾ <i>Direct material input²⁾</i>	45 645 ¹⁾	47 824 ¹⁾	48 019 ¹⁾	47 951 ¹⁾	47 481
Domaća potrošnja materijala ³⁾ <i>Domestic material consumption³⁾</i>	37 266 ¹⁾	39 227 ¹⁾	39 279 ¹⁾	39 606 ¹⁾	38 177
Fizička trgovinska bilanca ⁴⁾ <i>Physical trade balance⁴⁾</i>	2 115	2 009 ¹⁾	1 676 ¹⁾	834 ¹⁾	679

1) Revidiran podatak/Revised data

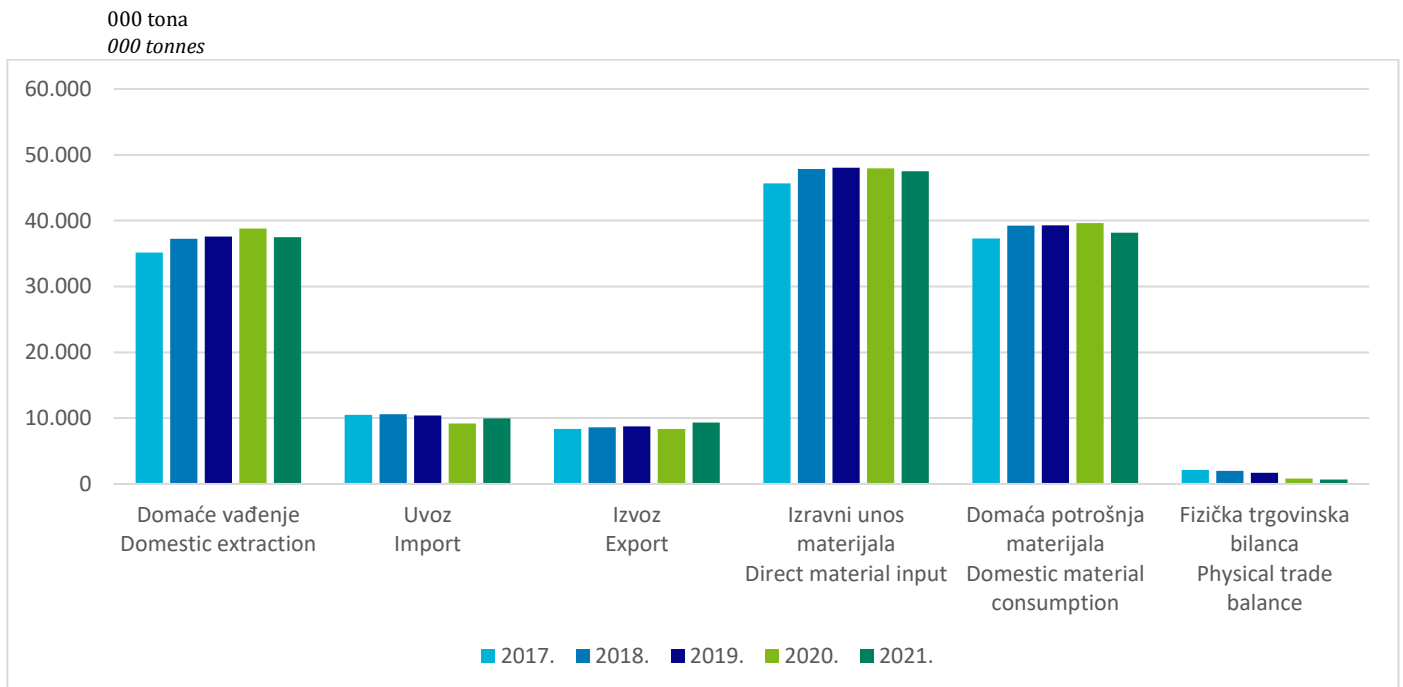
2) Izravni unos materijala (DMI) = domaće vađenje + uvoz
Direct material input (DMI) = domestic extraction + import

3) Domaća potrošnja materijala (DMC) = domaće vađenje + uvoz – izvoz
Domestic material consumption (DMC) = domestic extraction + import – export

4) Fizička trgovinska bilanca (PTB) = uvoz – izvoz
Physical trade balance (PTB) = import – export

Graf 1. Pokazatelji protoka materijala, Bosna i Hercegovina, 2017. – 2021.

Graph 1. Material flow indicators, Bosnia and Herzegovina, 2017 – 2021



Metodologija

Sistem okolišno-ekonomskih računa (SEEA) za protok materijala pruža informacije o materijalnim ulazima i izlazima ekonomije koristeći strukture i principe postavljene u Centralnom okviru SEEA. SEEA računi protoka materijala pružaju zbirni pregled ulaznih i izlaznih podataka u smislu inputa iz okoline, izlaza u okoliš i fizičkih količina uvoza i izvoza. Razumijevanje protoka materijala u cijeloj ekonomiji presudno je za razumijevanje korištenja resursa u ekonomiji i eko-efikasnosti.

Računi protoka materijala (EW-MFA) su jedan od nekoliko fizičkih modula Eurostatova programa ekonomskih računa okoliša. Obuhvaćeni su Regulativom (EU) br. 691/2011 Europskog parlamenta i Vijeća o Europskim ekonomskim računima za okoliš.

Računi protoka materijala (EW-MFA) bilježe protoke prirodnih inputa (domaće vađenje materijala) i proizvoda (izvoz, uvoz) s pomoću detaljne podjele za određene kategorije materijala. EW-MFA uključuje sljedeće kategorije materijala:

- Biomasa i proizvodi od biomase: usjevi i njihovi proizvodi, ostaci od usjeva i krme,
- Metalne rude i koncentracije te njihovi proizvodi,
- Nemetalni minerali i njihovi proizvodi,
- Fosilna goriva i njihovi proizvodi (ugljen, nafta, plin itd.),
- Ostali proizvodi,
- Otpad za konačnu obradu ili odlaganje.

Definicije

Biomasa je biorazgradivi dio proizvoda, ostatka proizvoda i otpadaka od poljoprivrede (uključivo s biljnim i životinjskim tvarima), šumarstva i drvne industrije te biorazgradivi dio komunalnog i industrijskog otpada čije je energetske korištenje dopušteno.

Minerali su prirodno homogena tijela stalnoga kemijskog sastava i utvrđenih fizičkih svojstava koji se javljaju ili u određenim geometrijskim oblicima (kristalima) ili bez određenih vanjskih obilježja.

Ruda je mineralni agregat iz kojega je tehnički moguće i ekonomski opravdano dobivanje metala i/ili drugih minerala koji se mogu upotrijebiti u industriji.

Koncentracije su produkti obogaćivanja ruda znatno povećanim sadržajem metala u odnosu na sadržaje u rudi i pogodni za daljnju metaluršku preradu i dobivanje metala.

Nemetalne mineralne sirovine su one sirovine koje nam pri topljenju ne daju novu sirovinu, a obično su vezane za sedimentne stijene (kvarcne sirovine, gline, gips, sol, dolomit, fosforit, grafit, boksit i cementne sirovine).

Methodology

The System of Environmental-Economic Accounts (SEEA) for material flow provide information on material inputs and outputs of an economy using the structures and principles laid out in the SEEA Central Framework. The SEEA Material Flow Accounts can provide an aggregate overview of the inputs and outputs in terms of inputs from the environment, outputs to the environment, and the physical amounts of imports and exports. Understanding economy-wide material flow is critical to understanding resource use by the economy and eco-efficiency.

The material flow accounts (EW-MFA) are one of the several physical modules of the Eurostat's program of environmental economic accounts. They are covered in the Regulation (EU) No 691/2011 of the European Parliament and the Council on European environmental economic accounts.

Economy-wide material flow accounts (EW-MFA) record flows of natural inputs (domestic extraction of materials) and products (exports, imports) using a detailed breakdown for certain categories of materials. EW-MFA includes the following categories of materials:

- *Biomass and biomass products: crops and products thereof, crop residues and fodder crops,*
- *Metal ores and concentrates and products thereof,*
- *Non-metallic minerals and products thereof,*
- *Fossil energy material/carriers and products thereof (coal, oil, gas etc.),*
- *Other products,*
- *Waste for final treatment and disposal.*

Definitions

Biomass refers to the biodegradable components of products, waste and residue of agriculture (including plant and animal matter), forestry and wood industries, as well as biodegradable parts of municipal and industrial waste, the energy usage of which is allowed.

Minerals are natural homogeneous bodies of permanent chemical composition and determined physical characteristics that occur in specific geometric forms (crystals) or undetermined physical characteristics.

Ore is a mineral aggregate from which it is technically viable and economically justifiable to produce metals and/or other minerals usable in industry.

Concentrates are products of ore enrichment that have a significantly increased metal content compared to ore contents and are appropriate for further metallurgic processing and production of metal.

Non-metallic mineral raw material are the raw materials which do not produce new raw materials as a result of melting, and are usually integrated in sedimentary rocks (quartz raw materials, clay, salt, dolomite, phosphorite, graphite, bauxite and cement raw materials).

Fosilna energija (gorivo) nastala je prirodnim putem ispod Zemljine površine tijekom dugog razdoblja od ostataka živih bića. Fosilna goriva neobnovljivi su izvori energije. Postoje tri glavna oblika fosilnih goriva: ugljen, nafta i prirodni plin.

Otpad je svaka tvar ili predmet koji posjednik odbacuje, namjerava ili mora odbaciti. Otpadom se smatra i svaki predmet i tvar čije su sakupljanje, prijevoz i obrada nužni za svrhu zaštite javnog interesa.

Domaće vađenje materijala (DE) jest godišnja količina sirovina (osim vode i zraka) koja se dobiva iz prirodnog okoliša, a upotrebljava se u ekonomiji.

Domaća potrošnja materijala (DMC) definira se kao ukupna količina materijala koja se izravno upotrebljava u ekonomiji.

Domaća potrošnja materijala (DMC) = domaće vađenje + uvoz – izvoz

Izravni unos materijala (DMI) = domaće vađenje + uvoz

Fizička trgovinska bilanca (PTB) računa se tako da se od količine uvoza izražene u fizičkim jedinicama oduzme količina izvoza izražena u fizičkim jedinicama na sljedeći način:

Fizička trgovinska bilanca (PTB) = uvoz – izvoz

Kratice

EU – Europska unija

Eurostat – Statistički ured Europske unije

Znakovi

0 – podatak je manji od 0.5 upotrijebljene mjerne jedinice

Fossil energy (fuel) is produced naturally beneath Earth's surface during a long period of time from biological remains. Fossil fuels are renewable energy sources. There are three main forms of fossil fuels: coal, oil and natural gas.

Waste is every substance or object that was, is going to be or has to be discarded by its owner. Every discarded object and substance gathering, transport and processing which are necessary for the protection of the public interest is considered waste.

Domestic extraction (DE) is the annual amount of raw materials (except for water and air) extracted from the natural environment to be used in the economy.

Domestic material consumption (DMC) is defined as the total amount of material directly used in the economy.

Domestic material consumption (DMC) = domestic extraction + import – export

Direct material input (DMI) = domestic extraction + import

Physical trade balance (PTB) is calculated by subtracting the amount of export in physical units from the amount of import in physical units, as follows:

Physical trade balance (PTB) = import – export

Abbreviations

EU – European Union

Eurostat – Statistical Office of the European Communities

Symbols

0 – value not zero but less than 0.5 of the unit measure used

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Telefon/Phone: +387 (33) 911 911 | Telefaks/Telefax: +387 (33) 220 622
Elektronska pošta/E-mail: bhas@bhas.gov.ba | Internetska stranica/Web site: www.bhas.gov.ba

Odgovorne osobe/Responsible persons:

Ševala Korajčević, šefica odsjeka za transport, okoliš, energiju i regionalne statistike
Ševala Korajčević, Head of the Department for Transport, Environment, Energy and Regional Statistics

Vesna Čužić, ravnateljica
Vesna Čužić, Director

Priopćenje priredio: Dragan Jovović
Prepared by: Dragan Jovović



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