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GODINA/YEAR IV

SARAJEVO, 18.11.2021.

BROJ/NUMBER 1

RAČUNI OKOLIŠA

ENVIRONMENTAL ACCOUNTS

Računi protoka materijala, 2016. – 2020.

Material Flow Accounts, 2016 - 2020

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

Vrijednost direktnog unosa materijala u ekonomiju u 2020. godini (domaće vađenje + uvoz) je veća za 0,4% u odnosu na prethodnu godinu, dok je domaća potrošnja materijala u zemlji veća za 1,5%. Uvezeno je 12% manje materijala, dok je izvoz materijala manji za 4,6%. Količina domaćeg vađenja resursa u 2020. godini je veća za 3,8% u odnosu na prethodnu godinu.

Fizička trgovinska bilanca u 2020. je za 50,3% manja nego u 2019. 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 2020 (domestic extraction + import) was higher by 0.4% compared to the previous year, while the domestic material consumption in the country was higher by 1.5%. Import decreased by 12%, while value of export decreased by 4.6% than the previous year. The amount of domestic extraction in 2020 was higher by 3.8% compared to the previous year.

Physical trade balance in 2020 was 50.3% lower than in 2019.

1. Domaće vađenje materijala, Bosna i Hercegovina, 2016. – 2020.

Domestic extraction, Bosnia and Herzegovina, 2016 - 2020

000 tona
000 tonnes

| | 2016. | 2017. | 2018. | 2019. | 2020. |
|---|--------|----------------------|----------------------|----------------------|----------------------|
| Ukupno <i>Total</i> | 38 486 | 35 829 ¹⁾ | 37 885 ¹⁾ | 38 257 ²⁾ | 39 703 ¹⁾ |
| Biomasa <i>Biomass</i> | 10 258 | 8 775 | 10 346 | 9 952 | 10 624 |
| Metalne rude <i>Metal ores</i> | 2 997 | 2 866 | 2 631 | 3 042 ²⁾ | 2 463 |
| Nemetalni minerali <i>Non-metallic minerals</i> | 11 743 | 10 105 | 10 402 | 11 886 | 13 081 |
| Fosilna goriva <i>Fossil energy materials/carriers</i> | 13 488 | 14 084 | 14 505 | 13 377 | 13 536 |

1) Ukupno ne odgovara zbroju pojedinih stavki zbog iskazivanja u tisućama.
The sum total is not equal the sum of individual items due to the expression of numbers in thousands.

2) Revidiran podatak/Revised data

Količina domaćeg vađenja materijala u 2020. godini je 39,7 miliona tona, što je za 3,8% više u odnosu na 2019. godinu. U odnosu na prethodnu godinu, količina izvađene biomase u 2020. godini je veća za 6,7%, količina metalne rude je manja za 19% te je povećana ekstrakcija nemetalnih minerala za 10,1% i fosilnih energetske sirovina za 1,2%.

Domestic extraction of materials in 2020 was 39.7 million tonnes, which was 3.8% more than in 2019. Compared to the previous year, the amount of extracted biomass increased by 6.7%, extraction of metal ores decreased by 19% and increase in extraction of non-metallic minerals by 10.1% and fossil energy materials by 1.2%.

2. Uvoz, Bosna i Hercegovina, 2016. – 2020.

Import, Bosnia and Herzegovina, 2016 - 2020

000 tona
000 tonnes

| | 2016. | 2017. | 2018. | 2019. | 2020 |
|---|--------|----------------------|--------|----------------------|---------------------|
| Ukupno <i>Total</i> | 10 286 | 10 494 ¹⁾ | 10 567 | 10 430 ¹⁾ | 9 180 ¹⁾ |
| Biomasa i proizvodi od biomase <i>Biomass and biomass products</i> | 3 019 | 3 092 | 2 983 | 3 032 | 2 842 |
| Metalne rude i koncentracije, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i> | 1 136 | 1 254 | 1 527 | 1 497 | 1 069 |
| Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i> | 1 617 | 1 482 | 1 369 | 1 426 | 1 302 |
| Fosilna goriva <i>Fossil energy materials/carriers</i> | 3 926 | 4 039 | 4 034 | 3 807 | 3 339 |
| Ostali proizvodi <i>Other products</i> | 579 | 622 | 627 | 634 | 593 |
| Otpad uvezen radi konačne obrade i odlaganja <i>Waste exported for final treatment and disposal</i> | 9 | 4 | 27 | 35 | 36 |

1) Ukupno ne odgovara zbroju pojedinih stavki zbog iskazivanja u tisućama.
The sum total is not equal the sum of individual items due to the expression of numbers in thousands.

Uvezeno je 9,2 miliona tona materijala u 2020. godini, 12% manje u usporedbi s prethodnom godinom. Manje je uvezeno biomase i proizvoda od biomase (6,3%), nemetalnih minerala (8,7%), ostalih proizvoda (6,4%). Znatno manje je uvezeno metalne rude i koncentrata (28,6%) kao i fosilnih energetske sirovina (12,3%). Porast je samo zabilježen kod otpada radi konačne obrade i odlaganja (3,6%).

The amount of imported materials in 2020 was 9.2 million tonnes, which is 12% less than the previous year. It was imported less biomass and biomass products (6.3%), non-metallic minerals (8.7%), other products (6.4%). Significantly less metal ores and concentrates (28.6%) as well as fossil energy materials (12.3%) were imported. An increase was only recorded in waste for final processing and disposal (3.6%).

3. Izvoz, Bosna i Hercegovina, 2016. – 2020.

Export, Bosnia and Herzegovina, 2016 – 2020

000 tona
000 tonnes

| | 2016. | 2017. | 2018. | 2019. | 2020. |
|--|-------|---------------------|-------|---------------------|---------------------|
| Ukupno <i>Total</i> | 7 919 | 8 379 ¹⁾ | 8 589 | 8 749 ¹⁾ | 8 345 ¹⁾ |
| Biomasa i proizvodi od biomase <i>Biomass and biomass products</i> | 2 478 | 2 603 | 2 343 | 2 040 | 1 956 |
| Metalne rude i koncentracije, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i> | 1 497 | 1 583 | 1 660 | 1 593 | 1 400 |
| Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i> | 1 816 | 1 932 | 2 194 | 3 042 | 3 179 |
| Fosilna goriva <i>Fossil energy materials/carriers</i> | 987 | 1 009 | 1 102 | 783 | 652 |
| Ostali proizvodi <i>Other products</i> | 1 141 | 1 251 | 1 290 | 1 291 | 1 159 |
| Otpad izvezen radi konačne obrade i odlaganja <i>Waste exported for final treatment and disposal</i> | 0 | 0 | 0 | 1 | 1 |

1) Ukupno ne odgovara zbroju pojedinih stavki zbog iskazivanja u tisućama.
The sum total does not equal the sum of individual items due to the expression of numbers in thousands.

Izvoz materijala u 2020. godini je iznosio 8,3 miliona tona, što je za 4,6% manje u odnosu s prethodnom godinom. Zabilježen je manji izvoz biomase i proizvoda od biomase (4,1%), metalne rude i koncentrata (12,1%), fosilnih energetske sirovina (16,7%). Porast je samo zabilježen kod izvoza nemetalnih minerala i to za 4,5%.

Exports of materials in 2020 amounted to 8.3 million tonnes, which is 4.6% less than in the previous year. Compared to the 2019, there were lower exports of biomass and biomass products (4.1%), metal ores and concentrates (12.1%), fossil fuels (16.7%). An increase was recorded only in exports of non-metallic minerals by 4.5%.

4. Pokazatelji protoka materijala, Bosna i Hercegovina, 2020.

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> | Direktni unos materijala ²⁾ <i>Direct material input²⁾</i> | Domaća potrošnja materijala ³⁾ <i>Domestic material consumption³⁾</i> | Fizička trgovinska bilanca ⁴⁾ <i>Physical trade balance⁴⁾</i> |
|--|---|-----------------------|------------------------|---|--|--|
| | 1 | 2 | 3 | 4 = 1 + 2 | 5 = 4 - 3 | 6 = 2 - 3 |
| Materijali, ukupno <i>Materials, total</i> | 39 703 ¹⁾ | 9 180 ¹⁾ | 8 345 ¹⁾ | 48 883 | 40 538 | 835 ¹⁾ |
| Biomasa i proizvodi od biomase <i>Biomass and biomass products</i> | 10 624 | 2 842 | 1 956 | 13 465 | 11 510 | 886 |
| Metalne rude i koncentрати, sirovi i prerađeni <i>Metal ores and concentrates, raw and processed</i> | 2 463 | 1 069 | 1 400 | 3 532 | 2 132 | -331 |
| Nemetalni minerali, sirovi i prerađeni <i>Non-metallic minerals, raw and processed</i> | 13 081 | 1 302 | 3 179 | 14 382 | 11 204 | -1 877 |
| Fosilna goriva <i>Fossil energy materials/carriers</i> | 13 536 | 3 339 | 652 | 16 875 | 16 223 | 2 687 |
| Ostali proizvodi <i>Other products</i> | 0 | 593 | 1 159 | 593 | -566 | -566 |
| Otpad <i>Waste</i> | 0 | 36 | 1 | 36 | 35 | 35 |

- 1) Ukupno ne odgovara zbroju pojedinih stavki zbog iskazivanja u tisućama.
The sum total is not equal the sum of individual items due to the expression of numbers in thousands.
- 2) Direktni 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

U 2020. godini je direktno uvedeno u ekonomiju 48,9 miliona tona materijala (81,2% iz domaćih izvora, 18,8% iz uvoza), 0,4% više nego u prethodnoj godini. Domaća potrošnja materijala u zemlji iznosila je 40,5 miliona tona, te je veća za 1,5%. Uvoz materijala je manji za 12% kao i izvoz za 4.6%. Bilanca fizičke trgovine u 2020. godini iznosila je 0,8 miliona tona, 50,3% manje u odnosu na prethodnu godinu, što znači da je u 2020. godini uvezeno 0,8 miliona tona materijala više nego što je izvezeno.

In 2020, the direct material input was 48.9 million tonnes (81.2% from domestic sources and 18.8% from imports), 0.4% more than in the previous year. Domestic material consumption in the country was 40.5 million tonnes, which was 1.5% more than in 2019. Imports of materials decreased by 12% and exports by 4.6%. The physical trade balance in 2020 was 0.8 million tonnes, which was 50.3% less than in the previous year. This means that 0.8 million tonnes more materials were imported than exported in 2020.

5. Pokazatelji protoka materijala, Bosna i Hercegovina, 2016. – 2020.

Material flow indicators, Bosnia and Herzegovina, 2016 – 2020

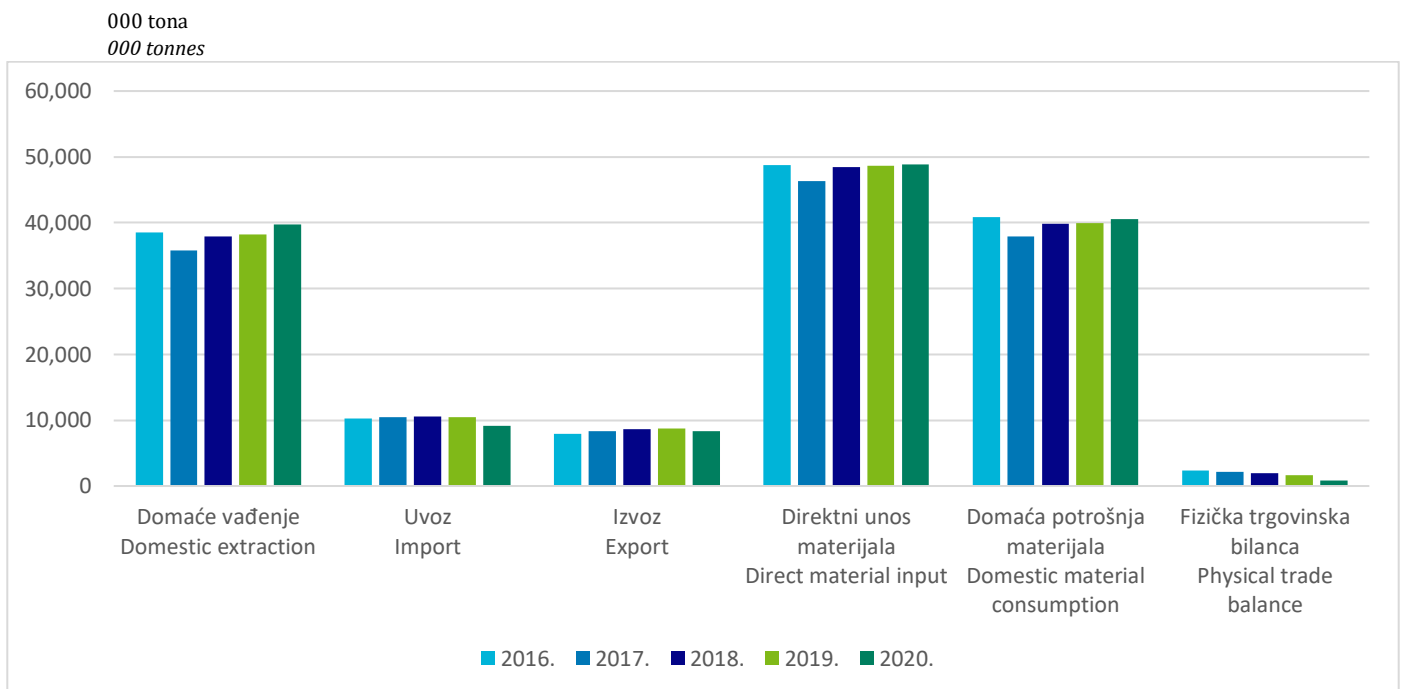
000 tona
000 tonnes

| | 2016. | 2017. | 2018. | 2019. | 2020. |
|--|----------------------|--------|--------|----------------------|--------|
| Domaće vađenje <i>Domestic extraction</i> | 38 486 | 35 829 | 37 885 | 38 257 ²⁾ | 39 703 |
| Uvoz <i>Import</i> | 10 286 | 10 494 | 10 567 | 10 430 | 9 180 |
| Izvoz <i>Export</i> | 7 919 | 8 379 | 8 589 | 8 749 | 8 345 |
| Direktni unos materijala ³⁾ <i>Direct material input³⁾</i> | 48 772 | 46 323 | 48 452 | 48 687 ²⁾ | 48 883 |
| Domaća potrošnja materijala ⁴⁾ <i>Domestic material consumption⁴⁾</i> | 40 854 ¹⁾ | 37 944 | 39 863 | 39 938 ²⁾ | 40 538 |
| Fizička trgovinska bilanca ⁵⁾ <i>Physical trade balance⁵⁾</i> | 2 367 | 2 115 | 1 978 | 1 681 | 835 |

- 1) Ukupno ne odgovara zbroju pojedinih stavki zbog iskazivanja u tisućama.
The sum total is not equal the sum of individual items due to the expression of numbers in thousands.
- 2) Revidiran podatak/ Revised data
- 3) Direktni unos materijala (DMI) = domaće vađenje + uvoz
Direct material input (DMI) = domestic extraction + import
- 4) Domaća potrošnja materijala (DMC) = domaće vađenje + uvoz – izvoz
Domestic material consumption (DMC) = domestic extraction + import – export
- 5) Fizička trgovinska bilanca (PTB) = uvoz – izvoz
Physical trade balance (PTB) = import – export

Graf 1. Pokazatelji protoka materijala, Bosna i Hercegovina, 2016. – 2020.

Graph 1. Material flow indicators, Bosnia and Herzegovina, 2016 – 2020



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 Evropskog parlamenta i Vijeća o Evropskim 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 materials 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 tokom dugog perioda od ostataka živih bića. Fosilna goriva neobnovljivi su izvori energije. Postoje tri glavna oblika fosilnih goriva: uglja, 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

Direktni 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

Skraćenice

EU – Evropska unija

Eurostat – Statistički ured Evropske 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

Publikuje Agencija za statistiku Bosne i Hercegovine, 71000 Sarajevo, Zelenih beretki 26
Published by the Agency for Statistics of the Bosnia and Herzegovina, 71000 Sarajevo, Zelenih beretki 26

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