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# Material Flow Accounts

Year 2019

Tirana, 7 May 2021: In 2019, the materials extracted from the domestic natural resources amounted to about 21.9 million tonnes with an increase of 2.1 % compared to 2018. In 2019, the structure of domestic extraction shows that non-metallic minerals account for 49 % of the total, followed by biomass with 35 %, metal ores with 10 % and fossil energy materials and carriers with 6 %.

Tab. 1 Domestic extraction (DE)   (000 tonnes)

Viti	2015	2016	2017	2018	2019
Biomass	7,970.0	8,066.5	8,164.1	7,970.6	7,747.5
Metal ores	1,528.7	1,180.0	1,356.8	1,766.0	2,150.7
Non-metallic minerals	15,380.5	18,062.5	10,593.3	11,074.6	10,742.5
Fossil energy materials/carriers	1,546.5	1,161.2	1,304.9	1,582.,6	1,291.2
Total	**26,425.7**	**28,470.1**	**21,419.1**	**22,393.8**	**21,931.9**

Fig.1 Structure of domestic extraction (DE)

For more information, visit INSTAT webpage: http://www.instat.gov.al/
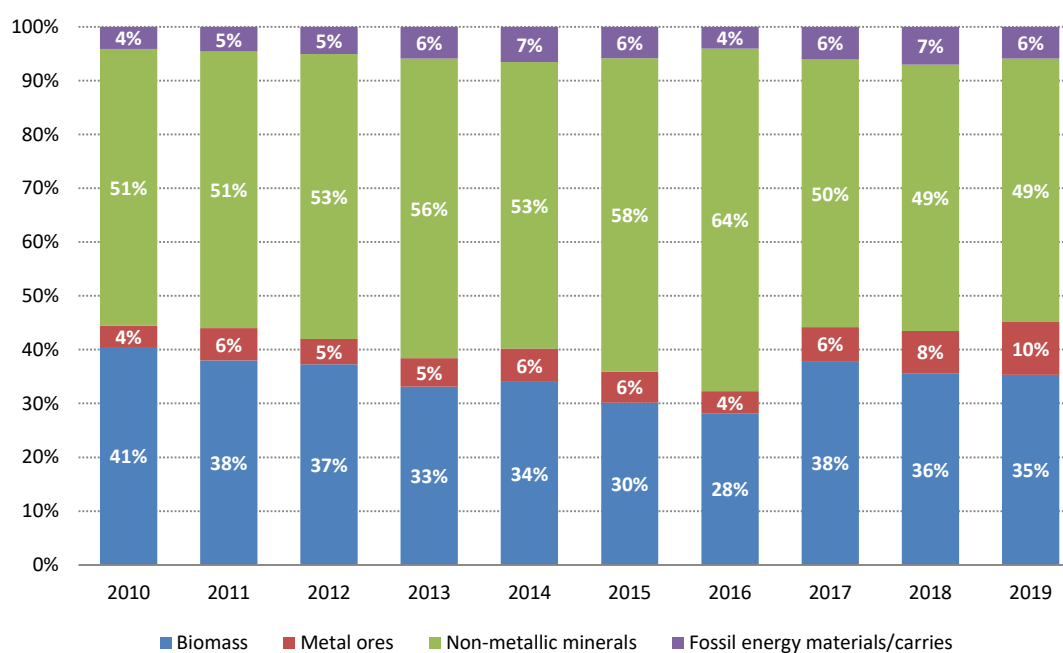
The total amount of imports of materials in 2019 was about 4.7 million tonnes, which is 5.5 % higher compared to 2018. The largest amount of imports consists of biomass, with 1,474.4 thousand tonnes, followed by non-metallic minerals with 1,011 tonnes. Than we have fossil energy materials with 976.4 thousand tonnes, metal ores and concentrates with 956.4 thousand tonnes and then other products including imported waste with 315.7 thousand tonnes.

Tab. 2 Imports of materials by category   (000 tonnes)

Year	2015	2016	2017	2018	2019
Biomass and biomass products	1,233.9	1,369.5	1,378.4	1,465.3	1,474.4
Metal ores and concentrates	816.9	752.4	829.9	883.6	956.4
Non-metallic minerals	810.5	770.4	954.9	905.9	1,001.0
Fossil energy materials/carriers	818.0	891.1	813.0	912.6	976.4
Other products and waste imported	266.4	282.2	302.2	319.1	315.7
Total	**3,945.7**	**4,065.6**	**4,278.4**	**4,486.5**	**4,733.8**

Exports of materials in 2019 amounted to around 4.2 million tonnes, which is 7.5% higher compared to 2018, mainly due to metal ores and concentrates whose exports increased by 12.5 %. During 2019 there has been an increase in exports for all other categories of environmental materials, biomass by 12.2 %, fossil energy materials carriers Increased by 11.2 % and non-metallic minerals by 1.2 %

Tab. 3 Exports of materials by category   (000 tonnes)

Year	2015	2016	2017	2018	2019
Biomass	333.3	331.2	369.1	373.5	419.3
Metal ores and concentrates	1,345.1	1,242.1	1,262.6	1,140.2	1,282.2
Non-metallic minerals	1,232.3	1,266.4	1,459.0	1,475.0	1,493.0
Fossil energy materials/carriers	1,205.9	997.2	712.6	758.3	843.1
Other products and waste exported	127.5	122.2	144.7	196.5	200.9
Total	**4,244.1**	**3,959.0**	**3,947.9**	**3,943.5**	**4,238.4**

The physical trade balance shows the difference between imports and exports for all material categories and it reaches 495 thousand tonnes for 2019, which is 47.5 thousand tonnes lower compared to 2018. As it can be seen in Figure 2, the material groups biomass, fossil energy materials/carriers and other products including imported waste have a positive trade balance, while the groups non-metallic minerals, metal ores and concentrates have a negative trade balance for 2018.

Tab.4 Physical trade balance (PTB)   (000 tonnes)

Year	2015	2016	2017	2018	2019
Physical trade balance	-298.4	106.6	330.5	543.0	495.4
Import	3,945.7	4,065.6	4,278.4	4,486.5	4,733.8
Export	4,244.1	3,959.0	3,947.9	3,943.5	4,238.4

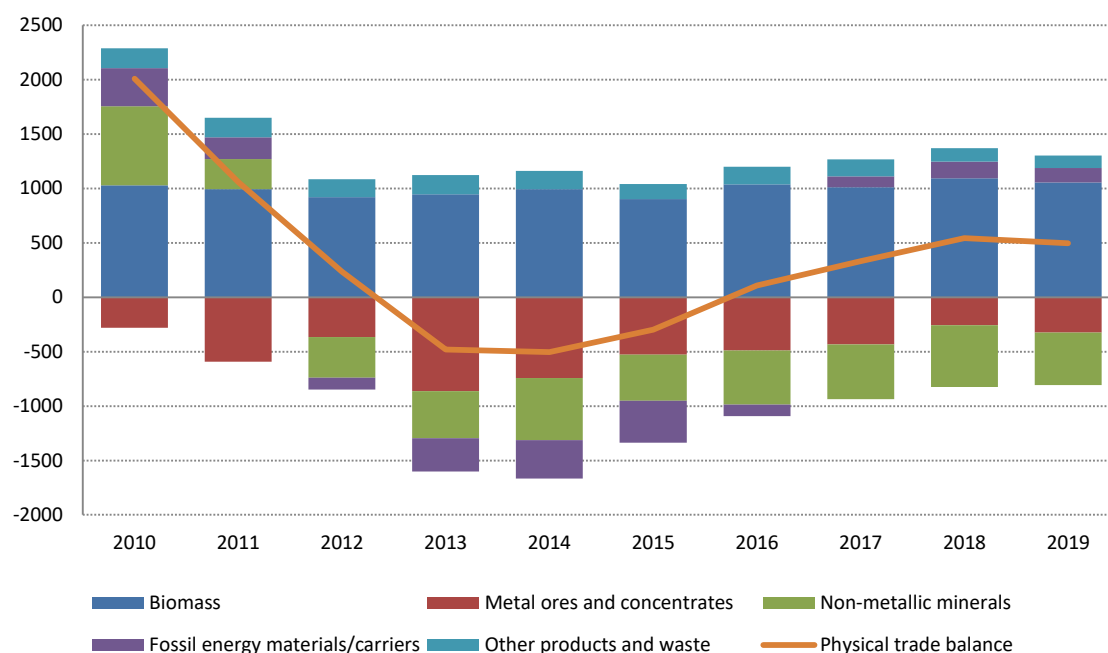**Fig.2 Physical trade balance**   (000 tonnes)

Table 5 shows the material import dependency, whic is the ratio of imports over direct material inputs (DMI) in the Albanian economy. DMI is calculated as the sum of domestic extraction of natural resources and imports of materials. In 2019 the material import dependency reached the value of 17.8%, marking an increase of 1.1 percentage points compared to 2018. During the period 2015 - 2019 the material import dependency has fluctuated in a range between 12.5 % in 2016, to 17.8% in 2019.

In 2019, fossil energy materials had the highest material import dependency, with about 43.1%, followed by minerals and metal concentrates with 30.8%. On the other hand, the lowest material import dependency was reached for non-metallic minerals with 8.6%, followed by biomass with 16%.

Tab.5 Material import dependency   (%)

| Year	2015	2016	2017	2018	2019
Biomass	13.4	14.5	14.4	15.5	16.0
Metal ores and concentrates	34.8	38.9	38.0	33.3	30.8
Non-metallic minerals	5.0	4.1	8.3	7.6	8.6
Fossil energy materials/carriers	34.6	43.4	38.4	36.6	43.1
Other products and waste	**13.0**	**12.5**	**16.6**	**16.7**	**17.8**

The domestic material consumption (DMC) measures the total amount of materials extracted and used from the environment, taking into account the physical balance of trade. In 2019 the DMC reached about 22.4 million tonnes, 2.2 % less compared to 2018. Domestic material consumption is dominated by non-metallic minerals reaching 45.8 % of the total, followed by biomass with 39.2 %, metal ores and concentrates with 8.1 % fossil energy materials with 6.4 %, and other products including imported waste with 0.5 %.

Tab.6 Domestic material consumption (DMC)　　　　　　　　　　　　　　(000 tonnes)

Year	2015	2016	2017	2018	2019
Biomass	8,870.6	9,104.8	9,173.5	9,062.4	8,802.5
Metal ores and concentrates	1,000.5	690.3	924.1	1,509.4	1,824.9
Non-metallic minerals	14,958.8	17,566.5	10,089.2	10,505.5	10,260.5
Fossil energy materials/carriers	1,158.6	1,055.1	1,405.3	1,736.9	1,424.6
Other products and waste	138.9	160.0	157.5	122.5	114.8
Total	**26,127.3**	**28,576.7**	**21,749.6**	**22,936.8**	**22,427.3**

Fig.3 Structure of Domestic material consumption 2019 (DMC)

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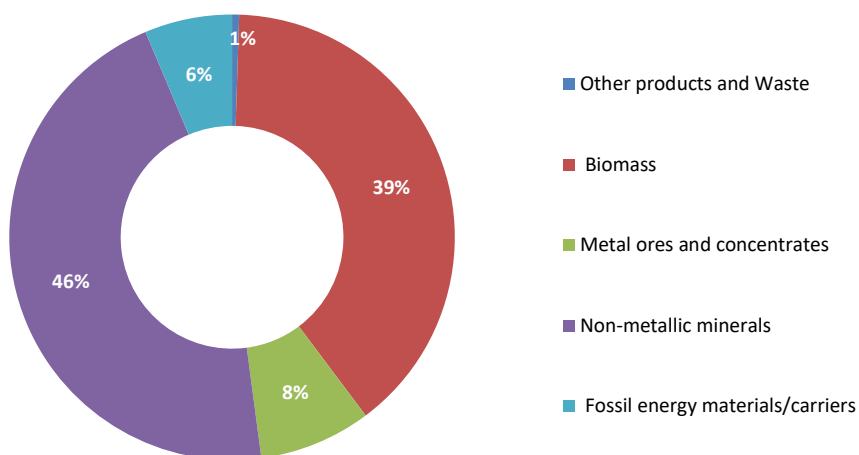
The domestic material consumption per capita in 2019 was about 7.9 tonnes, showing a decrease of approximately 0.1 tonnes per capita compared to 2018, which amounted to about 8 tonnes.

**Tab.6 Domestic material consumption (DMC) per capita** (tonnes / capita)

Year	2015	2016	2017	2018	2019
Biomass	3.1	3.2	3.2	3.2	3.1
Metal ores and concentrates	0.3	0.2	0.3	0.5	0.6
Non-metallic minerals	5.2	6.1	3.5	3.7	3.6
Fossil energy materials/carriers	0.4	0.4	0.5	0.6	0.5
Other products and waste	0.0	0.1	0.1	0.0	0.0
Total	**9.1**	**9.9**	**7.6**	**8.0**	**7.9**

The following figure shows the resource productivity in the Albanian economy for the period 2010 - 2019. Resource productivity is calculated as the ratio between the gross domestic product and domestic material consumption. This represents the amount in Lek generated by the economy of the country for each kilogram of material consumed. In 2019, resource productivity reached the value of 75 Lekë / kg, marking a slight increase of 4 Lekë / kg compared to the previous year.

Fig.4 Resource productivity 2010 – 2019 (Lekë / kg)

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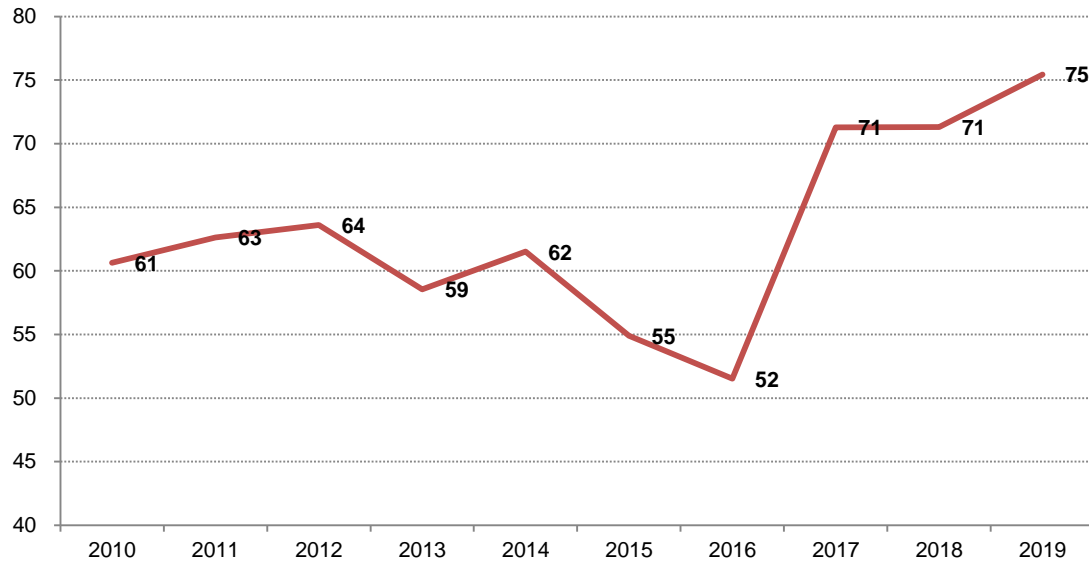
Methodology

The Material flow Accounts (MFA) are one of the modules of the Environmental Accounts which collects complementary data on environment in line with the concept used to compile the System of National Accounts (SNA)

The Material Flow Accounts (MFA) have the main objective to describe the relationship between the domestic economy and its natural environment. It includes the total amount of natural resources and products used in the economy, either directly in the production and distribution of products and services, or indirectly by extracting the materials that will be used for production.

These data are subject to revision. For more information refer to: http://instat.gov.al/en/documentation/quality-in-statistics/

Some of the key categories and main indicators of the material flow accounts are:

Biomass

Biomass includes organic non-fossil materials. According to the definitions of the MFA, the materials extracted from natural resources includes all agricultural products, wild fish and hunting animals. Livestock and livestock products (such as milk, meat, eggs) are not included.

Metal ores and non-metallic minerals

Metal ores and non-metallic minerals are two main material groups of the MFA. According to the definitions of the Material Flow Accounts (MFA), those categories consist of minerals obtained in the mining and construction industry.

Fossil energy materials/carriers

Include sources of oil and other fossil energy materials that have been formed in the geological past from biomass. They include solid substances, liquids and gases.

Domestic extraction (DE)

The domestic extraction (DE) includes the amount of materials (excluding water and air) extracted from the environment for the use of economic purposes.

Domestic material consumption (DMC)

The domestic material consumption (DMC) measures the annual amount of materials extracted and used in the national economy, plus all physical imports, excluding all physical exports.

Physical trade balance (PTB)

The physical balance of trade is equal to physical imports minus physical exports.

Material import dependency (ID): is calculated as the ratio of imports over direct material inputs (DMI) in percentage. The term 'material import dependency' shows the extent to which an economy relies upon imports in order to meet its material needs. Material import dependency cannot be negative or higher than 100%. Values equal to 100% indicate that there are no domestic extractions during the reference year.

$$ID = \frac{Imports}{(Domestic\ extraction + Imports)}$$

Resource productivity designates an indicator that reflects the GDP generated per unit of resources used by the economy.

Data sources

The data used to compile the Material Flow Accounts are administrative data received from the Ministry of Agriculture and Rural Development (MARD), the National Agency of Natural Resources (NANR) Water Resources Management Agency (WRMA) and the Institute of Statistics (INSTAT)

The methodology used for the calculation complies with the Regulation (EU) No. 691/2011 on Material Flow Accounts and Eurostat manuals.