Institute of Statistics
St. Vllazën Huta,
Building 35, Entrance 1
Tirana, ZIP Code 1017
info@instat.gov.al
www.instat.gov.al
Tel: +355 4 2222 411
Fax: +355 4 2222 411

INSTAT
Republika e Shqipërisë
Instituti i Statistikave

Material Flow Accounts

Year 2021

Tirana, 24 April 2023: In 2021, the materials extracted from the domestic natural resources amounted to about 19.1 million tonnes with a increase of 3.2 % compared to 2020. In 2021, the structure of domestic extraction shows that non-metallic minerals account for 44 % of the total, followed by biomass with 39 %, metal ores with 10 % and fossil energy materials and carriers with 7 %.

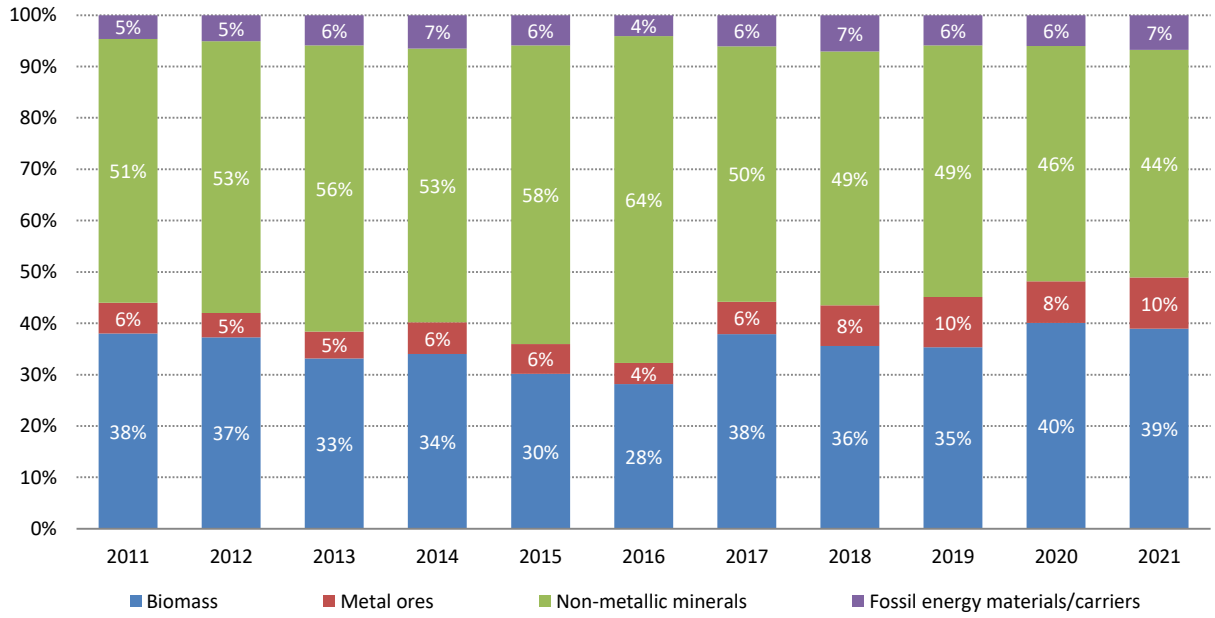
Tab. 1 Domestic extraction (DE)

(000 tonnes)

Year	2017	2018	2019	2020	2021
Biomass	8,164.1	7,970.6	7,747.5	7,422.6	7,454.5
Metal ores	1,356.8	1,766.0	2,150.7	1,492.1	1,915.0
Non-metallic minerals	10,593.3	11,074.6	10,742.5	8,484.6	8,491.9
Fossil energy materials/carriers	1,304.9	1,582.,6	1,291.2	1,113.9	1,250.3
Total	**21,419.1**	**22,393.8**	**21,931.9**	**18,513.2**	**19,111.7**

Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

Fig.1 Structure of domestic extraction (DE)



Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

The total amount of imports of materials in 2021 was about 5.4 million tonnes, which is 11.45 % higher compared to 2020. The largest amount of imports consists of biomass, with 1,499.9 thousand tonnes, followed by non-metallic minerals 1,218.5 tonnes and fossil energy materials 1,197.9 tonnes. Then we have metal ores and concentrates with 1,168.3 tonnes and other products including imported waste with 360.1 thousand tonnes.

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

Year	2017	2018	2019	2020	2021
Biomass and biomass products	1,378.4	1,465.3	1,474.4	1,440.6	1,499,9
Metal ores and concentrates	829.9	883.6	956.4	1,077.3	1,168,3
Non-metallic minerals	954.9	905.9	1,001.0	1,053.1	1,218,5
Fossil energy materials/carriers	813.0	912.6	976.4	1,001.8	1,197,9
Other products and waste imported	302.2	319.1	315.7	312.6	360,1
Total	**4,278.4**	**4,486.5**	**4,733.8**	**4,885.5**	**5,444,7**

Source: Institute of Statistics (INSTAT), INSTAT calculations

Exports of materials in 2021 amounted to around 4.3 million tonnes, which is 5,5 % higher compared to 2020, mainly due to “metal ores and concentrates” whose exports increased by 15.2 %. During 2021 there has been a increase in exports for biomass, with 8.1 % and other products and waste exported with 6 %. Exports of fossil energy materials/carriers biomass and non-metallic minerals decreased by 1% and 0.3%, respectively.

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

Year	2017	2018	2019	2020	2021
Biomass	369.1	373.5	419.3	434,2	469.2
Metal ores and concentrates	1,262.6	1,140.2	1,282.2	1.220,9	1.408.5
Non-metallic minerals	1,459.0	1,475.0	1,493.0	1,472.4	1.467.9
Fossil energy materials/carriers	712.6	758.3	843.1	742.2	735.0
Other products and waste exported	144.7	196.5	200.9	245.0	259.8
Total	**3,947.9**	**3,943.5**	**4,238.4**	**4,114.7**	**4.340.5**

Source: Institute of Statistics (INSTAT), INSTAT calculations

The physical trade balance shows the difference between imports and exports for all material categories and it reached 1,104 thousand tonnes for 2021, which is 333.4 thousand tonnes higher compared to 2020. As it can be seen in Figure 2, the categories 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.

Tab.4 Physical trade balance (PTB)

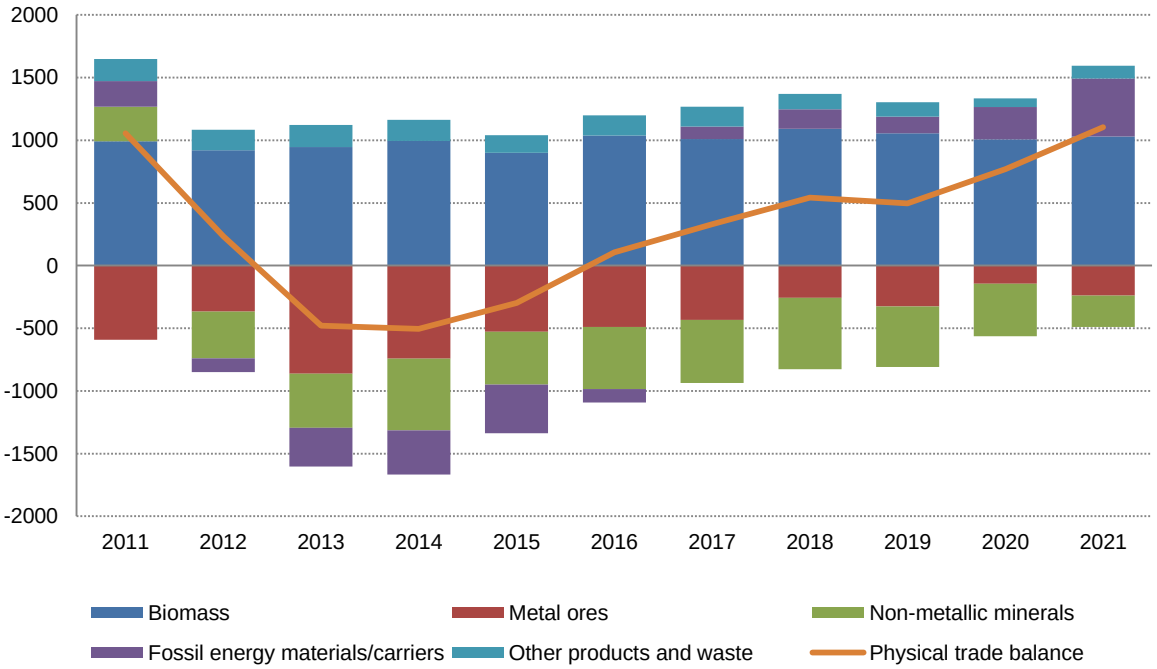
(000 tonnes)

Year	2017	2018	2019	2020	2021
Physical trade balance	**330.5**	**543.0**	**495.4**	**770.8**	**1,104.2**
Import	4,278.4	4,486.5	4,733.8	4,885.5	5,444.7
Export	3,947.9	3,943.5	4,238.4	4,114.7	4,340.5

Source: Institute of Statistics

Fig.2 Physical trade balance

000 tonnes)



Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

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 2021 the material import dependency reached the value of 22.2%, marking an increase of 1.3 percentage points compared to 2020. During the period 2017 - 2021 the material import dependency has fluctuated in a range between 16.6 % in 2017, to 22.2% in 2021.

In 2020, fossil energy materials had the highest material import dependency, with about 48.9%, followed by minerals and metal concentrates with 37.9%. On the other hand, the lowest material import dependency was reached for non-metallic minerals with 12.5%, followed by biomass with 16.8%.

Tab.5 Material import dependency

(%)

Year	2017	2018	2019	2020	2021
Biomass	14.4	15.5	16.0	16.3	16.8
Metal ores and concentrates	38.0	33.3	30.8	41.9	37.9
Non-metallic minerals	8.3	7.6	8.6	11.0	12.5
Fossil energy materials/carriers	38.4	36.6	43.1	47.4	48.9
Other products and waste	**16.6**	**16.7**	**17.8**	**20.9**	**22.2**

Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

The domestic material consumption (DMC) measures the total amount of materials extracted and used from the environment, taking into account the physical trade balance. In 2021 the DMC reached about 20.2 million tonnes, 5 % higher compared to 2020. Domestic material consumption is dominated by "biomass" 42 % "non-metallic" minerals reaching 40.8 % of the total, followed by "fossil energy materials" with 8.5 %, "metal ores and concentrates" 8.3 % and "other products including imported waste" with 0.5 %.

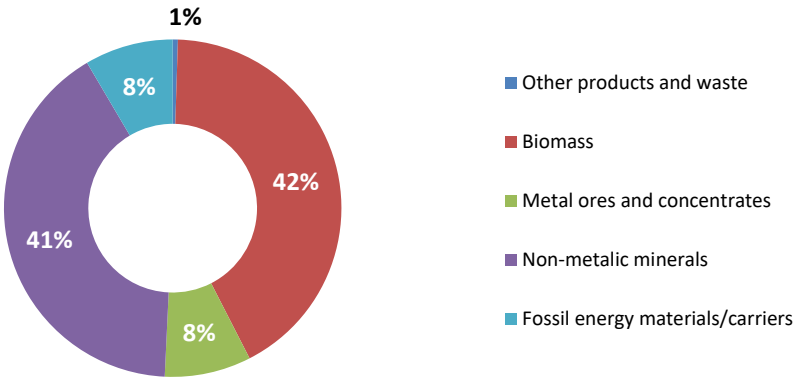
Tab.6 Domestic material consumption (DMC)

(000 tonnes)

Year	2017	2018	2019	2020	2021
Biomass	9,173.5	9,062.4	8,802.5	8,429.0	8,485.,1
Metal ores and concentrates	924.1	1,509.4	1,824.9	1,348.5	1,674.8
Non-metallic minerals	10,089.2	10,505.5	10,260.5	8,065.3	8,242.5
Fossil energy materials/carriers	1,405.3	1,736.9	1,424.6	1,373.6	1,713.2
Other products and waste	157.5	122.5	114.8	67.6	100.3
Total	**21,749.6**	**22,936.8**	**22,427.3**	**19,284.0**	**20,215.9**

Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

Fig.3 Structure of Domestic material consumption 2021 (DMC)



Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

The domestic material consumption per capita in 2021 was about 7.2 tonnes, showing a increase of approximately 0.4 tonnes per capita compared to 2020, which amounted to about 6.8 tonnes.

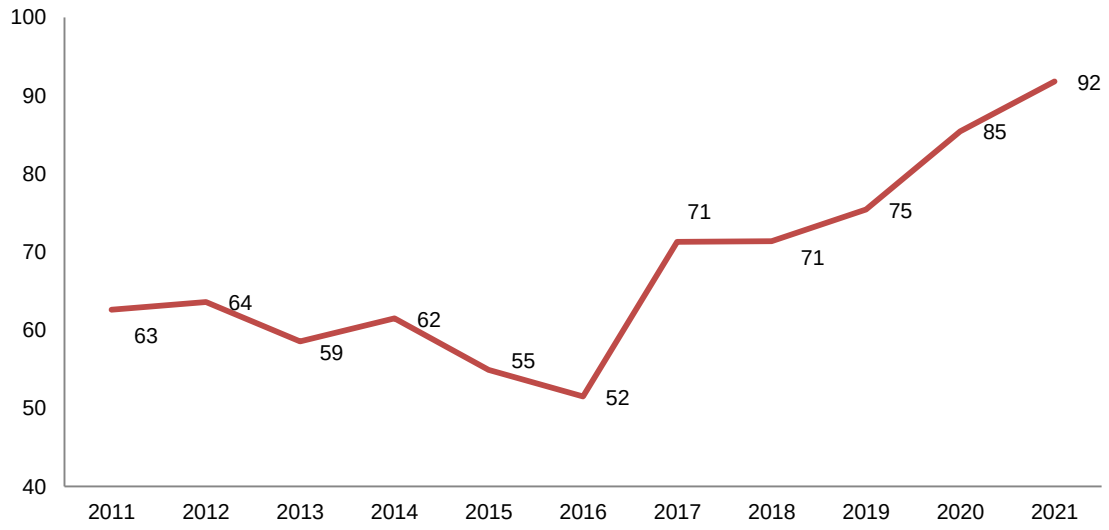
Tab.7 Domestic material consumption (DMC) per capita (tonnes / capita)

Year	2017	2018	2019	2020	2021
Biomass	3.2	3.2	3.1	3.0	3.0
Metal ores and concentrates	0.3	0.5	0.6	0.5	0.6
Non-metallic minerals	3.5	3.7	3.6	2.8	2.9
Fossil energy materials/carriers	0.5	0.6	0.5	0.5	0.6
Other products and waste	0.1	0.0	0.0	0.0	0.0
Total	**7.6**	**8.0**	**7.9**	**6.8**	**7.2**

Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

The following figure shows the resource productivity in the Albanian economy for the period 2011 - 2021. 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 2021, resource productivity reached the value of 92 Lekë / kg, marking a sharp increase of 6.4 Lekë / kg compared to the previous year.

Fig.4 Resource productivity 2011 – 2021 (Lekë / kg)



Source: Ministry of Agriculture and Rural Development, National Agency of Natural Resources, Water Resources Management Agency, INSTAT calculations

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.