

Sustainable Development Indicators in Kosovo

Research

06/2018



Sustainable Development Indicators in Kosovo

Authors: Institute for Development Policy - INDEP

Programme: Sustainable Development

Publication: September 2018

Cover Picture: VisualHunt



Institute for Development Policy - INDEP

All the rights reserved. No fragment of this publication is allowed to be reproduced, saved in any data system or transmitted, in any form or another, without the approval of the publisher. Publication can be shared in electronic form, but only as a whole and for non-commercial purposes.

Supported by:



This research paper is supported by Rockefeller Brothers Fund. The content of this document, including opinions, not neccessarily reflect those of the donors of INDEP, collaborators or board.

Table of Content

Introduction	6
Economic Dimension	10
Economic Development: GDP	11
GDP Development: Remittances	14
Trade: Exports	17
Trade: Imports	18
Year	18
Imports (€ millions)	18
Transport: Length of Roads	21
Transport: Total number of cars	23
Energy: Annual Energy Consumption	24
Energy: Annual Energy Production	25
Number of enterprises per sector: Information and Telecommunication	26
Number of enterprises per sector: Mining and Quarrying	27
Waste generation: Waste Produced Per Person, Sanitary Landfills	29
Waste Generation: Number of Waste Landfills	30
Innovation: Number of Organizations with Eco-Management	31
Innovation: Expenditure on Research and Development (R&D) in Relation to the GDP	32
Social Dimension	33
Public Health: Mortality rate 1-5 years old	34
Public Health: Suicide rate	35
Public Health: Life Expectancy at Birth	36
Public Health: Birth Rate	37
Social Benefits: Social Assistance	38
Social Benefits: Number of Persons Receiving Basic Pension	39
Social Benefits: Number of Persons Contributing Pensions	40
Healthcare Delivery: Total Number of Visits in Hospitals and University Clinical Center	40
Education: Adult Literacy Rate	41
Education: Public spending on Education	41
Security: Violations and Misdemeanors	42
	42

Environmental Dimension	44
Land: Land use	45
Land: Arable and Permanent Crop Land	47
Land: Protected land	48
Land: Degraded land	49
Water: Water Availability	50
Water: Water Availability	50
Air: Air Pollution	51
Political Dimension	52
Total Voter Turnout	53
Youth (Age 18-21) Voter Turnout	53
Number of Municipalities with Websites	54
Citizen Access to Public Services / Number of E-kiosks	55
Speed of Processing Documents: Number of days for an application to be processed	57
E- participation – Telepresence	57
Corruption Rate	59
Official Development Assistance	60
Concluding Remarks	61

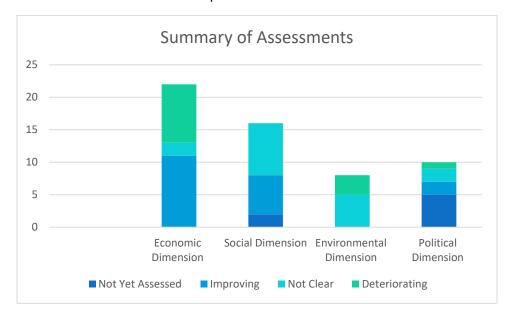
Table 1: Sustainable Development Indictors in Kosovo (as of 2018)

Dimension	Sustainable Development Indicator Themes	Sub-Themes	Indicator
	Economic Structure		
	Leonomie structure	Economic Development	GDP
			GDP per Capita
			Investment Share in GDP FDI inflows
			Debt
			Remittances
		Trade	Balance of Trade
		Haue	Exports
			Imports
			CPI Inflation Rate
		Employment	_
			Unemployment Rate
			Number of Enterprises Information and
Economy	Entreprenuership		Telecommunication
,	Entreprendersing	- · ·	
		Enterprises	Number of Enterprises Mining and Quarrying
			Number of Enterprises Production
			Total Number of Roads
	Consumption and Production Patterns	Transport	Total Number of Cars
	Production Patterns		Total Road Distance Travelled
			1010111000001100011000
		Energy	Annual Energy Consumption
			Annual Energy Production
	Waste	Waste Generation	Waste Produced per Person/Kg
			Number of Waste Landfills
	Innovation		Expenditure in R&D in relation to the GDP
	IIIIOVation	Innovation	Organizations with Eco-Management
		miovacion	Organizations with 200 Management
	Domonius		Life Expectancy at Birth
	Demographics		Birth Rate
Social Well		Demographics	Population Growth Rate No Data
Being			Percentage of Population Living in Hazardous Areas No Data
			- Satu
	Health	Public Health	Suicide Rate

			Mortality Rate 1-5 year olds
		Healthcare Delivery	Number of hospitals/centers
	Social Benefits	Social Benefits	Poverty Assistance
			Contributing Pensions
			State Pensions
	-1	Education	Literacy Rate
	Education		Gov Expenditure on Education
			Number of People Graduating from a university (Number of People who hold a BA Degree)
	Coourity	Crimo	Total number of felonies
	Security	Crime	rotal number of felonies
	Liabilities	Debt	Number of Houses on Mortage (Household loans N/A)
_			
<u> </u>		Land	Protected Land
		Land	
l <u>.</u>	Water		Arable and Permanent Crop Land Degraded Land
Environment	vvater		Degraded Land
		Water	Water Availability
		vvacci	(Water Use)
	Atmosphere		(Water Ose)
		Atomsphere	Air Quality
	Biodiversity		Air Pollution
	,	Flora	Number of Rare Plants No Data
		Species / Fauna	Number of Rare Birds No Data
		Habitats	No Data
	Openess and Participation	Voter Turnout	Total Voter Turnout
			Youth Voter Turnout
<u>_</u>			
<u> </u>			Telepresence
Institutional-		E-government	Number of Municipalities with Websites
Political		E-access of Public Services	Speed of Processing Documents
			E-kiosks
	Global Partnerships	Global Partnerships	Level of Citizens Confidence on Public Institutions No Data
			ODA

Summary of Assessments

The chart below the number of measures which are showing improvement, deterioration or not yet assessed for each dimension. This chart is experimental due to limitations on data.



- 2/4 dimension measured the social and political, showed clear areas that have never been assessed.
 2 of the other dimensions, economic and environmental, had problematic areas but which have been somehow assessed.
- ¾ of dimensions measured the economic, social, and institutional political, showed some form of improvement. Environmental dimension remains one of the most pressing areas that has an urgent need for improvement.
- All of the dimension have an area that is unclear there is a segment that needs to be measured, however either due to the lack of data or no clear elements, has been difficult to assess.
- ¾ dimensions measured the economic, environmental and political, showed an area that is deteriorating. Social dimension, the only one which didn't, has in turn, the largest component that has shown as 'unclear.'

Introduction

Sustainable Development is no longer a new concept in Kosovo; it is an integral part of the National Strategy of Kosovo (2016–2022), the country's top policy document. Aspects of sustainable development are well present in Kosovo legislation, such is the Law on Environmental Protection¹, or the Law on Agriculture and Rural Development², while the concept has become very much usable in day to day political discourse.

Broadly speaking, sustainable development is a concept coined at the World Commission for Environment and Development in 1983, representing a kind of development which would deliver in "meeting the needs of the present without compromising the ability of the future generations to meet their own needs". Since then, the concept of sustainable development has been further shaped, legitimized, and expanded in its meanings, through various national and international events and processes. Yet the core idea behind it remains the same and is constituted around a responsible and farsighted conceptualization of development.

Usually, sustainable development is based on the three pillars of sustainability: economic, environmental and social. It is generally thought to be achieved as a result of a trade-off between these three aspects.



Fig. 1. Sustainable Development Components

In the recent years, many authors have expanded the concept of sustainable development by adding other pillars, be that cultural, political or institutional. In spite of such inputs, sustainable development is generally accepted as a holistic and integrated approach, always aiming for a balance between spheres of life.

The UN has pioneered the work on advancing sustainable development through high level conferences. In 1992, the Earth Summit was organized in Rio de Janeiro, a key global conference on sustainable development. In 2000, the Millennium Declaration Development Goals was signed by 189 countries, as

¹ Law No. No.03/L-025

² Law No. 03/L-098, https://www.kuvendikosoves.org/common/docs/ligjet/2009_03-L-98_al.pdf

part of the attempts of the UN to integrate sustainable development at all levels of policymaking. By 2015, in its Sustainable Development Summit, the UN adopted the 2030 Agenda for Sustainable Development, setting forward the following sustainable goals:

- 1. End poverty in all its forms everywhere
- 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- 3. Ensure healthy lives and promote well-being for all at all ages
- 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- 5. Achieve gender equality and empower all women and girls
- 6. Ensure availability and sustainable management of water and sanitation for all
- 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- 10. Reduce inequality within and among countries
- 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- 12. Ensure sustainable consumption and production patterns
- 13. Take urgent action to combat climate change and its impacts
- 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

In addition to the EU, other actors of global governance have taken up sustainable development goals. Often labelled as a soft-power in the world politics, the European Union (EU) has projected itself as a global leader in the areas of climate change and sustainable development. The EU's Sustainable Development Strategy is already fully focused on sustainability through attaining "a continuous long-term improvement of quality of life" through communities that are "able to manage and use resources efficiently, able to tap the ecological and social innovation potential of the economy and in the end able to ensure prosperity, environmental protection and social cohesion." ³ A strong governance has been defined as a crucial part that goes hand in hand with the strategy in ensuring effective follow-ups and monitoring, and therefore effective implementation. Currently, the European Commission is consecutively focusing on mainstreaming the concept of sustainable development throughout its activities.

Having been under direct administration of the UN and later under supervision of the EU, Kosovo was introduced to the concept of sustainable development relatively early. The civil society has been a core influencer by further undertaking efforts to promote it and has been actively outspoken on the need to recognize it in the policymaking. The institutions, on the other hand, have put efforts, though sporadic, to

³ http://ec.europa.eu/environment/sustainable-development/strategy/index_en.htm

integrate sustainable development in the legislature framework. One such attempt, and to date the most important one coming from the institutions, is the National Development Strategy 2016-2021.⁴ This strategy foresees a development plan that is focused on 'new approach to development policy" that recognizes for a need for the integration of the existing strategies and policies in one axis.

There are four identified pillars where the strategy aims to initiate intervention: on the human capital, with a focus on education; on good governance and rule of law, with a focus on bureaucracy efficiency; on competing industries, with a focus on enterprise development (mines and agriculture), on infrastructure with a focus on energy. This is planned to be carried out through conducting a plan of action, connection with other areas of strategic planning, prioritization of financial support, a fund for development and employment, building of capacities, monitoring of progress and evaluation of results. In spite of its improved quality, the strategy continues to remain merely a pro-forma document that is neither comprehensive, nor thorough. Its focus on human capital, good governance and enterprises, with reasoning that Kosovo's vibrant and young labor force provides cheap labor, for instance, does not say much about human development potential. As Kosovo civil society organizations have pointed out repeatedly, Kosovo's energy policy choices were made arbitrarily and without considering the full picture of energy sector. In its own review of the strategy, INDEP has pointed out that the strategy as a policy document is constructed around the government's decision to build a coal-firing power plant; it was the decision that preceded the strategy and the latter was merely there to justify the former.

Aware of the need to have generally accepted tools to understand and measure development in Kosovo, in 2016 INDEP put forward the first step towards compiling a comprehensive list of sustainable development indicators. Indicators are useful tools that can lead to better decisions and more effective actions by simplifying, clarifying and making aggregated information available to policymakers, to make more informed decisions. They are widely used globally and by national governments, at all-levels of policymaking. Where there are sufficient data to be compared, they help to measure if there has been clear improvement, deterioration or if there has been little or no overall change towards a sustainable economy, society, environment and institutions.

In this report, INDEP takes pride in presenting the first comprehensive efforts to project universally applied indicators for sustainable development in Kosovo. This report, which is based on a set of monitored indicators between 2009 and 2017, represents research and analytical activities conducted throughout 2017 and 2018, constructed through a process of identifying and mapping indicators of sustainable development which would be supported by sufficient relevant data.

The indicators have been grouped into four domains: 1) social indicators, concerned with the improvement of the quality of life of the society; 2) economic indicators, concerned with generating an effective socio-economic development; 3) environmental indicators, representing conditions of the state and protection of the natural environment; and for the first time a fourth domain is explored; 5) the institutional-political indicators, which explore challenges connected with global partnership and good governance.

Within each domain, themes have been separated with the intention to reflect on sustainable development aims and priorities. The themes, and sometimes, subthemes, are separated in indicators.

⁴ http://www.kryeministri-ks.net/repository/docs/Strategjia_Kombetare_per_Zhvillim_2016-2021_Shqip.pdf

⁵ Institute for Development Policy (2016) Sustainable Development Indicators in Kosovo Trends, challenges and opportunities.

Each indicator attempts to show how well the country is doing in that specific segment. The answers that are deducted from the indicator are juxtaposed with those from another indicator. When repeating this process with several indicators, this creates a difference in values, which then gives an idea about the reality. For example, if we explore the economic dimension, specifically the economic structure, we have three indicators: exports, imports and the balance of trade. Each of them shows a different side of the subtheme of trade – how much we sell, how much we buy, and how much there is a flow between the two.

Kosovo Statistics Agency is the main source where the data has been extracted from. However, taking into account the challenges that come with sustainable development being a wide multidimensional concept and the scarcity of data, it has been a challenging process to gather data that reflect themes and subthemes that sustainable development explores. At the same time, the data not being ready available throughout the years, has posed an immense challenge to determine clear trends. In order to offer a more complete picture and to offer accurate insights, additional reports from the government agencies were explored, as well as other online reliable sources.

Data for each indicator are overviewed and in that context analyzed. This is carried out firstly by describing the relevance in relation with the grand scheme of the global situation and then by presenting the Kosovo trends.

Economic Dimension

Economic sustainability is the component that has to do with profits – it is about supporting a level of production indefinitely, so to produce at a certain level without compromising the future generations' ability to do so.

The economic dimension of sustainable development is one of the most important components, not to say overlooked components necessary to achieve a thorough sustainability. If it is weak, then the system as a whole is unsustainable.

As a pillar it touches on several areas, from financial sustainability and income generation (employment, remittances) to agricultural development and natural resources and energy (use of coal, renewable energy), as such it is in direct relationship with the three other pillars. Even though now most of the attempts are made in the direction of merely ensuring continuity in economics for the generations to come, economic sustainability is also about the present – ensuring that there is circular economy and green growth, to then facilitate the lives of the newer generations.

In our designed platform, there are a number of economic indicators explored, which aim to give precisely a complete picture of the present economic situation, up to 2017. This task comes with its complexities, mainly due to the lack of availability of data. Hence, this platform will explore various themes and the respective indicators, in order to assess and provide an overview. It is notable, that this dimension, apart from the traditional indicators, will also explore briefly the innovation area in Kosovo.

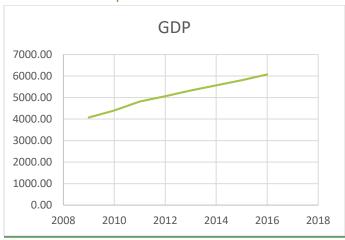
INDEP's engagement in this area is in line with the commitments of the international organizations in achieving a sustainable global economy. The United Nations post-2015 Millennium Development goals are focused on global development and foresee more employment, specifically target 1-B that seeks to "achieve full and productive employment and decent work for all, including women and young people," a target that is relevant for Kosovo, which as we will come to see has a high unemployment rate and high percentage of a young labor force. The European Commission's efforts are focused on preventing further depletion of resources and are headed towards a future of renewable energy, also relevant, considering the issue of building a new power plant that is coal based in Kosovo. These are just some examples of the ways that global economic development is interlinked with development of smaller countries.

In spite the fact that Kosovo is not yet a member of the United Nations and European Union, aspiring to become one, as well as its pledge to meet *acquis* requirements, makes is urging and imperative to promote and achieve economic development that is sustainable.

⁶ The United Nations, Millenium Development Goals, accessible at: http://www.un.org/millenniumgoals/poverty.shtml

⁷ European Commission, Renewable Energy Directives, accessible at: https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energy-directive

Economic Development: GDP



		GDP
	GDP (current	(constant
Year	prices)	prices)
2009	4069.6	N/A
2010	4402	N/A
2011	4814.5	4.594,6
2012	5058.8	4.949,8
2013	5326.6	5.232,9
2014	5567.5	5.391,8
2015	5.807,0	5.795 <i>,</i> 5
2016	6.070,1	6.043,4
2017	6.282,2	6.296,9

Fig. 2. Economic Development of Kosovo⁸

Relevance

Gross Domestic Product – GDP, is one of the primary indicators of the *size* of the economy. It measures the total value of all goods and services produced in a country during one year, including: investments, government spending, consumption plus the difference between how much a country has sold (exports) and bought (imports); so everything within a country's borders. GDP should not be confused with Gross National Product (GNP) which measures the goods and services produced in the country's citizens during one year, by its citizens, including those citizens who live outside of the country. While GDP is a crucial element of the economy, it is important to recognize that GDP does not measure the well-being of the population.

While there are no data available for GPN, INDEP has decided to display the GDP data in its two forms: one that is adjusted for prices and is comparable internationally, also known as the real GDP and the one that is not adjusted for prices, also known as the nominal GDP. Generally, a larger real GDP is desirable.

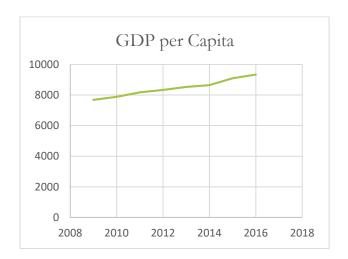
Trends

There is a growing trend. More precisely, since 2009, the GDP has increased at a steady trend. The largest GDP increase per year has been in 2011 (412.5), whereas the lowest increase per year in 2015 (204). The latest data available, for the year 2017, shows the GDP to be at 6282.2, an all-time high. The Kosovo Statistics Agency indicates that the real GDP increase in 2017 was 3.7 % (based on preliminary evaluation in quarterly basis). If the GDP trends continue in this line, it shows the prospect for future growth.

⁸ Kosovo Statistics Agency GDP, accessible at:

http://askdata.rksgov.net/PXWeb/pxweb/sq/askdata/askdata__07%20National%20and%20government%20accounts__National%20accounts__Quarterly%20national%20accounts/gdp16.px/?rxid=ad787284-363a-44a5-bb3d-0f067afa36b7, and Kosovo Statistics Agency Annual Report 2017, accessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

GDP per Capita (adjusted for Purchasing Power Parity)



	GDP per	GDP per	GDP per
	Capita in	Capita in	Capita in EUR
	USD	USD	not Adjusted
	Adjusted for		
Year	PPP		
2009	7714.09.1	3203.66	N/A
2010	7905.64	3283.21	N/A
2011	8215.22	3411.78	N/A
2012	8386.59	3482.95	N/A
2013	8584. 48	3565.13	2,930
2014	8698.29	3612.4	3,084
2015	9154.94	3802.05	3,277
2016	9451.91	3925.38	3,356
2017	9795.83	4068.21	3,479

Fig. 3. GDP/capita in Kosovo⁹

Relevance

Gross Domestic Product per Capita measures the amount of goods and services produced per person in the country. It is obtained by dividing the GDP per population. The GDP per Capita is usually adopted for Purchasing Power Parity - PPP. PPP takes into account the exchange rates of currency between countries, therefore helps to understand the *real* amount of goods and services that can be bought with the money that the GDP indicates that is available per person. Generally, a higher GDP per capita adjusted for PPP signals that a person is able to buy more, therefore signaling prosperity and a higher standard of living.

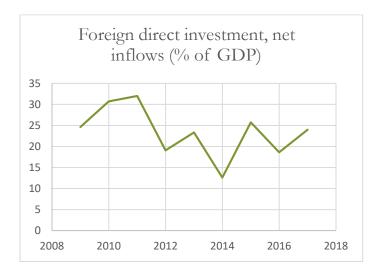
Trends

The data indicates increasing trends of the GDP per capita for Kosovo. That means that a citizen in Kosovo has experienced an increased standard of living since 2009. If we were to share the GDP in equal portions for each citizen, one such portion for a year would be 4068.21 dollars for 2017 or about 339 dollars per month. When adjusted for PPP, this amount would be 816 dollars. That means that 339 dollars can buy approximately 816 dollars worth of goods and services. Unfortunately, due to the lack of data, we don't know how much it would be in euros. From what we have, it looks like the equivalent of the *not* adjusted GDP would be 289 euros.

⁹ The GDP Capita data adjusted for PPP and not adjusted are taken from Trending Economics, accessible at: https://Trendingeconomics.com/kosovo/gdp-per-capita-ppp; The data for GDP per Capita in EUR for the year 2014, 2015 and 2016 are from Kosovo Statistics Agency. Due to the lack of availability, the

data for the rest of the years are taken from Focus Economy, available at: https://www.focus-economics.com/country-indicator/kosovo/gdp-per-capita-EUR

GDP Development: Foreign Direct Investments (FDIs)



	FDI Annual	Foreign direct
	(in EUR	investment,
	million)	net inflows
Year		(% of GDP)
2009	287.4	24.6
2010	368.5	30.7
2011	384.4	32.0
2012	229.1	19.0
2013	280.2	23.3
2014	151.2	12.6
2015	308.8	25.7
2016	220.0	18.6
2017 ¹⁰	287.8	23.9 ¹¹

Fig. 4. FDI, net inflows

Relevance

Foreign Direct Investment (FDIs) are investments made by non-resident investors in a particular country. For many developing countries, FDIs can be a major source of external financing. They can help with the growth of the private sector; for a landlocked country such as Kosovo, with low production, misbalance in trade and weak private sector, FDIs can be the only means for development.

Trends

There are fluctuations. There's a slight increase of FDI's for Kosovo during the past year. That means there was more investment this year than the previous year, however when looked comparatively with other years, especially the early 2010s, it is not as high. Based on the data of the last two years, there is a prospect of an increasing trend.

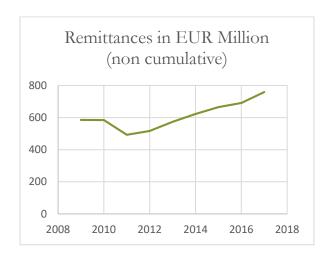
This can be interpreted positively because there is investment, i.e. to some degree the country is an attractive area for various investors to put funds in; but it also means that more money is coming in from investors than it is generated from exports, Kosovo's own production. FDIs currently constitute about 24 % of the total Gross Domestic Product (GDP). An interesting fact is that they mainly concentrated on real estate investments. ¹²

¹⁰ Central Bank of Kosovo: Direct Investment Inflows and OutFlows, accessible at: https://bqk-kos.org/?id=55

¹¹ Trading Economics (the data is presented by averaging the data from four quarters of each year) accessible at:

¹² Central Bank of Kosovo: FDIs According to Sector, accessible at https://bqk-kos.org/?id=55

GDP Development: Remittances



	Remittances
	in EUR
	Million (non
Year	cumulative)
2009	585.7
2010	584.3
2011	492.5
2012	516.4
2013	573.4
2014	622.3
2015	665.5
2016	691.0
2017	759.2 ¹³

Fig. 5. Remittances in Kosovo

Relevance

Remittances are the amount of funding that comes from outside of the country, but unlike FDIs, it comes from a worker abroad to the home country. This is usually a sum of money in the form of gifts or payments. Remittances make up the largest category of the secondary income in Kosovo.

The data for remittances are taken from the Central Bank of Kosovo and are non-cumulative.

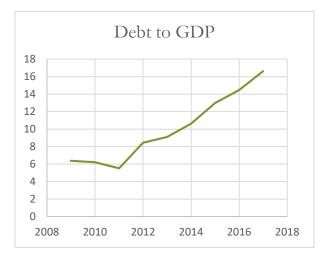
Trends

The remittances show an increasing trend. It is interesting to note that the trends have been increasing for each year with an exception in late 2013 and early 2014, when there was a historic sudden low of only 41.60 million euros in January. This could have been due to the great wave of migrants that year, who left Kosovo and moved towards diaspora, the source of remittances. However, according to the data from Central Bank of Kosovo, the trends are increasing and 2017 marks the highest amount of remittances that have been received in Kosovo, reaching a value of 759.2 million euros, an increase of 9.9 percent from the previous year. Remittances that come in Kosovo, come mainly from Germany and Switzerland (22.5 % of all the remittances) and to some extent from the United States of America (7.0 %). The means through which are sent are primarily through money transfer agencies, followed by other means, and lastly banks.

¹³ Central Bank of Kosovo: Annual Report 2017, accessible at: https://bqk-kos.org/repository/docs/2017/BQK_RV_2017.pdf and Remittances by Channels, accessible at: https://bqk-kos.org/?id=55

¹⁴ Trending Economics, Kosovo Remittances, extracted from Central Bank of Kosovo, accessible at: https://tradingeconomics.com/kosovo/remittances

Economic Development: Debt to GDP



Debt to GDP	
Year	GDP
2009	6.37
2010	6.22
2011	5.51
2012	8.44
2013	9.1
2014	10.63
2015	12.98
2016	14.47
2017	16.63

Fig. 6. Debts in Kosovo¹⁵

Relevance

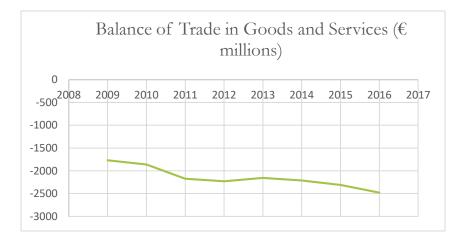
The Debt-to-GDP Ratio is the proportion of what a country has totally borrowed and what is has totally produced (GDP). This ratio is an indicator of a country's ability to produce and sell goods that are sufficient to pay back debts, without entering into new debts in the process. A low debt-to-GDP ratio indicates an economy that produces and sells goods and services sufficient to pay back debts without incurring further debt.

Trends

According to Trading Economics, Kosovo recorded an increasing alarming trend of debt-to-GDP- ration. In 2017, the data recorded a debt of 16.63, meaning that the current debt is equivalent to 16.63 of the country's total product. The ratio had an average of 10.03 percent from 2009 until 2016, reaching an all-time high of 16.63 percent in 2016 and a record low of 6.31 percent in 2011.

¹⁵ Trading Economics, Kosovo Government Debt to GDP, extracted from Ministry of Finance, accessible at: https://tradingeconomics.com/kosovo/government-debt-to-gdp

Trade: Balance of trade



Year	Balance of
	Trade in Goods
	and Services (€
	millions)
2009	-1770.2
2010	-1861.8
2011	-2173.2
2012	-2231.5
2013	-2155.2
2014	-2213.8
2015 ¹⁶	-2309.4
2016	-2480
2017	N/A

Fig. 7. Balance of Trade

Relevance

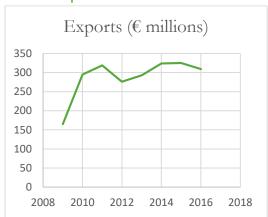
The balance of trade (BOT) is the difference between a country's imports and exports for a specific time period. It is also the largest component of the balance of payments. A country that has more goods and services than it exports has a trade deficit; whereas a country that exports more goods and services than it imports has a trade surplus. BOT is favorable in most cases to have a trade surplus, because nations prefer to sell more and receive more capital. This translates in a higher standard of living. In addition, it measures the relative strength of a country's economy versus other countries' economies and the flow of trade between nations.

Trends

The BOT trends in Kosovo are alarmingly negative, and becoming increasingly so [negative]. That means that the imports are dominant compared to exports. In other words, the country is at a trade deficit, as it buys more goods and services than it sells. Since 2009, this trade deficit has grown from - 1770.2 to -2480 up to date (2016). This is an unfavourable balance because it presents a large trade gap.

¹⁶ Based on the Ks. Stats. Agency 2016 2017 are not available: askdata.rks-gov.net/PXWeb/pxweb/en/askdata/askdata__Country and regional data/trade_eurostat01.px/table/tableViewLayout1/?rxid=f81b30b9-6944-42e9-bdfa-726b83f624ee

Trade: Exports



Year	Exports (€
	millions)
2009	1655. 5
2010	2959. 5
2011	3191. 6
2012	2761. 0
2013	2938. 4
2014	3245. 2
2015	3252.9
2016	3096. 3
2017 ¹⁷	3780. 1

Fig. 8. Exports

Relevance

Exports expresses the sale of goods from one country to another country. Exports are important for many reasons: not only do they facilitate trade and add to the producing nation's gross output, but they are a stimulator of employment, production and overall revenues. In many cases, the role of exports take a wider role, such as that of diplomacy.

Generally, more exports mean the country is better off. Historically, Kosovo has had a low rate of exports. In fact, the ratio between exports and imports has been rather high.

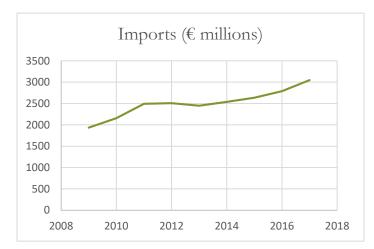
Trends

Exports show a slight increasing trend. The lowest amount of exports was in 2009, and then gained a type of momentum from the year 2012 and onwards; with a noticeably lower amount in 2016. Again, the momentum was gained 2017, which also marks the highest rate up to now. Interestingly enough, it looks like the historically big gap between exports and imports, with imports being higher, is not the case anymore.

¹⁷ The data was collected by adding the following categories: :Food and Beverage, Industrial supplies not elsewhere specified, Fuels and lubricants, Capital goods (except transport equipment), and parts and accessories thereof, Transport equipment and parts and accessories thereof, Consumer goods not elsewhere specified, Goods not elsewhere specified. 2016, 2017 http://askdata.rks-

 $gov.net/PXWeb/pxweb/en/askdata/askdata_External\%20 trade_Yearly\%20 indicators/tab01.px/table/tableViewLayout1/?rxid=f81b30b9-6944-42e9-bdfa-726b83f624ee$

Trade: Imports



Year	Imports (€ millions)
2009	1935.5
2010	2157.7
2011	2492.4
2012	2507.6
2013	2449.1
2014	2538.3
2015	2634.7
2016	2789.7
201718	3047.2

Fig. 9. Imports

Relevance

Imports are the amount of good that are bought from a country. Imports can show the goods that a country lacks, therefore needs to acquire from a different country. At the same time they can be important individual consumers, as they can allow them to enjoy goods otherwise not available. They are important for growth, if they are in a healthy balance with exports. Generally, higher imports and low exports, unless they generate revenue from the country from taxes and tariffs, are not desirable.

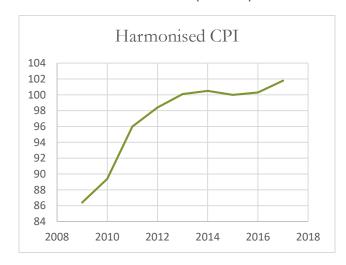
Trends

Kosovo has had generally a high rate of imports, yet with a falling tendency In fact, imports have almost never experienced a significant decrease, with the only exception being in 2013. Following this year, imports have continued to increase and the latest available data from 2017, indicates the highest rate of imports that Kosovo has had.

¹⁸ The data was collected by adding the following categories: :Food and Beverage, Industrial supplies not elsewhere specified, Fuels and lubricants, Capital goods (except transport equipment), and parts and accessories thereof, Transport equipment and parts and accessories thereof, Consumer goods not elsewhere specified, Goods not elsewhere specified. 2016, 2017 http://askdata.rks-

 $gov.net/PXWeb/pxweb/en/askdata/askdata_External\%20 trade_Yearly\%20 indicators/tab01.px/table/tableViewLayout1/?rxid=f81b30b9-6944-42e9-bdfa-726b83f624ee$

Prices: CPI Inflation Rate (annual)



Year	Harmonised CPI	Annual Change
	2015=100	in Percentage
	Annual Average	(%)
2009	86,4	-2,4
2010	89,4	3,5
2011	96,0	7,3
2012	98,4	2,5
2013	100,1	1,8
2014	100,5	0,4
2015	100,0	-0,5
2016	100,3	0,3
2017 ¹⁹	101,8	1.5 ²⁰

Fig. 10. CPI

Relevance

Harmonized Consumer Price Index (Harmonised CPI) is an indicator compiled from a harmonized methodology among EU countries to measure inflation as experienced by consumers on day by day basis. CPI expresses the current prices of a basket of goods and services in terms of the prices during the same period in a previous year, to show effect of inflation on purchasing power, i.e. the general rise of the prices to the extent to which a household or firm, can purchase goods or services.

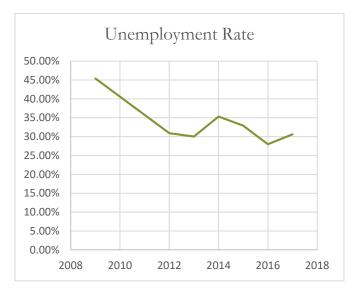
Trends

In Kosovo, the CPI inflation rate indicates a continuing increasing trend. At present it stands at 1.5 percent, which means that the prices have experienced an increase of 1.5 percent between the base year and the current year. So, an item costs for 1.5 percent more in 2017 than it did on the base year. Further, in this context, it means that the price increase is comparatively lower with regards to the previous years. It is important to note that CPI rate does not account for changes in product quality, introduction of new goods and the product substitution during inflationary times.

¹⁹ Kosovo Statistics Agency HCIP accessible at: http://askdata.rks-gov.net/PXWeb/pxweb/sq/askdata/askdata_03%20Prices__01%20Consumer%20Price%20Index/cpi01.px/table/tableViewLay out1/?rxid=3f3923fb-e53d-4af3-89cb-2d046a8e4c38

²⁰ Kosovo Statistics Agency, Annual Report 2017, accessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

Labor: Unemployment Rate



Year	Rate
2009 ²¹	45.4%
2010	N/A
2011	N/A
2012 ²²	30.9 %
2013	30.0 %
2014	35.3%
2015	32.9%
2016 ²³	28.0%
2017 ²⁴	30.6%

Fig. 11. Unemployment Rate

Relevance

The unemployment rate indicator measures the number of people who are not working. It is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labor force. Indicator is calculated on the basis of the Labour Force Survey. A low employment rate is generally desired. Employment policy should be aimed at creating more workplaces, encouraging people to work, improving adaptability of workers and enterprises and increasing investment in human capital.

In Kosovo, the data are scarce and differ among surveys, and are missing for some years. The notions based on which categories are put forward, are also different. Taking into account these two impediments, INDEP decided to use the data from various available reports throughout the years of labor force surveys from the Kosovo Statistics Agency.

Trends

The unemployment rate for 2017 stands at 30.6%. This is a very high unemployment rate. The ideal unemployment stands somewhere at 5%, still very far for Kosovo. When looking only at Kosovo, the current unemployment rate, however, indicates a decreasing trend throughout the years (with the exception of 2016). According to Labor Force Survey, the non-active workforce is quite high, 57.1 %, especially when comparing females with 80.1 % in relation to the males 34.3 %. It should be noted here

²¹ Kosovo Statistics Agency, Labor Force Survey, accessible at: http://ask.rks-gov.net/media/1689/rezultatet-e-anketes-se-fuqise-punetore-2009.pdf

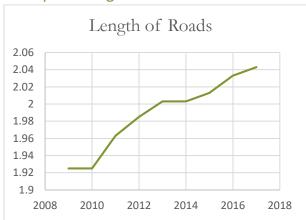
²² Kosovo Statistics Agency, Labor Force Survey, accessible at: http://ask.rks-gov.net/media/1684/rezultatet-e-anketes-se-fuqise-punetore-2015-ne-kosove.pdf, including the year 2012, 2013, 2014, 2015 (p. 12)

²³ Kosovo Statistics Agency, Labor Force Survey, accessible at: http://ask.rks-gov.net/sq/agjencia-e-statistikave-te-kosoves/add-news/anketa-e-fuqise-punetore-afp-2016

²⁴ Kosovo Statistics Agency, Labor Force Survey, accessible at: http://ask.rks-gov.net/sq/agjencia-e-statistikave-te-kosoves/add-news/anketa-e-fuqise-punetore-afp-tm4-2017 and Kosovo Statistics Agency Annual Report 2017.

that there are discrepancies between different methodologies when it comes to unemployment data, whereby INDEP has only used official data.

Transport: Length of Roads



Year	Length of Roads
2009	1.925,1
2010	1.925,1
2011	1.963,1
2012	1.985,5
2013	2.003,1
2014	2.003,1
2015	2.013,4
2016	2.033,4
2017 ²⁵	2.043,4

Fig. 12. Lengths of Roads

Relevance

Transport is a key contributor to economic growth, prosperity and societal well-being. Roads, as physical links, ensure connectivity across places, and as such are a key contributor to trade, movement, tourism, and many other areas of economy and public life.

Physical links across Kosovo have increasingly improved through years of investments. These intertwined projects have resulted in a network of 630 kilometers only of main roads, which in turn have enabled better connectivity within Kosovo as well as between Kosovo and the region.

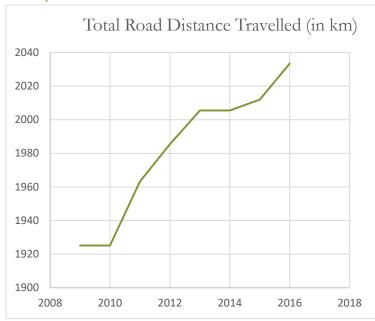
The transport connectivity, however, requires that we consider some additional necessities. One of them is tackling and controlling transports' contribution to gas emissions; its contribution to traffic congestion, especially with regards to facilitating and reducing the costs of the movement of goods; and ensuring an overall sustainable transport that takes into consideration all aspects of public health.

Trends

Since 2009 until 2016 the length of total roads in Kosovo has steadily increased. This number includes three categories of roads - highways, regional and national roads. It is interesting that the vast increase in the length of roads has been on the category of highways, being 0,0 in 2009 and going to 98 in 2016. In 2017, there were 108, 0 highways, 630, 4 national, and 1,305,0 regional roads.

²⁵ Kosovo Statistics Agency, accessible at: http://askdata.rks-gov.net/PXWeb/pxweb/sq/askdata/askdata__Transport/tr06.px/table/tableViewLayout1/?rxid=0b4e087e-8b00-47ba-b7cf-1ea158040712/ The unit is not stated as Kosovo Statistics Agency. However the data is inferred to be the length of the roads in km, rather than a different unit, such as the number of the roads.

Transport: Total road distance travelled



Year	Total Road Distance Travelled (in km)
2009	1925.1
2010	1925.1
2011	1963.2
2012	1985.5
2013	2005.5
2014	2005.5
2015	2012
2016	2033.4
2017	N/A

Fig. 13. Road Distance Travelled

Relevance

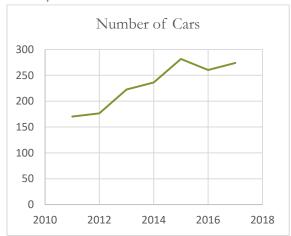
Measures the traffic volume expressed in kilometers by road vehicle, usually specified per year, inside a country.

This is an important indicator because it shows the traffic volumes on national road networks, specifically how much the roads are being used. It could also indicate the amount of pollution produced in relation to the length of the roads travelled.

Trends

The data indicates increasing trend. The peak is the latest year for the available data, that of 2016. However, the increase in this distance seems to be that of a slow rate: the distance seems almost unchanged in the first two years, then it has increased significantly for about 30 km; later, for the next two years the amount is again the same, and later it continues to increase. The total distance travelled as per 2016 was 2033.4. There are no data available for 2017.

Transport: Total number of cars



Year	Number of Cars
2009	N/A
2010	N/A
2011	170.32
2012	176.39
2013	222.53
2014	236.14
2015	281.84
2016	260.29
2017 ²⁶	273.86

Fig. 14. Number of cars

Relevance

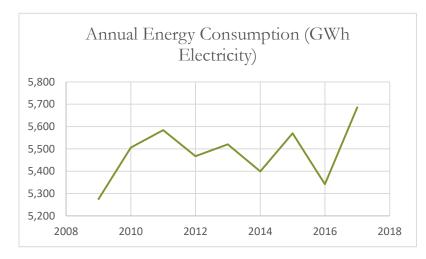
The number of cars measures the total number of cars in Kosovo. This is important as indicator of the overall pollution produced but also as a measure of household capacities to have access to transport (excluding public transport). It may also give an idea about the volume of the traffic.

Trends

This indicator follows an increasing trend each year, peaking at the year 2017 with about 273 thousand cars. This category measures only the number of cars, and not other vehicles such as small buses, or those means of transportation under 3.5 tons or over 3.5 tons, as specified at the data available from Kosovo Statistics Agency. This is the highest number of cars that has been registered, with the exception of the year 2015.

²⁶ Kosovo Statistics Agency, accessible at: http://askdata.rks-gov.net/PXWeb/pxweb/sq/askdata/askdata__Transport/tr05.px/table/tableViewLayout1/?rxid=0b4e087e-8b00-47ba-b7cf-1ea158040712/

Energy: Annual Energy Consumption



Year	Annual Energy	
	Consumption/Demand	
	(GWh Electricity)	
2009	5,275	
2010	5,506	
2011	5,584	
2012	5,467	
2013	5,520	
2014 ²⁷	5,399	
2015 ²⁸	5,570	
2016 ²⁹	5,342	
2017 ³⁰	5,686	

Fig. 15. Energy Consumption

Relevance

Annual energy consumption measures the overall amount of power used by both the households and the industry in a given year. It measures how sustainable the community is — it shows how much energy is consumed for everyday activities such as lighting to more complex energy uses such as in production. Generally, if the energy generated comes from non-renewable resources, the desirable effect is energy efficiency, and subsequently, more energy conservation.

Trends

The energy consumption for the past years has followed what looks like an increasing trend, with a few exceptions. In 2016, there was a sudden and drastic decrease, the most notable since 2009. Such decreases have been present almost every other year. Therefore, there are no real trend to be established. The highest consumption has been in 2017 at 5,686 which is at the same time, the current situation. It is important to note that based on the reports from the Office for Energy Regulation, there is unauthorized consumption of energy, reaching 17.3 % of the total demand, from which 5. 31 % is unbilled energy from northern Kosovo.

Office (pg.43), http://eroof the Regulatory Energy, Report 2014 accessible at: Annual ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_ZRRE.pdf, including data 2009-2014 http://ero-Office of the Regulatory Energy, Annual Report 2015 41), accessible (pg. ks.org/2016/Raportet/Raporti Vjetor 2015 ZRRE shq.pdf Office of the Regulatory Energy, Annual Report 2016 (pg. 69), accessible at: http://eroks.org/2016/Raportet/Raporti%20vjetor%202016%20%20ZRRE_alb.pdf ³⁰Office of the Regulatory Energy, Annual Report 2017 62), accessible http://ero-(pg. at: ks.org/2017/Raportet/Raporti_vjetor_2017_ZRRE.pdf

Energy: Annual Energy Production

Year	Annual Energy Bruto	Annual Energy	Total	Annual Energy Bruto Production (TC)
	Production (TC)	Bruto		
		Production		
		BRE + HC		
2009 ³¹	4676	122	4,798	5259.9
2010 ³²	4880	158	5,037	5480.9
2011 ³³	5062	105	5,167	5696.3
2012 ³⁴	5218	96	5,314	5847.2
2013 ³⁵	5719	143	5,862	6248.3
2014 ³⁶	4742	102	4,844	5324.1 ³⁷
2015 ³⁸	5361	142	5,503	5978.7
2016 ³⁹	5061	235	5,835	6248.8
2017 ⁴⁰	5121	179	5,300	5725.9

Relevance

The amount of energy produced is crucial to determining the amount of energy production by a country; in other words, it shows the use of resources such as a coal, lignite, peat, crude oil, natural gas liquids. At the same time, it is important to determine the ability of the energy production system to determine the energy needs of the population. Data are reported in Gigawatt hours (GWh). Kosovo has installed capacities of production of 1,560 MW. It is estimated that the actual operational capacity is 1,038 MW. The largest portion are lignite power plants Kosovo A and Kosovo B (92.5 %) followed by hydropower plants and renewable energy sources (about 5 %).

The data for exact energy production differ between the Kosovo Statistics Agency, as shown on the table, and the reports of the Office for Regulatory Energy.

Trends

For the past eight years, energy production has increased for about 5% more in a year. This yearly increase trend average includes two exceptional years: 2014 when energy production was at an all-time low (-3% from the previous year) and 2015 which marked a bursting increase (23% from the previous year). The highest production recorded is in 2016, whereas in 2017 it is noticeable a decrease. These production amounts are gross, and do not account for energy loses, of commercial and technical nature which are estimated to be at about 30% (according to Office for the Regulatory Energy). The production in 2017 has

³¹ http://ero-ks.org/Annual%20Report/Annual%20Report%202009/Raporti Vjetor 2009 shq.pdf

 $^{^{32}\,}http://ero-ks.org/Annual\%20Report/Annual\%20Report\%202010/Raporti_Vjetor_2010_ZRRE_final_alb.pdf$

³³ http://ero-ks.org/Annual%20Report/Annual%20Report%202011/Raporti Vjetor 2011.pdf

³⁴ http://ero-ks.org/Annual%20Report/Annual%20Report%202012/Raporti_Vjetor_2012_ZRRE_final.pdf

³⁵ http://ero-ks.org/Annual%20Report/2013/Raporti Vjetor 2013.pdf

³⁶ http://ero-ks.org/Annual%20Report/2014/Raporti_Vjetor_2014_ZRRE.pdf

³⁷ Agency of Statistics Annual Report 2017

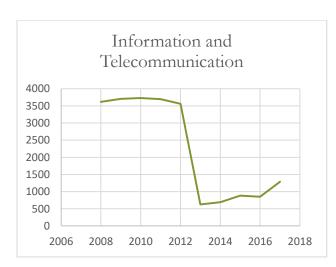
³⁸ http://ero-ks.org/2016/Raportet/Raporti_Vjetor_2015_ZRRE_shq.pdf

³⁹ http://ero-ks.org/2016/Raportet/Raporti%20vjetor%202016%20%20ZRRE_alb.pdf

⁴⁰ http://ero-ks.org/2017/Raportet/Raporti_vjetor_2017_ZRRE.pdf

been lower than that of 2016, according the representatives, because of the work on Hade and Shipitulle, which has led to increased import and therefore value (billed) from the consumers is increased. ⁴¹ The production for this year has been realized at only 90.96 %, lower for 9.01 % with 2016.

Number of enterprises per sector: Information and Telecommunication



Year	Information and Telecommunication	
2008	3615	
2009	3706	
2010	3731	
2011	3696	
2012	3563	
2013	626	
2014	693	
2015	881	
201642	849	
2017 ⁴³	1290	

Fig. 16. Information and Telecommunication

Relevance

Information and Telecommunication encompasses communication forms from telephone lines to wireless signals. Enterprises in this field are imperative for sustainable development. They indicate the free flow of information and ideas between people. The lack of other enterprises signals the monopoly of a single enterprise. That is, there is a solely one 'decision maker' that directs these information exchanges between people, which might have varying consequences for the overall development of a country.

Trends

Between 2012 and 2013, there has been a sharp decrease in the number of enterprises from 3563 to 626. Before that, there was a steady trend on the number of enterprises, ranging around the number 3000. At present, there is a slight rise on the number compared to the swing of 2012-2013, with the present number of enterprises being at 881 for the year 2015 (the latest data available). Given the unknown factors that could have steered such trends, our analysis on this matter remains rather short.

⁴¹ https://kallxo.com/miratohet-raporti-vjetor-i-zrre-se-per-2017-en/

⁴² Kosovo Statistics Agency, Annual Report 2018 (pg. 171) acessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

⁴³ There is no data available for the total number of mining and quarrying enterprises for 2017. The number was calculated by adding the latest available data for enterprises plus the number of new production enterprises in 2017 based on the reports of Kosovo Statistics Agency, Annual report 2018 (pg. 179), accessible at: accessible at: http://ask.rks-gov.net/media/4149/vjetaristatistikor-2018-final.pdf

Number of enterprises per sector: Mining and Quarrying



Fig. 17.	Mining	and	Quarrying
----------	--------	-----	-----------

	Mining	
	and	
Year	Quarrying	
2008	206	
2009	199	
2010	204	
2011	201	
2012	229	
2013	149	
2014	149	
2015	165	
201644	162	
201745	197	

Relevance

Mining and quarrying are the activities that involve the extraction of the natural materials on the ground, such as coal, ores, gas, petroleum, liquid or mineral materials and in some cases even gases. Enterprises on mining and quarrying are present in every country. In their scope, they include the processes of crushing, grinding, cleaning, drying and sorting, through which the extracted materials are prepared for the market. Such enterprises on mining and quarrying have important effects for the sustainable development of a country. As such, they not only indicate the overall economic development, but also the level of entrepreneurship while simultaneously taking into account the (non)depletion of natural resources.

Trends

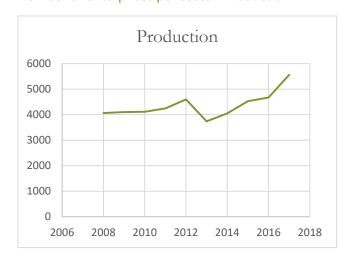
Since 2008 until 2016, the enterprises on the sector of mining and quarrying have shown fluctuations, with a decreasing trend. That means that the number of enterprises in this sector was growing, but it has experienced a sudden stop. Later the existing enterprises began to be lower in number, so closed down. It's interesting to note that in 2017, there were 212 special work permits issued, which is a higher number than that of the actual enterprises. In 2016, this was lower, being 149⁴⁶. However, despite the overall decreasing trend, during the last two years, there has been a slight increase in number, from 149 to 165 respectively; which shows the prospect of an increasing trend for the future.

⁴⁴ Kosovo Statistics Agency, Annual Report 2018 (pg. 171) acessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

⁴⁵ There is no data available for the total number of mining and quarrying enterprises for 2017. The number was calculated by adding the latest available data for enterprises plus the number of new production enterprises in 2017 based on the reports of Kosovo Statistics Agency, Annual report 2018 (pg. 179), accessible at: accessible at: http://ask.rks-gov.net/media/4149/vjetaristatistikor-2018-final.pdf

⁴⁶ https://www.kosovo-mining.org/wp-content/uploads/2017/09/Raporti-vjetor_KPMM_2016-shq-1.pdf

Number of enterprises per sector: Production



Year	Production	
2008	4065	
2009	4103	
2010	4112	
2011	4246	
2012	4598	
2013	3736	
2014	4052	
2015	4528	
2016 ⁴⁷	4674	
2017 ⁴⁸	5564	

Fig. 18. Production

Relevance

Production encompasses the processes used to transform tangible inputs, such as raw materials and intangible inputs, such as ideas, into outputs of goods or services.

Outputs are important because people can make use of them as commodities and because they generate income. In this way, more production creates more economic well-being.

Economic well-being signals development, more wealth and more conditions for enterprises

Trends

Production in Kosovo for the years 2008-2015 shows a positive trend. That means that more inputs are being produced. In fact, there is a roughly 11% increase in production in the year 2015 (latest data available), compared to 2008, despite a minor fluctuation.

This sector offers the prospect to be a leading sector in Kosovo, especially given its strong tradition in agribusiness.

Some limiting areas are the domination of imports for some production, such as milk. Also, the small amount of foreign direct investment. Thus, there is still room for improvement with regards to the substitution of imported goods with such goods produced in Kosovo and the creation of a more convenient environment for production.

⁴⁷ Kosovo Statistics Agency, Annual Report 2018 (pg. 171) accessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

⁴⁸ There is no data available for the total number of production enterprises for 2017. The number was calculated by adding the latest available data for enterprises plus the number of new production enterprises in 2017 based on the reports of Kosovo Statistics Agency, Annual report 2018 (pg. 179), accessible at: accessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

Waste generation: Waste Produced Per Person, Sanitary Landfills

	KG Waste Per Person	KG Waste Per Person Per
Year	Per Day	Year
2009 ⁴⁹	0.0380	13.89
2010	0.0393	14.36
2011	0.0408	14.92
2012	0.0402	14.69
2013 ⁵⁰	0.0421	15.38
2014 ⁵¹	0.0402	14.67
2015 ⁵²	0.0511	18.66
2016 ⁵³	0.0564	20.59
2017 ⁵⁴	0.0602	21.99

Relevance

This indicator presents waste generation, expressed in kg per person per day and year. This includes waste generated that is gathered only in sanitary landfills, thus does not represent the entirety of waste production. It is important to state that waste production can be a good indicator of the economy and the wellbeing of the people.

Trends

The trends of waste generation per person in Kosovo are increasing and doing so in an alarming and appalling rate. While in 2009 in the amount was 0.3 per person (0.5 kg per person including non-sanitary landfills) at present this has reached 0.6 kg per person – twice as high. Whereas, one person per year produces about 22 kg per year. This data, unfortunately, or fortunately, only includes the waste that has been delivered in sanitary landfills. Due to the lack of data, it doesn't account for the waste on illegal and non-sanitary landfills. It is estimated that there are about 1062 illegal landfills around Kosovo, suggesting

⁴⁹ The data for 2009, 2010, 2011, 2012 can be found in AMMK report, https://www.ammk-

rks.net/repository/docs/Raporti_i_mjedisit_2016_web_format_eng_22817.pdf page 86 and 87 and is divided by the population 1779521, the population of 2011, the only one available for the years previous to 2011 and with 1798645 in 2012.

⁵⁰ The data for 2013 is concluded by dividing 280,048,09 (total TON) of waste in sanitary landfills found in the AMMK report of 2016, pg. 28 by 1.820.631 (population) found at KSA.

⁵¹ The data for 2014 is concluded by dividing 264,933,13 (total TON) of waste in sanitary landfills found in the AMMK report of 2016, pg. 28 by 1.804.944 (population) found at ASK.

https://www.ammk-rks.net/repository/docs/Raporti_i_mjedisit_2016_web_format_eng_22817.pdf

⁵² The data for 2015 is concluded by diving 330,735,52 (total TON) of waste in sanitary landfills based on the AMMK, by 1 771 604 (population, significantly smaller due to the emigration) found at ASK:

http://ask.rks-gov.net/sq/agjencia-e-statistikave-te-kosoves/add-news/vleresimi-i-popullsise-ne-kosove-2015

⁵³ The data for 2016 is concluded by dividing 367,400.83 (total TON) of waste in sanitary landfills based on the AMMK report (pg. 33) by 1,783,531 (population) http://www.ammk-

rks.net/repository/docs/Raporti_vjetor_per_gjendjen_e_mjedisit__2016_shq.compressed.pdf; http://ask.rks-gov.net/media/3385/vleresimi-i-popullsise-se-kosoves-2016.pdf

⁵⁴ The data for 2017 is concluded by dividing 392,286,10 (total TON) of waste in sanitary landfills by 1,783,531 (population) https://www.ammk-

rks.net/repository/docs/Menaxhimi i Mbeturinave Komunale ne Kosove Raport mbi gjendjen 2018.pdf

that the number of waste produced per person per day and year in Kosovo is in fact much higher — and if the trends are to continue then also exponentially increasing. The data has been collected from the reports of the Agency for Environmental Protection based on the total amount of waste produced in tons, and divided by the total number of population for the respective year, based on the data of the Agency of Statistics of Kosovo. Although the factors to impact such trends are many and the data for them is unavailable, the increasing trend can be easily explained by increased waste collection service, be that with authorities providing services to more rural areas, or through mobility of people from rural to urban areas.

Waste Generation: Number of Waste Landfills

Municipal Sanitary Landfills	Other Estimated Illegal Landfills	Non - Sanitary Landfills
Prishtina Landfill –	360 Prishtina Region	Istog Landfill – Tuqep
Mirash		
Mitrovica Landfill –	163 Mitrovica Region	Zubin – Potok Landfill – Llucakareke
Germove		
Peja Landfill – Sferke	49 Peja Region	Leposaviq Landfill
Prizren Landfill –	498 Prizren Region	Zvecan Landfill – Pirit
Landovice		
Gjilan Landfill –	228 Gjilan Region	
Veleknice		
Poodujeva Landfill	-	
Dragash Landfill	-	
-	179 Ferizaj Region	
-	95 Gjakova Region	

Relevance

This indicator measures the number of landfills, the areas where waste can be disposed around the country, both sanitary and illegal. The importance is two-fold – it indicates the availability of infrastructure where waste can be put but also shows the extent of recycling as well as the level of collection of taxes/fees for waste. Given the fact that this is a long-term indicator where data will not change much within a few years, we could not make any analysis of the trends. Yet, it is important to identify it as an indicator and follow it up in future studies.

Innovation: Number of Organizations with Eco-Management

Relevance

This indicator measures the number of organizations that have in use eco — management. Ecomanagement demonstrates commitment to evaluating and improving their own environmental performance, complying with relevant environmental legislation, preventing pollution, and providing relevant information to the public. It includes public and private service providers. The concept was first introduced by the European Commission and it is known as Eco-Management and Audit Scheme (EMAS). In spite of being an important indicator, we could not find any available data thus cannot project any trends, yet we put forward this indicator given its importance in the future.



Fig. 19. Eco-Management and Audit Schemes (EMAS) Procedure

There are however sporadic initiatives by small businesses to move in the direction corporate social responsibility toward ecological management. This is usually in the form of carrying out activities that are environmentally friendly and that are outside of the scope of work of the business. However, there is a need for more and more businesses to adapt eco-management practices, or if existing, to make them more visible.

Innovation: Expenditure on Research and Development (R&D) in Relation to the GDP

Relevance

This indicator measures the innovation capacity of country, respectively the amount of money spent on national research and innovation system in relation to the GDP. There is a growing awareness worldwide of the critical role innovation plays in economic development. For smaller economies, such as that of Kosovo, that have limited natural or other predispositions to be competitive, innovation is a particularly promising domain. The European Union (EU) has been urging member countries to spend more and better on research and innovation. For the Western Balkans, it has contracted the World Bank to develop a strategy for innovation and development. The potential for impact for developing countries is even higher, given the opportunity to 'catch up' with more developed ones.

Trends

The data on R&D spending are not readily available, making it hard to develop estimates about current levels of spending on research. The main pillars of Kosovo's science, technology and innovation system are the Ministry of Innovation and Entrepreneurship, Ministry of Education, Science, and Technology, the Ministry of Trade and Industry. The only data available is from 2011, from a World Bank report. According to this report, public expenditures on R&D amount to 0.1 percent of the GDP⁵⁵. The Law on Scientific Research Activity foresees up to 0.7 percent allocation from the budget of Kosovo for the purpose of 'fulfilling the necessary conditions for scientific research and for providing the means to undertake scientific research', an amount which is clearly still very high for what is being achieved, and yet low compared with the region. According to the report the research and technology development are at an 'embryonic' state in Kosovo and that tasks such as development and methodologies have just started to being implemented, therefore 'institutional capabilities need to be established or strengthened.'

⁵⁵ http://www.worldbank.org/content/dam/Worldbank/document/eca/Western-Balkans-R&D-Kosovo.pdf

Social Dimension

The social dimension of sustainable development has to do with people. Even though it remains just as important as the other pillars, it is commonly the one to be the least defined and therefore to have the least attention in public. One definition that we shall use as a starting point holds that social sustainability refers to the "ability of a community to develop processes and structures which not only meet the needs of its current members but also support the ability of future generations to maintain a healthy community."

Social sustainability broadly covers topics such as equity, health, livability, education and security. The indicators of social sustainable development are indispensable to policymaking in order to create policies that are focused on ensuring quality of life, and social cohesion.

INDEP's platform looks at a number of areas, from demographics, social benefits and the current issue of pensions, to health and education, all the way to liabilities, specifically household debt. Despite that these issues are much broader and go beyond this publication, they are explored in the context of the sustainability of the system and the relations between pillars.

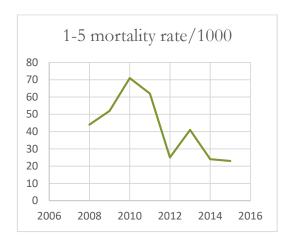
While this task comes with its complexities, INDEP's engagement in this regard is also in line with the outcomes of international commitments, primarily the European Union Sustainable Development Strategy⁵⁶ which prioritizes social cohesion; as well as the Millennium Development Goals, which are focused on sustaining public health and social wellbeing.

Kosovo has come a long way to creating social sustainability, and has improved in many areas. However, as we will come to see, it is yet lagging behind in many others, whilst we look forward to seeing this platform will serve as a foundation to have a more comprehensive look at the social dimension of sustainability.

33

⁵⁶ http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2010917%202006%20INIT

Public Health: Mortality rate 1-5 years old



	1-5 mortality
Year	rate/1000
2008	44
2009	52
2010	71
2011	62
2012	25
2013	41
2014	24
2015	23

Fig. 20. Mortality Rate

Relevance

The 1-5 mortality rate is the number of children who die by the age of five, per thousand live births per year. Protecting and improving the health of families and communities starts with the protection of the life of the most vulnerable part of the population – children. Worldwide, it is estimated that 11 children die every minute.1⁵⁷

The wellbeing of children is crucial to development: it impacts the prosperity and well-being of the society, whereas child non-survival signals a weak health system, poor education system and overall poor development.

Trends

Since 2010, child mortality in Kosovo 1-5 followed a decreasing trend, with the most rapid decrease in 2012. In 2015 (the most recent data available) the rate marked its lowest at 23. This number is below the world average which in 2015 stood at a 42.5 median, as reported by the UN.⁵⁸

However, compared with neighboring countries, deaths in Kosovo are rather high: UN Data shows that in 2013 Albania had an infant mortality rate of 15, Serbia 7, Montenegro 5.⁵⁹ When compared to Kosovo's 2013 rate of 41, these numbers are as much as seven times lower than Kosovo's. The infant mortality rate for European Union countries is at even lower rate of 4; the lowest being in Finland at 2. ⁶⁰

So, in comparison with the rate from the previous periods, the infant mortality rate in Kosovo has shown a considerable decrease, however the trends show that it is still high and far when compared with the region.

⁵⁷ https://data.unicef.org/topic/child-survival/under-five-mortality/

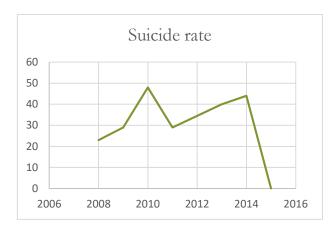
⁵⁸ https://data.unicef.org/topic/child-survival/under-five-mortality/

⁵⁹ http://data.un.org/Data.aspx?d=MDG&f=seriesRowID%3A561

⁶⁰ http://data.worldbank.org/indicator/SH.DYN.MORT

⁵ https://www.unicef.org/kosovoprogramme/children.html

Public Health: Suicide rate



	Suicide
Year	rate
2008	23
2009	29
2010	48
2011	29
2013	40
2014	44
2015	0

Fig. 21. Suicide Rate

Relevance

Suicide rates are defined as the deaths deliberately initiated and performed by a person in the full knowledge of its outcome. ⁶¹ World Health Organization reports that over 800,000 people die due to suicide every year and there are many more who attempt suicide. ⁶² It is the second leading cause of death among youth globally. Some 75% of global suicide occurred in low- and middle-income countries in 2012. ⁶³ Sustainable development goal 3 aims to ensure healthy lives and promote well-being for all at all ages.

Trends

In Kosovo, the suicide rate has been following an alarming increasing trend. It has reached almost a double rate in a period of 6 years, from 23 in 2008 to 44 in 2014. The latter year is also the most recent year with available data. Whereas it is problematic to clearly interpret the data between countries as they have different rules on qualifying a death as suicide (from intention the actual act), Kosovo's suicide rate is evidently high when compared to the region. Albania has a rate of 6.5 (per 100000 population), Macedonia 6.7, Serbia 16.8, Montenegro 18.9, Croatia 16.5 and Slovenia 17.1.⁶⁴ Overall, since 2000, there have been 800 cases of suicide and 2757 attempts for suicide, as reported by the police. ⁶⁵ There is a concern that it might become a behavioral pattern.

⁶¹ https://data.oecd.org/healthstat/suicide-rates.htm

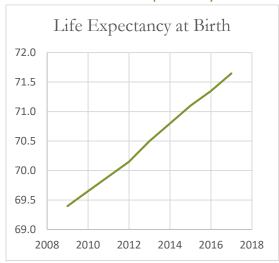
⁶²http://www.who.int/mental health/prevention/suicide/suicideprevent/en

⁶³http://www.who.int/mental_health/prevention/suicide/suicideprevent/en

⁶⁴http://www.who.int/gho/publications/world_health_statistics/2016/whs2016_AnnexA_Suicide.pdf?ua=1&ua=1

⁶⁵ http://www.kosovalive360.com/trendi-brengoses-i-vetevrasjeve-nuk-ka-te-ndalur.html

Public Health: Life Expectancy at Birth



Year	Life Expectancy at Birth
2009	69.4
2010	69.6
2011	69.9
2012	70.1
2013	70.5
2014	70.8
2015	71.1
2016	71.3
662017 ⁶⁷	71.6

Fig. 22. Life Expectancy

Relevance

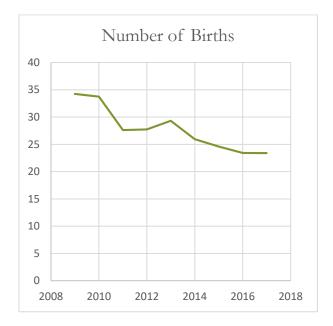
Life expectancy at birth is defined as how long, on average, a newborn can expect to live, if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. So, it measures the average time a person is expected to live. Higher longevity is associated is important because it is desirable to have longer longevity, which often reflects other socio-economic and demographic issues.

Trends

Trends indicate an increasing life expectancy for Kosovo. According to World Bank data, in 2009 the life expectancy was 69.6 years. Throughout the years it has increased roughly for 0.3 % per year. In 2016, with the latest data available, it marks a life expectancy of 71.64 years old. This age is in the same lines with the global population life expectancy. However, despite the increasing trends, it has yet to increase in order to achieve the level of life expectancy of developed countries, which goes beyond 90.

⁶⁶ World Bank Data, Life Expectancy at Birth, Kosovo. Accesible at: https://data.worldbank.org/indicator/SP.DYN.LE00.IN

Public Health: Birth Rate



Year	Number of Births
2009	34.24
2010	33.751
2011	27.626
2012	27.743
2013	29.327
2014	25.929
2015	24.594
2016	23.416
2017 ⁶⁸	23.402

Fig. 23. Number of Births

Relevance

This indicator measures the total number of children born per year. Together with mortality and migration, fertility is an element of population growth, reflecting both the causes and effects of economic and social developments, including the desired family size and the family formation time.

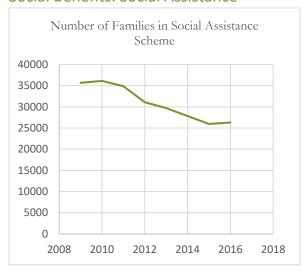
In Kosovo, the indicator measures the number of births per year from all municipalities (based on the place where the birth took place), as well as the births where the residence is missing and the births that happened outside of Kosovo.

Trends

Based on the data from the Agency of Statistics Kosovo, the number of births in Kosovo is following a decreasing trend. From 2009, when the birth number marked 34.24 there were a few slight increases but followed by a sharp decrease in 2016, reaching about 23, 416, and, currently marking 23.402 births in total. So, comparatively with previous years, the number of births has decreased.

⁶⁸ Kosovo Statistics Agency, Annual Report 2018 (pg. 49), accessible at: http://ask.rks-gov.net/media/4149/vjetari-statistikor-2018-final.pdf

Social Benefits: Social Assistance



	Number of	
Year	families	
2009	35654	
2010	36129	
2011	34867	
2012	31111	
2013	29688	
		*when
		presented
		under
		different
		tabs, some
		years
2014	N/A	missing
2015	25943	*Q4
2016	26302	*Q4
2017 ⁶⁹	N/A	

Relevance

Poverty Assistance is a social benefit scheme that supports low income families. This indicator is a straightforward one and measures the total number of households receiving assistance under the scheme.

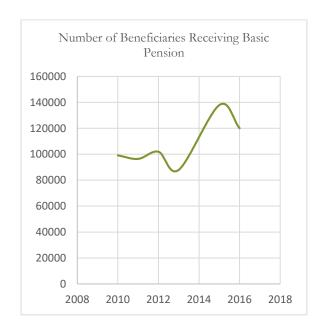
Trends

The data that is available indicates that the poverty assistance has decreased throughout the years in Kosovo. This means that more people have been removed from the scheme of poverty assistance, which suggests that less people are in dire need to fulfill their basic needs. However, given the complex social policy in Kosovo, there are other factors at play which hinders the analysis of the trends.

Note: per ASK data availability, for the years 09-13 the data represents the number of beneficiaries in 7 biggest municipalities in Kosovo; for the years 15-16, the data represent the number of beneficiaries from the latest quarter (Q4)

⁶⁹ Kosovo Statistics Agency, accessible at: http://askdata.rks-gov.net/PXWeb/pxweb/sq/askdata/

Social Benefits: Number of Persons Receiving Basic Pension



Year	Number of beneficiaries	
2009	N/A	
2010	99117	
2011	96390	
2012	101914	
2013	87945	
2014	N/A	*some years missing
2015	137940	*data doesn't include Junik, Mamushe, Ranillug, Hani Elezit
2016	120017	*data doesn't include Junik, Mamushe, Ranillug, Hani Elezit
2017 ⁷⁰	N/A	

Fig. 25. Basic Pension

Relevance

A basic pension is a regular payment with a fixed sum paid to a person after reaching the retirement age, in some cases funded by the government. It addresses the old-age insecurity of the senior citizens of a country, and at the same when is it a part of a country's public pension, it also provides an indication of a country's need for reforms to maintain long-term financial sustainability.

Trends

Since 2009, the basic pension spending in Kosovo followed a slowly increasing yet steady trend, with an average 118, 000 euros spent on basic pensions per year. 2016 presents a sharp decrease in spending with a difference of 12,000 compared to the previous year, which could indicate the prospect of a decreasing trend for the following years. However, the sharp decrease doesn't account for three municipalities of Junik, Mamushe, Ranilluge and Hani i Elezit (for reasons not determined on the database).

However, there is yet work to be done to make the system fully sustainable. The basic pensions are 100% funded from the state. This spending constitutes a large share of the budget of Kosovo. The financial sustainability might be in risk if there is an increasing trend of pension payments.

⁷⁰ Kosovo Statistics Agency, accessible at: http://askdata.rks-gov.net/PXWeb/pxweb/sq/askdata/

Social Benefits: Number of Persons Contributing Pensions

Relevance

Pension contributions are a fixed sum of contributions made throughout the pre-retirement years into an established fund. While they address the same issue as the basic pensions do, that of old age insecurity, they are acquired differently. Since they are non-state financed contributions, they apply only to those who have a regular income, i.e. working population. Normally, they are made by the employer and the employee, jointly. They are not a reflection of employment, as such contribution might register even if it is a one-time employment; rather it should be seen as an indicator of an activity.

Trends

There is a strong positive trend when it comes to pension contributions. The number of people who contribute has increased significantly: there are more than 10,000 new contributors in the scope of seven years (2009-2016). The most recent numbers of registered contributors stands at 41,315.

Healthcare Delivery: Total Number of Visits in Hospitals and University Clinical Center

Year	Number
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	427,897
2017	N/R

Year	Number
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	N/A
2015	N/A
2016	816,306
2017	N/R

Relevance

This statistic displays the total number of outpatient visits in hospitals

Trends

It is currently impossible to define any since the data are available only for one year.

Education: Adult Literacy Rate

Year	Rate
2009	69,65
2010	69,90
2011	70,15
2012	70,50
2013	70,80
2014	71,10
2015	71,35
2016	71,65

^{*} the numbers are rounded to the closest decimal

Source: World Bank Data

Relevance

Adult literacy rate, also called the "effective literacy rate," measures the total percentage of the population aged fifteen years or older that can read and write with understanding, so in essence it shows how much of the country can read and write. Literacy is a fundamental right, implied from the right to education, as epitomized in several key international conventions (International Declaration for Human Rights, etc.) and is understood within the context of human development. It serves as an indicator of measurement of effective education, economic growth and overall societal well-being.

Trends

While the current data shows improving trend, the issue of literacy remains unclear due to specificity of the data. Case studies have shown, for instance, a great percentage of functional illiteracy in Kosovo, although no data sets for this issue exists.

Education: Public spending on Education

Relevance

Public Spending on Education includes direct expenditure on educational institutions as well as educational-related public subsidies given to households and administered by educational institutions. This indicator is shown as a percentage of GDP and of total government spending, divided by primary, primary to post-secondary non-tertiary and tertiary levels.

This indicator may show the priority given by governments to education relative to other areas of investment, such as health care, social security, defence and security. Education expenditure covers expenditure on schools, universities and other public and private institutions delivering or supporting educational services. A big portion of expenses put into education in fact goes for salaries and benefits of the personnel. Therefore, overall expenditures may be high, but the real money put into efforts to improve the education may be low.

Trends

We could not gather sufficient data to project any trends at this stage.

Security: Violations and Misdemeanors

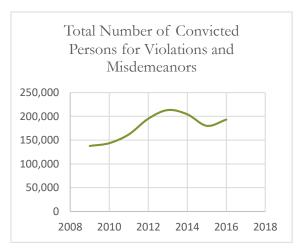


Fig. 26. Number of Convicted Persons

	Total Number of Convicted Persons for Violations and	
Year	Misdemeanors	
2009	137,798	
2010	143,663	
2011	161,937	
2012	194,955	
2013	213,099	
2014	204,166	
2015	180,057	
2016	193,085	
2017	N/A	

Relevance

The total number of persons convicted for violations and misdemeanors is one of the indicators used to measure the level of the persons convicted, and it may give an idea about the level of security. According to the UN reports, besides that violations affect a community's' safety and sense of security, it can have important impacts a community's stability, urban economic development, education, social integration, and the perceived quality of life, whereas fear of crime is sometimes regarded as being as detrimental to society as crime itself.

Trends

The data from the Agency of Statistics of Kosovo indicates an increasing trend of persons who have been convicted for violations and misdemeanors in the Basic Courts of Kosovo. The numbers include violations and misdemeanors that have to do with the a) public safety (e.g. direct use of weapons) b) traffic, c) public order and tranquility (e.g. noise), d) economy, e) finances and f) other felonies. Below are the numbers for persons convicted based on the felony type – we can see that the largest number of felonies belongs to the traffic type, followed by economy and public order.

	Economic	Financial	Public Safety	Traffic	Public Order	Other
2016	3833	131	29	188229	780	83

In a separate report, from the agency of national statistics, we can see that the largest portion of the felonies happens in the area of traffic violation, followed by those in the area of economy and the public order. They all constitute high social damage.

Liabilities: Houses/Apartments in Mortage

	Houses/Apartments	Houses/Apartments
Year	ear on Mortgage not Mortgage	
2009	N/A	N/A
2010	N/A	N/A
2011	N/A	N/A
2012	N/A	N/A
2013	N/A	N/A
2014	3	97
2015	1	99
2016	2	98
2017	3	97

Source: Kosovo Statistics Agency⁷¹

Relevance

This indicator measures the number of houses under mortgage, as a form of liability. Sustainable housing finance is important – from studies conducted it is shown that credit policy often lags in response to housing pricing changes.⁷² This indicator is important and relevant to show the state of housing and the effects of bank lending on housing.

Trends

The data indicates an increasing trend – however, the data available from the Kosovo Statistics Agency doesn't seem to reflect the situation. The number are very low compared to the exponentially increasing number of houses. Besides, the data is missing for 4 years, which doesn't allow for the trend to be accurately discerned. Therefore, there is a need for the data to be reviewed.

 $^{^{71}} http://askdata.rksgov.net/PXWeb/pxweb/sq/askdata/askdata_00\%20 Household\%20 budget\%20 survey_4\%20 Living\%20 Conditions\%20 and \%20 Affordability/hbs10.px/table/tableViewLayout1/?rxid=7c8ea98d-711a-4978-99a8-d9f762881f71$

⁷² Effects of Bank Lending on Urban Housing Prices for Sustainable Development: A Panel Analysis of Chinese Cities - Yongsheng Jiang, Dong Zhao, Andrew Sanderford and Jing Du

Environmental Dimension

The environment dimension is a crucial component of sustainability, that has to with the planet. The environmental pillar refers to the laws, regulations, and other policy mechanisms concerning environmental issues, in order to advance sustainable development.

These issues include air and water pollution, land degradation, ecosystem management, maintenance of biodiversity, and the protection of natural resources, wildlife and endangered species. The indicators of environmental sustainable development could be a strategic tool in aiding governments to engage in informed decision making across different sectors of policy making with a focus on including the environment when creating policies and promoting sustainable development.

In our designed platform, there are a number of economic indicators explored, which aim to give an overview of the environmental situation in Kosovo. Because of the scarcity of comprehensive studies and the overall the challenging nature of data to determine trends, the data are presented mainly for the current year. As such, they attempt to give an assessment of the situation, in the areas of availability and non-availability (or pollution) of resources (air, water, land, biodiversity), in the context of sustainable development.

INDEP's engagement in this regard is also in line with the main outcomes derived from top policy documents of important international organizations and documents that call attention to environment. Chapter 40 of Agenda 211, the action plan that was adopted at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, specifically appeals to countries, governments, and non-governmental organizations to engage in developing SDIs as a mean to offer a sound basis for educated decision making in the long run.

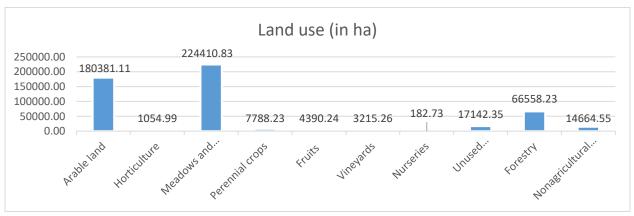
The Millennium Development goals are constructed around the idea of keeping as many resources as possible and the European Union is directed towards development with acquis *communautaire* in mind. As each of the goals are expected to be achieved within the next 15 years, this calls for the joint commitment of all stakeholders in the process.

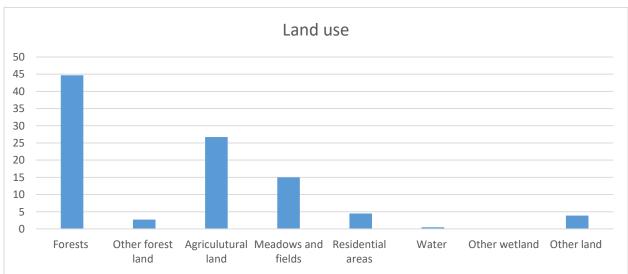
Environmental issues pose a contemporary global challenge that the global actors, have started to tackle and are determined to prevent further deterioration before have detrimental consequences for the future generations. Kosovo's environmental situation, as we will come to see, is an especially challenging dimension that is not doing so well.

Land: Land use

Land use	ha	%
Used agricultural land	413635.16	80.78807
Unused agricultural land	17142.35	3.348113
Nonagricultural land	14664.55	2.864168
Forestry	66558.23	12.99965
Total	512000.29	100

First	Area	Area (%)
category	(km2)	
Urban	273.4	2.52%
Agriculture	4,371.19	40.25%
Forests	6,193.24	57.02%
Water	23.23	0.21%
Total	10,861.06	100.00%





Relevance

Land use involves the management and modification of natural environment or wilderness into built environment such as settlements and semi-natural habitats such as arable fields, pastures, and managed woods. It is important on many levels as it shows the potential for sustainable environment, urbanism, food production and tourism.

Trends/Current situation

According to the current data, the largest proportion of land use is for agriculture, followed by forestry. Within agriculture, the distribution of these between food production purpose land, e.g. vineyards, fruits, etc. is similar, however in proportion with unused agricultural land such land is small.

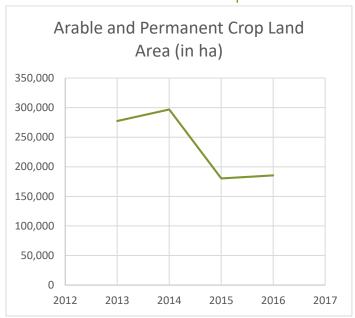
According to these data, forests and agriculture are the largest share of the land use in Kosovo. This report also account for water share and urban areas, which are significantly smaller.

Further, there are data available from the report of "National Inventarization of Forests in Kosovo" from the Ministry of Agriculture, Forestry and Rural Development, presented below:

While these data differ in their measurements, the following information may be reasonably inferred:

Forests and other forestry land, together with arable land constitutes the main domains of land use in Kosovo. The urban/residential area is comparatively small; it comprises approximately 3.5 % of the land. Further, from the data from the ministry, it evident that the trends. It is also evident that there is potential for large food production given the large amount of arable land; and for tourism, given the large amount of forests (and mountains). There also seems to be a pressing need for more residential/urban space. For instance, the largest portion of the population lives in cities, so in the smallest areas.

Land: Arable and Permanent Crop Land



Year	Arable and Permanent Crop Land
	Area (in ha)
2009	261,165
2010	267,147
2011	not available *
2012	not available *
2013	277,364
2014	296,830
2015	180,381
2016	185,385
2017	

Fig. 27. Crop Land

Relevance

Arable land is the land under temporary crops, temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (for less than five years); and land under permanent crops is the land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest. This indicator shows the amount of land available for agricultural production and, interalia, the cropland area available for food production. Crop intensification, can ease the pressure on cultivating new lands but farm practices adopted for raising yields can also, in some situations, result in damaging the environment (such as when expanding into new areas). Changes in the indicator value over time or between various components may show increased or decreased pressure on agricultural land. The data when related to other variables such as population, total land area, gross cropped area, fertilizer use, pesticides use, etc., can also be used to study agricultural practices of the country, food production, etc.

Trends

The amount of arable and cropland area in Kosovo shows an increasing trend, even though it has decreased compared to the previous years. The current amount is 185,385 ha in the year 2016, compared to 261,165 in 2009. There are no data available for the year 2011 and 2012, however in 2013 and 2014 the amount has increased even further, reaching the peak at 296, 830, which suggests that for the missing data years, the area could have been increasing as well. In 2015 there is a significant decrease of the area, but in 2016 it re-catches on the growing trend.

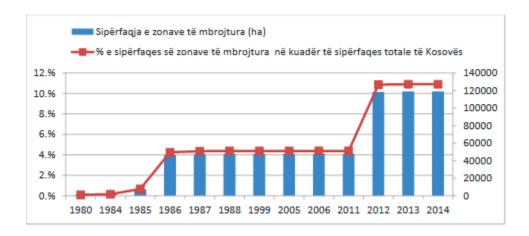
Land: Protected land

Relevance

Protected land is are areas from the total territory that are recognized, dedicated and managed, through institutional means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Essentially, they receive protection because of biodiversity; so it measures policy response to biodiversity loss.

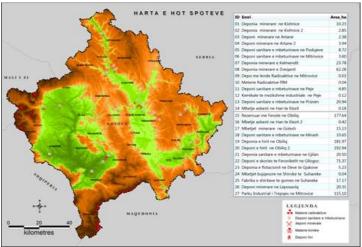
Trends

During 2012, Kosovo declared its second national park National Park "Bjeshket e Nemuna," with a surface of 62.488 ha. At the same time, the other protected area, national park "Sharri," was extended for approximately 20 thousand ha. As of 2014 (the latest data available) the number of protected areas in Kosovo is 116 encompassing a territory of 18.913,95 ha. In this way, the surface of protected land has increased from 4.4% to 10.9% of the whole territory.



Protected lands trends over the years, total area and their share on the total territory of Kosovo.

Land: Degraded land



Relevance

Land degradation is a process in which the value of the biophysical environment is affected by a combination of human-induced processes acting upon the land. It is viewed as any change or disturbance to the land perceived to be deleterious or undesirable.

The amount of degraded land in a country is an important indicator of the overall level of environmental I consciousness, in two aspects — the regard for environment in ways of impact from the unnatural interventions, the regard for environment when degradation comes from human factors; but it also shows the prospect for overall health and well-being of the population.

There are 110 sensitive environmental areas, also known as hotspots, in Kosovo. Out of them, there are 27 zones that are considered as zones with a larger impact on environment. The total surfaces of these areas is 9.94 km2 or about 0.1%. As it can be seen from the hot-spot map, the largest number of hotspots in concentrated on the region of Prishtina.

Water: Water Availability

Water Resources	Area
River Basins	10907.00 km2
Artificial lakes	1634.6 km2
Natural lakes	No Data
Ground Waters	998 km2
	30 sources (no data
	on total area
Thermo Mineral	covered)
Wetlands	109ha52a35m2

Relevance

People and ecosystems need sufficient quantities of water to support the benefits, services and functions they provide. This indicator measures the total amount of water available to be allocated for human and ecosystem uses.

Trends

Kosovo has various water resources of different types, proving a significant extent resources for a landlocked country. The total watershed surface in Kosovo is 11.645 km2, whereas the existing accumulations reach 569.690.00m2. The river basis: Drini i bardhe and its branches, Ibri, Morava e Binces, Lepenci, Nerodime, Sitnica, Kriva; artificial lakes: Gazivoda lake, Batllava lake, Badovci lake, Livoci lake, Radoniqi lake, Perlepnica lake; natural lakes: lakes found in the National Park Sharr and lakes found in the National Park Bjeshket e Nemuna; ground waters: Istog, Vrelle, Drini i Bardhe, Lubzhde, Decan, Lloqan, Krk Bunar, Fusha e Therandes, Korishe; thermos-mineral waters: Banja e Pejes, Banja e Kllokotit, Banjska, Banja e Runikut, Burimi I Nxehte I Runikut, Gojbula, Uji I Lluzhanit, Studencia, Decan, Getnja e Siperme, Poneshi; and wetlands: Henci. However, in practice, some of them are not fully explored, especially thermo mineral waters, while others, especially the river basis, are undergoing a process of slow degradation and erosion.

Water: Water Availability

Relevance

People and ecosystems need sufficient quantities of water to support the benefits, services and functions they provide. This indicator categories measures the total amount of water available to be allocated for human and ecosystem uses.

Trends

The total watershed surface in Kosovo is 11.645 km2, whereas the existing accumulations reach 569.690.00 m².

Air: Air Pollution

Relevance

Poor air quality can be mainly attributed to the production and consumption of energy, industrial processes and road transport. This has multiple destructive effects. The immediate consequence is that polluted air toxifies the health of the inhabitants; then resources exhaust, and it has tremendous negative effects on land, waters, buildings, wildlife and can even affect seemingly unrelated issues such as property rights, through the number of population and high exploitation and release of pollutants.

Trends

There are no institutional data for the air pollution from 2009 to 2016. The data available, provided by the U.S. embassy have indicated alarming rates of air pollution, only in Prishtina having a minimal scale of 53 and a maximal of 97. That's a hazardous scale, in the range of global level polluted cities such as Mumbai and Beijning, which have the population 10 times higher than that of Prishtina.

12 active stations, which measure 5 parametres:

Measured parametres

Amount in 2016

1. Dust Particles (PM10 and PM05)

not specified

- 2. Nitorgen Oxides (NOx) tbd
- 3. Sulfur Dioxide (SO2) tbd
- 4. Ozone (O3) tbd
- 5. Carbon Monoxide (CO) tbd

Political Dimension

Sustainability is built on the idea of thinking beyond ourselves, thinking about the future generations. Yet, development is generally associated with our own empowerment, at present, inherent from the wider universal values that sustainability entails. As we have already pointed out in the introduction, sustainability is about the balance between choices that societies make, be that economic, environmental or societal. In this aspect, INDEP adheres to a rather wider conceptualization of sustainability. For any society, the political organization remains of foremost importance. For this purpose, and for the first time ever in a study of this type, INDEP has pursued to project components to sustainable developments that relate to the very core of societal organization – politics.

Sustainability of a society is primarily dependent on the functionality and sustainability of the political system through which the society is organized. For societies in transition like Kosovo, where values of liberal democracies are present but not embedded, tracking political sustainability becomes of greater importance.

The political dimension of sustainable development indicators is still in an experimental phase. Drawing from our policy experience as well as the research conducted for the purpose of this study, INDEP is putting forward a few political indicators through which we believe sustainability can be measured and understood. Having collected data on issues of general participation in political life, openness and transparency of governance and e-governance, we are putting forward the very first indicators, which we seek to foster and expand in the near future.

Total Voter Turnout

The data includes the following municipalities: Deçan, Gjakova, Gllogovc, Gjilan, Dragash, Istog, Kaçanik, Klina, Fushë Kosova, Kamenica, Mitrovica, Leposavić, Lipjan, Novo Brdo, Obiliq, Rahovec, Peja, Podujeva, Prishtina, Prizren, Skenderaj, Shtime, Štrpce, Suhareka, Ferizaj, Viti, Vushtrri, Zubin Potok, Zvečan, Malisheva, Junik, Mamusha, Hani i Elezit, Gračanica, Ranillug, Kllokot.

Relevance

This is an indicator that measures the total number of eligible voters who casted a vote at the elections. Voter turnout is an important indicator of how citizens participate in the governance of their country. According to Institute for Democracy and Electoral Assistance, an internationally renowned institute that works directly with voting, a higher voter turnout is often a sign of the vitality of democracy, while lower turnout is usually associated with voter apathy and mistrust of the political process.

Trends

The turnout of voters is has slight increasing trends, but it is difficult to determine given the limited data sets. There is a clear increasing trend of voters in the local elections, however there is a slight decreasing trend of voters in the general elections. Given that our starting point is the year 2009, there are limited elections data to provide for any meaningful trends.

Youth (Age 18-21) Voter Turnout

Year	Percentage	Type of Election
2009	48.08 %	Local Elections
2010	52.42 %	General Elections
2011	N/A	-
2012	N/A	-
2013	61.17 %	Local Elections
2014	52.75 %	General Elections
2015	N/A	-
2016	N/A	-
2017	N/A	-

The data includes the following municipalities: Deçan, Gjakova, Gllogovc, Gjilan, Dragash, Istog, Kaçanik, Klina, Fushë Kosova, Kamenica, Mitrovica, Leposavić, Lipjan, Novo Brdo, Obiliq, Rahovec, Peja, Podujeva, Prishtina, Prizren, Skenderaj, Shtime, Štrpce, Suhareka, Ferizaj, Viti, Vushtrri, Zubin Potok, Zvečan, Malisheva, Junik, Mamusha, Hani I Elezit, Gračanica, Ranillug, Kllokot.

Relevance

This indicator measures the number of voters, aged 18 to 21, who have casted a vote. This serves as a way to give an idea about civic engagement. Elections are rightfully seen as the basement for any democratic system. The youth of a population is specifically important for Kosovo, given its demographics.

Trends

In spite of limited data, there is a clear increasing trend of young voters voting in elections. At the local elections, this increase was 13 %, whereas for the general elections, the increase was less significant, being only 0.33 %.

Number of Municipalities with Websites

No.	Municipality	Website	
		YES	NO
1	Deçan	YES	
2	Gjakova	YES	
3	Gllogoc	YES	
4	Gjilan	YES	
5	Dragash	YES	
6	Istog	YES	
7	Kaçanik	YES	
8	Klina	YES	
9	Fushe-Kosove	YES	
10	Kamenice	YES	
11	Leposaviq	YES	
12	Lipjan	YES	
13	Obiliq	YES	
14	Rahovec	YES	
15	Peje	YES	
16	Podujeva	YES	
17	Prishtina	YES	
18	Prizren	YES	
19	Skenderaj	YES	
20	Shtime	YES	
21	Shterpce	YES	
22	Suhareke	YES	
23	Ferizaj	YES	
24	Viti	YES	
25	Vushtrri	YES	
26	Zubin Potok	YES, but	
		empty	
27	Zveçan	YES, but	
		empty	
28	Malisheva	YES	
29	Novoberda	YES	
30	Mitrovice e Veriut	YES, but	
		empty	
31	Mitrovice e Jugut	YES	
32	Junik	YES	
33	Hani I Elezit	YES	

34	Mamushe	YES	
35	Gracanice	YES	
36	Ranillug	YES	
37	Partesh	YES	
38	Kllokot	YES	

Source: Websites of the municipalities of Kosovo; https://kk.rks-gov.net

Relevance

The number of websites available of the municipalities indicates the online presence of the municipalities. Online presence is an important part of E-government, and as such it can give an idea about the openness of information for the public and transparency of each municipality. According to the UN survey 2016 on E-government and Sustainable Development, more and more countries are putting effort to include e-government and opening their data for public information and scrutiny. This indicates that these institutions are more inclusive, effective, accountable and transparent. Given the current trajectory of technological development, this indicator can be upgraded in the future to assess the level of information the municipalities provide online.

Trends

All of the municipalities (100%) have an online space, in the form of website, where, with a few exceptions, they post about their activities. These websites are provided by the government and administered locally from the municipality, in four languages – Albanian, Serbian, Turkish, and English. The websites serve as a source of contact, information sharing, especially public announcements and news, projects, municipal assembly updates and town halls, tourist information, as well as other information relevant for the municipality. The vast majority of the municipalities use the website actively for the above-mentioned activities, varying in amounts of content. There are a few municipalities, notably, the municipality of North Mitrovica, Zubin Potok and Zvecan, which have a website provided, but it is empty. The websites serve as the major point of contact with the citizens.

Citizen Access to Public Services / Number of E-kiosks

No.	Municipality	E-kios	ka
		YES	NO
1	Deçan		NO
2	Gjakova ¹	YES	
3	Gllogoc		NO
4	Gjilan ²	YES	
5	Dragash		NO
6	Istog ³	YES	
7	Kaçanik		NO
8	Klina ⁴	YES	
9	Fushe-Kosove		NO
10	Kamenice		NO

11	Leposaviq		NO
12	Lipjan⁵	YES	
13	Obiliq ⁶	YES	
14	Rahovec		NO
15	Peje ⁷	YES	
16	Podujeva		NO
17	Prishtina ⁸	YES	
18	Prizren ⁹	YES	
19	Skenderaj		NO
20	Shtime		NO
21	Shterpce		NO
22	Suhareke		NO
23	Ferizaj	YES	
24	Viti	YES	
25	Vushtrri ¹⁰	YES	
26	Zubin Potok		NO
27	Zveçan		NO
28	Malisheva		NO
29	Novoberda		NO
30	Mitrovice e Veriut		NO
31	Mitrovice e Jugut ¹¹	YES	
32	Junik		NO
33	Hani I Elezit		NO
34	Mamushe		NO
35	Gracanice		NO
36	Ranillug		NO
37	Partesh		NO
38	Kllokot		NO

Relevance

This indicator measures the amount of public services provided through online platforms - this includes supply with documents and online transactional services. According to the UN

E-government survey of 2016, more institutions are making attempts to provide their data through public platforms or equivalent, with the number of places that have this practice, reaching 148. Having some sort of online/self-services is a great asset to facilitate the process of providing documents, reducing backlog and increasing efficiency. This indicator shall be further upgraded to assess the level of services provided electronically.

Trends

13 out 38 municipalities in Kosova have started to provide self-services online services for their citizens through e-kiosks. Citizens now are able to extract information with regards to the civil status, including birth certificates, marriage certificates, and similar, through their kiosks, at any time, 24/7. The rest of the municipalities do not have these services yet. However, most of them, list a contact in their website for questions about these issues.

Speed of Processing Documents: Number of days for an application to be processed

Relevance

This is an indicator that measures the delivery of public services based on the number of days. Considering that the increasingly fast-paced lifestyle is growing, it is has become a basic need to have quick delivery of documents that have to do with citizenship, focusing on ID cards and passports.

Trends

In Kosovo, the first time applicants go through a waiting time of 6 to 10 business days, if regular processing, however, most documents seem to be obtained within 1-3 days. If it is an expedited process, the documents can be obtained within the day (Applicable fees applied). The citizens receive an SMS notification immediately when the document is ready. This reduces the inefficiency in waiting times to almost zero (between the time the document is ready and the picking up), since the citizen is informed immediately that the document is ready, without having to go to the application centre to check it. Applications can be made at any centre, regardless of the residency of the applicant. It is important to note that both the IDs and Passports in Kosovo are biometric.

E- participation – Telepresence

No.	Municipality	Telepres	sence	Num	ber of reco	ordings
		YES	NO	1-4	5-10	10+
1	Deçan		NO	N/A	N/A	N/A
2	Gjakova ¹	YES				٧
3	Gllogoc ²	YES			٧	
4	Gjilan ³	YES				٧
5	Dragash ⁴	YES		٧		
6	Istog		NO	N/A	N/A	N/A
7	Kaçanik⁵	YES		٧		
8	Klina ⁶	YES		٧		
9	Fushe-Kosove		NO	N/A	N/A	N/A
10	Kamenice ⁷	YES		٧		
11	Leposaviq		NO	N/A	N/A	N/A
12	Lipjan ⁸	YES			٧	
13	Obiliq		NO	N/A	N/A	N/A
14	Rahovec ⁹	YES		٧		
15	Peje ¹⁰	YES				٧
16	Podujeva ¹¹	YES		٧		
17	Prishtina ¹²	YES				٧
18	Prizren		NO	N/A	N/A	N/A
19	Skenderaj ¹³	YES		٧		
20	Shtime ¹⁴	YES		٧		
21	Shterpce		NO	N/A	N/A	N/A
22	Suhareke		NO			

23	Ferizaj ¹⁵	YES		٧		
24	Viti ¹⁶	YES				٧
25	Vushtrri		NO	N/A	N/A	N/A
26	Zubin Potok		NO	N/A	N/A	N/A
27	Zveçan		NO	N/A	N/A	N/A
28	Malisheva ¹⁷	YES		٧		
29	Novoberda ¹⁸	YES		٧		
30	Mitrovice e Veriut		NO	N/A	N/A	N/A
31	Mitrovice e Jugut ¹⁹	YES		٧		
32	Junik		NO	N/A	N/A	N/A
33	Hani I Elezit ²⁰	YES		٧		
34	Mamushe		NO	N/A	N/A	N/A
35	Gracanice		NO	N/A	N/A	N/A
36	Ranillug		NO	N/A	N/A	N/A
37	Partesh		NO	N/A	N/A	N/A
38	Kllokot		NO	N/A	N/A	N/A

73

Relevance

This indicator measures telepresence – the presence of live meetings of municipal assemblies – in order to give an idea about e-participation. According to the UN report of E-governance, enhanced eparticipation may enhance bringing us closer to the SDGs, as it makes possible more participatory decision-making. At present, many countries are making great progress in this regard - while higher income countries (due to various factors) stand at a higher performing position, this area is one of the ones where lower-income countries are also 'on the radar' making good advancements. In Kosovo, there is a greater possibility to communicate with businesses, public-private partner outside the municipality, greater inter-municipal cooperation and even international. This indicator shall be further upgraded to assess the full extent of transparency of municipal authorites.

¹ https://kk.rks-gov.net/gjakove/video-incizimet-e-mbledhjeve-2/

²https://kk.rks-gov.net/gllogoc/video-incizimet-e-mbledhjeve/

³https://kk.rks-gov.net/gjilan/video-incizimet-e-mbledhjeve/

⁴https://kk.rks-gov.net/dragash/

⁵https://kk.rks-gov.net/kacanik/video-incizimet-e-mbledhjeve/

⁶https://kk.rks-gov.net/kline/video-incizimet-e-mbledhjeve/

⁷https://kk.rks-gov.net/kamenice/video-incizimet-e-mbledhjeve/

⁸https://kk.rks-gov.net/lipjan/video-incizimet-e-mbledhjeve/

⁹https://kk.rks-gov.net/rahovec/video-incizimet-e-mbledhjeve/

¹⁰https://kk.rks-gov.net/peje/video-incizimet-e-mbledhjeve/

¹¹https://kk.rks-gov.net/podujeve/video-incizimet-e-mbledhjeve/

¹²https://kk.rks-gov.net/prishtine/video-incizimet-e-mbledhjeve/

¹³https://kk.rks-gov.net/skenderaj/video-incizimet-e-mbledhjeve/

¹⁴https://kk.rks-gov.net/shtime/video-incizimet-e-mbledhjeve/

¹⁵https://kk.rks-gov.net/ferizaj/video-incizimet-e-mbledhjeve/

¹⁶https://kk.rks-gov.net/viti/video-incizimet-e-mbledhjeve/

¹⁷https://kk.rks-gov.net/malisheve/video-incizimet-e-mbledhjeve/

¹⁸https://kk.rks-gov.net/novoberde/video-incizimet-e-mbledhjeve/

¹⁹https://kk.rks-gov.net/mitroviceejugut/

²⁰https://kk.rks-gov.net/haniielezit/video-incizimet-e-mbledhjeve/

Trends

53 % of municipalities present their meetings with videos. That means each of these municipalities is likely to post a live video of public meeting, extraordinary meeting or staff meeting for the wider audience. On the other hand, 47% of them have not yet started this practice. Within this 47% there is a difference between those municipalities that do not practice at all, and between those that seems due to technical or other reason have not updated the website at all.

Corruption Rate

Year	Corruption Perception Index (out 100)	Rank (out of 180)
2009	N/A	N/A
2010	N/A	110
2011	N/A	112
2012	34	105
2013	33	111
2014	33	110
2015	33	103
2016	36	95
2017	39	85

Source: Transparency International

https://www.transparency.org/news/feature/corruption_perceptions_index_2017

https://Trendingeconomics.com/kosovo/corruption-rank

Relevance

The level of corruption in a country is of outmost relevance for all political and economic activities. Being a developing country in multiple transitions, Kosovo faces serious challenges when it comes to corruption. The Corruption Perceptions Index (CPI) published by Transparency International, is an internationally renowned publication that ranks countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. Corruption is generally seen directly linked not only to the sustainability of the governance in a society, but also the economic sustainability, given its multiple correlations with FDI, safety and the general wellbeing of the people.

Trends

This year, the index found that more than two-thirds of countries score below 50, with an average score of 43. For Kosovo, this is even lower (39) than average (43) meaning that corruption perception index is higher than average score. But this doesn't mean there hasn't been any progress. Kosovo has shown improvement by increasing this score throughout the years – therefore decreasing corruption perception. Similarly with the ranking, Kosovo shows relatively remarkable progress placed 85th, the lowest position it has ever had. If the trends continue in this way, the corruption level seems to be decreasing.

Yet, it cannot be ignored that 39 remains a high score. The corrupted, is reported by transparency international to be present as political corruption, defined as 'the manipulation of policies, institutions and rules of procedure in the allocation of resources and financing by political decision-makers', and election corruption.

Official Development Assistance

Year	Value
2009	\$782,130,000
2010	\$527,520,000
2011	\$583,180,000
2012	\$566,740,000
2013	\$568,550,000
2014	\$579,520,000
2015	\$437,890,000
2016	N/A
2017	N/A

Source: Trending Economics 74

Relevance

Net official development assistance (ODA) consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. As an indicator it measures the amount of loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent).

Trends

The latest value for Net official development assistance and official aid received (constant 2013 US\$) in Kosovo was 502,880,000 as of 2015. Over the previous 6 years, the value for this indicator has fluctuated between 818,070,000 in 2009 and 502,880,000 in 2015. There is no data available for the recent years (2016 and 2017).

⁷⁴ https://tradingeconomics.com/kosovo/net-official-development-assistance-and-official-aid-received-current-us\$-wb-data.html

Concluding Remarks

Sustainable development is still at an embryonic state in Kosovo. While there has been considerable progress on some areas – notably the economic dimension, the other areas, such as the environmental are still a long way behind. Kosovo faces issues with land degradation, air pollution, and water availability. Other areas such as the social dimension, are still weak, especially the health sector. Notable progress is on the specific segment of online public administration services. There are not much data available for other areas of this dimension, therefore it is unclear the overall state of it.

INDEP's initiative to collect data for the four dimensions has come with as much satisfaction to take a further step in this direction, as much as with challenges. The availability of data, and at times, the quality of data, has proven to be a big impediment; and this has brought into attention a more pressing issue: the collection and management of data itself. Evidence-based policy making is crucial and indicators are the only tool to incorporate scientific knowledge into policy-making. They not only are useful tools to communicate ideas and values, but they can provide concrete information to prevent setbacks and help to calibrate policies by making more informed decisions. The data made available at the Kosovo Statistics Agency has been consistently improving, yet it remains insufficient and at times not relevant enough to provide the information needed for constructing indicators.

Throughout our study, we have come with concrete recommendations that can be helpful to improve the situation:

- The timeline of data: Most of the data for the first quarter (three months) are not published until June (six months). This causes delays to paint a concrete and current picture of the situation, especially when dealing with issues that require a timely policy response, e.g. air pollution. An obvious recommendation is to publish the data timely, that is every three months.
- Our study explored trends throughout several years. Often, data for previous years were missing, or mismatching the units, therefore making it difficult to derive an idea about trends or compare the present with the past situation. As such, it is paramount for data to be available and consistent.
- The type of data made available, in a few cases were not relevant and did not provide useful information. For example, there is no data available of how much water there is in Kosovo, but there are detailed data on the length of rivers, which is an interesting yet trivial information. A thorough qualitative review of data sets is thus needed.