

SDG

DATA VISUALIZATION AND REPORTING FOR KOSOVO MUNICIPALITIES

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Zhvillimi i Qëndrueshëm
Sustainable Development

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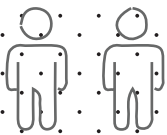
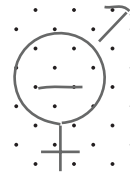
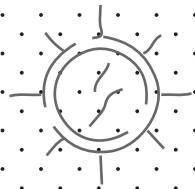
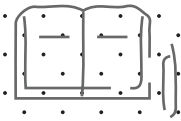
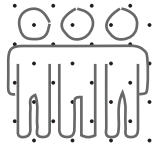
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ACRONYMS

ACA	Affordable Care Act
CMS	Content Management System
EU	European Union
HLPF	High Level Political Forum
INDEP	Institute for Development Policy
KAS	Kosovo Agency of Statistics
LNOB	Leave No One Behind
MLG	Ministry of Local Government
MDG	Millennium Development Goals
MPMS	Municipal Performance Management System
NAO	National Audit Office
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
US	United States
RIA	Rapid Integrated Assessment
RÖ	Region of Östergötland
SDGs	Sustainable Development Goals
VLR	Voluntary Local Reviews
VNR	Voluntary National Reviews
VVSG	Association of Flemish Cities and Municipalities



INTR ODUC TION

The 2030 Agenda for Sustainable Development, the 17 Sustainable Development Goals (SDGs) and its 169 targets represent the United Nations' vision for a better world by 2030.

The SDGs "must be achieved at global, national and subnational levels"¹. The responsibility for the implementation of SDGs lies within all levels of government. This makes municipalities one of the most important players in the implementation of SDGs. In particular, while having in mind, the fact that the SDGs are 'people-centred' and meant to 'leave no one behind', makes the involvement of municipalities an imperative stakeholder, because no institution is closer to the citizens than municipalities. It is estimated that "around 65% of the Agenda 2030 goals, could not be realized fully without the contributions of regional and local level governments"². Kosovo is at a very early stage of embracing the SDGs and its targets. On a related note, it should be highlighted that Kosovo is not a member of the UN and consequently its participation in the High-Level Political Forum (HLPF) is not feasible. In fact, apart from some work done at the central level with the Assembly of the Republic of Kosovo and the Prime Minister's Strategic Planning Office, very little has been done. With regard to municipalities of the Republic of Kosovo, there has been no work whatsoever conducted to localize SDGs.³ Although, it should be noted that plenty of data is regularly produced by municipalities and reported to the Ministry of Local Government (MLG) which could be used to extract and visualize data on fulfilment of SDGs.

Consequently, there is little awareness and knowledge about the SDGs and the 169 Targets. Municipalities throughout the world pay special

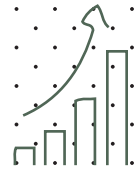
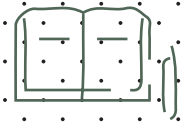
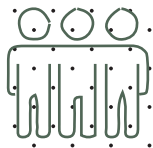
attention to the visualization of SDGs for both awareness-raising and reporting purposes, but in Kosovo apart from some promotional and awareness raising campaigns undertaken by local think tanks, there is no organized institutional approach or policy to promote SDGs. Kosovo municipalities need to learn from best examples, embrace, localize, implement and start visualizing SDGs within their communities.

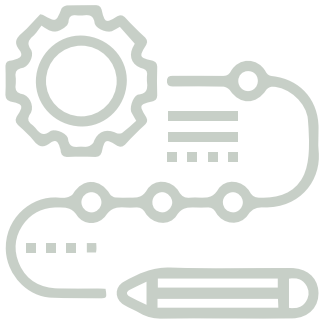
This paper aims at studying and presenting best cases of recording and visualizing SDGs data at local level in developed countries. It will initially provide a brief overview of the SDGs and the importance of data visualization for the purposes of SDGs' implementation. It will further provide insights into successful examples of localizing SDGs at local level in certain parts of the world and the necessary steps that Kosovo municipalities must take on the basis of such success stories. Throughout the paper, examples of SDGs data visualization by municipalities and cities in Europe are presented to make the paper more informative. Besides the examples from the Europe, a dedicated section of this paper presents a couple initiatives conducted by local think tanks in regards to promoting 2030 Agenda and localizing SDGs in the municipal level. Finally, recommendations will be provided to Kosovo municipalities on how to move forward with regard to the implementation of SDGs by 2030.

¹Agenda 2030 in my municipality. A handbook for practitioners for localizing the Sustainable Development Goals (SDGs). A group of authors; February 2019. http://www.nalas.eu/News/SDGs_Handbook.

²Page 16, Ibid.

³Interview with Rozafa Ukimeraj, Secretary General, Ministry of Local Government, conducted on 15 October 2020.





METHODOLOGY

The report methodology combines various research methods, including desk research, analysis of qualitative and quantitative data, data comparison, identification and presentation of case studies and semi-structured interview.

For the purpose of the report, key UN documents on SDGs and 2030 Agenda were closely considered. Furthermore, a number of Voluntary National Reviews (VNRs) and Voluntary Local Reviews (VLRs) were studied to identify the best cases of SDGs localization, development of locally appropriate indicators, data collection and visualization. Also, reports covering a high number of countries and cities were studied, such as the Compendiums of National Institutional Arrangements, the European Union (EU) and US Cities Reports and more.

Moreover, a number of booklets, manuals and digital campaign materials produced by different states and municipalities around the world were reviewed. Research into municipal/cities websites was conducted to see best examples of data visualization. A number of publications in

the field of data science related to data visualization were studied.

For the purpose of ascertaining the state of affairs in the municipalities of Kosovo, an interview was also conducted with the representative of the MLG and a series of informal consultations with municipalities and civil society representatives. Municipal performance reports for the last few years and respective indicators were studied and compared with UN and other indicators. A number of publications, primarily conducted by the Institute for Development Policy (INDEP), as a local think tank profiled in sustainable development, were also reviewed.

Finally, the report intentionally contains numerous visual examples of awareness campaigns and promotion of SDGs, reporting formats, indicators and approaches to SDGs localization, as well as examples of interactive platforms and websites for purposes of data visualization, in order to present a multitude of approaches applied by various municipalities, cities and countries for the benefit of Kosovo municipalities.

SUSTAINABLE DEVELOPMENT GOALS





WHAT ARE THE SUSTAINABLE DEVELOPMENT GOALS

This section of the paper will provide a brief overview of the 17 SDGs. The 2030 Agenda for Sustainable Development was adopted by all UN member states in 2015, as a commitment to be achieved by all countries until 2030. The SDGs represent the continuation of the commitments of Millennium Development Goals (MDGs) that expired in 2015. As stated in the introduction, the SDGs encompass a new development approach which takes into consideration 3 dimensions that are economic, social and environmental. At the heart of the 2030 Agenda remains the principle of LNOB. Therefore, the fulfilment of the 17 SDGs requires the engagement of governments at all levels, civil society organizations, business community, academia and citizens themselves.

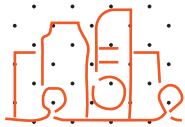
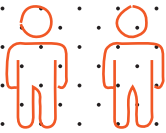
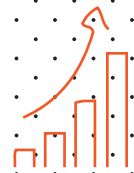
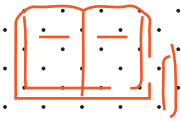
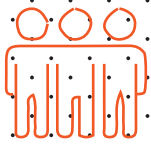
Countries commenced implementing SDGs by localizing them into their legislation and policies. Many countries have developed or reviewed their national development strategies which reflect SDGs. This ensures that countries live up to their commitment undertaken in 2015. Progress towards the fulfilment of SDGs by countries is assessed and presented through VNRs which are submitted and presented at the HLPF⁴. The HLPF meets annually as the main

UN's political "platform on sustainable development and it has a central role in the follow-up and review of the 2030 Agenda for Sustainable Development the Sustainable Development Goals (SDGs) at the global level"⁵.

Localizing SDGs only at the national level is not sufficient for their achievement. Therefore, their reflection is necessary at regional and/or municipal level of government as well. Most of the actions deriving from SDGs are directly implementable by the municipalities or other local levels of government. This makes municipalities an important player in the accomplishment of the 2030 Agenda for Sustainable Development. However, when it comes to reporting, while many countries report on SDGs' implementation progress through the VNR, not many municipalities/cities develop VLRs. The VLR is a report presenting the local authorities progress towards the implementation of the SDGs in the respective city, municipality or region.

⁴ The establishment of the United Nations High-level Political Forum on Sustainable Development (HLPF) was mandated in 2012 by the outcome document of the United Nations Conference on Sustainable Development (Rio+20), "The Future We Want".

⁵ See at: <https://sustainabledevelopment.un.org/hlpf>





THE IMPORTANCE OF DATA VISUALIZATION

Data visualization has multiple functions and benefits for both institutions and governments at all levels. Data visualization is a form of effective communication of important information. Furthermore, it summarizes and displays graphically large quantities of data to make them more comprehensible. More importantly, data visualization “make it easier to identify patterns, trends and outliers in large data sets”⁶.

Also, “data visualization can be essential to strategic communication: it helps us interpret available data; detect patterns, trends, and anomalies; make decisions; and analyse inherent processes”⁷. Moreover, its importance lies in the fact that “visual representation that uses images is a much more effective way to communicate information than text or a table” and that “data visuals are more attractive, simpler to take in, and easier to remember”⁸.

When it comes to SDGs, data visualization is of crucial importance. The reason is that for one to monitor the implementation of SDGs one needs large quantities of data from various institutions and stakeholders. As presented in the case studies throughout the paper, data visualization enables a clear and comprehensible display of large quantities into a single page.

Furthermore, SDGs data visualization makes it easier for all stakeholders to stay up to date with SDGs level of implementation. Having in mind the inclusive nature of SDGs, i.e. ‘people-centred’ and ‘leave no-one behind’ principles, makes data visualization even more relevant in order to make sure that all citizens understand them. Data visualization makes it easier to report, track progress, identify shortcomings or gaps in implementation and undertake measures in order to improve the stance in the future.

There are different platforms used to visualize data. One can visualize data by using a simple Excel spreadsheet, which transforms data into tables, charts, etc. Moreover, one could use more advanced programs and software-based platforms. Having said that, and as can be seen in the next sections of the paper, there are many successful examples of interactive platforms which allow stakeholders to navigate easily with available data in a visualized form.

⁶ See at: <https://searchbusinessanalytics.techtarget.com/definition/data-visualization>, accessed on 03 November 2020.

⁷ Visualize It! A comprehensive Guide to Data Visualization. See at <https://www.netquest.com/hubfs/docs/ebook-data-visualization-EN.pdf?hsCtaTracking=ffb22d35-151f-46b0-a4c3-299791ae9a11%7Cae3d698-906e-411e-af70-808b6ae3d4ab>

⁸ Ibid.

For the purposes of localizing and implementing SDGs, data visualization has five key functions:

1. Promote and raise the awareness on SDGs;
2. Present collected data on SDGs implementation in a visual context,
3. Facilitate the monitoring of progress of SDGs on regular basis,
4. Make decision-making easier at local and national level,
5. Improve communication and dialogue among stakeholders.

The first function, **promoting and raising awareness on SDGs**, is specifically important in the Kosovo context having in mind that the level of knowledge, awareness and localizing SDGs is very low. Before going ahead with data collection on SDGs' implementation, municipal officials need some education on SDGs and their importance, as well as to promote SDGs through visualization in order to seek partnership with stakeholders and citizens in their application. Citizens also play a crucial role towards advancing the 2030 Agenda, therefore, they must also gain some basic understanding of the SDGs and learn ways on how they can contribute to the improvement of their welfare and life in general.



There are many creative ways of visual presentation of SDGs for purposes of promotion and awareness raising. A very good illustration of creative ways of raising the awareness on SDGs is a booklet produced by the Association of Flemish Cities and Municipalities (VVSG)⁹. The booklet contains 50 examples to raise the awareness of government officials, as well as citizens. Some of these creative promotions include: SDGs stress balls, SDGs postcards, SDGs in the municipal logo, SDGs tote/shopping bags, SDGs window stickers, SDGs comic books, SDGs chairs, and many more. Promotional materials, such as shopping bags with SDGs' (see the picture on the right hand side) have multiple positive impacts, i.e. raising the awareness on a specific SDG, using environmentally-compliant shopping bags, reducing the use of plastic bags, etc.

⁹ SDGs' in Your Municipality: 50 Practical Awareness Raising Examples, VVSG (Association of Flemish Cities and Municipalities). See at: <http://sdgtoolkit.org/tool/sdgs-in-your-municipality/>

Art installations are another creative way of raising the awareness of citizens on the SDGs. The example below, is an art installation of a Rubik's Cube visualizing 17 SDGs that was placed in Tbilisi, Georgia. It was placed as part of the public campaign organized by UN Office in Georgia and civil society organizations to raise the awareness of the population on SDGs¹⁰. There are many other examples of SDGs visualization that contribute to the awareness raising of the citizens, government officials and municipal officials who can learn from and apply in Kosovo.



The second function, **present collected data on SDGs implementation in a visual context**, is extremely important. In particular for purposes of SDGs, data visualization gets great importance because it allows to summarize, categorize, report, present and easily digest large quantities of data. Having in mind that there are 17 SDGs and 169 targets, makes their visualization almost necessary.

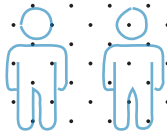
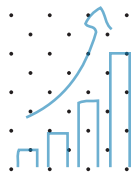
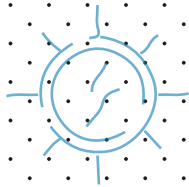
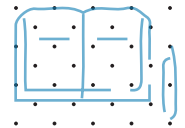
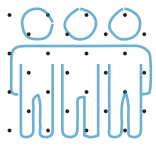
However, SDGs visualization heavily depends on targeted data collection and reporting on SDGs' implementation. Therefore, municipalities need to collect data in a format that captures progress against the 17 SDGs and 169 targets, and then report and visualize them. In any case, cooperation between municipalities and several key institutions and stakeholders is critical to ensure all relevant data is captured and reported.

The third function, **facilitate the monitoring of progress of SDGs on regular basis**, will make life easier for professionals involved in the implementation and supervision of SDGs'. Specifically, officials in various government departments and municipal bodies, tasked with implementation and monitoring of SDGs', will greatly benefit from data visualization because it would save time to them, have data displayed visually and see progress or regress trends as updated or in real time if interactive platforms are developed and applied.

The fourth, **make decision-making easier at local and national level**, is a function very useful for high-level political decision-makers. Having in mind that ministers and mayors have many other duties and responsibilities as well as taking into account that SDG' cover a wide scope of areas, having large quantities of data presented in a summarized and visualized format enables them to a faster informed – and data – based decision-making.

The fifth function, **improve communication and dialogue among stakeholders**, revolves around one of the essentials of data visualization, i.e. communication. The communication of visualized data on SDGs' to citizens and other stakeholders such as academia, business community, civil society organizations will significantly facilitate and improve dialogue which is crucial for the very nature of SDG. It will give a change for everyone to engage and thereby leave no one behind.

¹⁰ See at: <https://georgia.un.org/en/47203-un-unveils-art-installation-take-sdgs-public>





STATE OF AFFAIRS IN MUNICIPALITIES OF THE REPUBLIC OF KOSOVO

As pointed out in the Introduction, the awareness and level of knowledge of Kosovo municipalities and citizens in general about the SDGs is very low. Just like with the central level institutions, municipalities too have very limited progress in relation to SDGs. Overall, at the global level there is a “knowledge gap related to the implementation and integration of the SDGs into municipalities’ existing strategies, policies and practice”¹¹, which needs to be elucidated by research in order to enhance for rapid and effective implementation.

In Kosovo, the SDGs have not been localized by any of the municipalities¹². This means that:

- There are no coordinated public campaigns at municipal level conducted on SDGs and the Agenda 2030;
- Very few capacity building efforts for municipal staff on SDGs took place;
- SDGs are not reflected in any of the municipal strategies, plans, policies and budgets;
- No localized indicators were developed to capture SDGs’ implementation;
There are no data collected on SDGs’ implementation;
- There is no reporting whatsoever on SDGs; and
- There is no SDGs data visualization.

Nevertheless, there are plenty of regular data collected and produced by municipalities as part of the Municipal Performance assessments. Some of these data could be useful to extract

information on areas covered by SDGs. However, this would be a complicated and more laborious process because the current data are collected on the basis of different set of indicators, and not on the basis of SDG-specific indicators.

The current Municipal Performance Management System (MPMS) is divided in 19 fields, which cover the rights, duties and responsibilities of municipalities to provide basic services to citizens¹⁴. These fields are further broken down into 37 outcomes and a total of 119 indicators.

Out of the 19 fields covered by the MPMS, almost all cover some SDGs, although not all are directly corresponding to each SDG¹⁵. Fields 1, 2 and 3 for example cover SDG 16 superficially. There are some fields such as 6, 7 and 8 that could merge with Field 15. Some of the fields that more significantly cover SDGs’ include: Equality in Employment, Social and Family Services (Field 4), Spatial Planning (Field 7), Road Infrastructure and Public Transportation (Fields 9 and 10), Drinking Water (Field 12), Sewage (Field 13), Environmental Protection (Field 15), Gender Representation (Field 16) and Local Economic Development (Field 19). Nevertheless, specific SDG-based indicators need to be developed to properly capture implementation and progress in a more targeted and effective way.

¹¹ Implementing the Global Sustainable Goals (SDGs) into Municipal Strategies Applying an Integrated Approach, Sara Gustafson and Jenny Ivner, October 2017

¹² Interview with Rozafa Ukeimeraj, Secretary General, Ministry of Local Government, conducted on 15 October 2020

¹³ It should be pointed out that the local think-tank, Institute for Policy Development (INDEP) conducted some activities with seven municipalities by developing seven booklets on localizing SDGs’.

¹⁴ See at: <https://mapl.rks-gov.net/en/mlga-annual-reports/>

¹⁵ The full coverage of SDGs’ by the MPMS 19 fields would require additional analysis which goes beyond the scope of this paper.

No.	MUNICIPAL FIELD	SDG
1.	Public Administrative Services	
2.	Municipal Transparency	
3.	Municipal Responsibility	
4.	Equality in Employment, Social and Family Services	
5.	Culture, Youth and Sports	
6.	Disaster Management	
7.	Spatial Planning	
8.	Public Space	
9.	Road Infrastructure	
10.	Public Transport	
11.	Public Parking	
12.	Potable Water	
13.	Sewage	
14.	Waste Management	
15.	Environmental Protection	
16.	Gender Representation	
17.	Pre-University Education	
18.	Primary Health Care	
19.	Local Economic Development	

The indicators provide data to measure municipal progress in the respective fields. There are many indicators related to the administrative performance of duties and responsibilities. However, with some adoption, the indicators designed for some of the relevant fields to SDGs could be useful in capturing progress around SDGs.

Performance measurement indicators are inserted into a software-based program "Content Management System" (CMS). Each municipality is linked to the CMS which enables municipalities to report and communicate via the government electronic network. The indicators are updated electronically every 3 years. The last update was done in 2019.

There is willingness by the highest level of civil service at the MLG to engage more in the implementation of SDGs. It was further confirmed that there is capacity by municipalities in Kosovo to capture and report data on SDGs via the CMS. If there is political will and commitment to localize and report on SDGs, and if CMS is to be used for that, there will be an opportunity in 2022 to modify or add indicators that would capture SDGs' implementation.

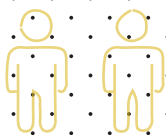
On a related note, the Kosovo Agency of Statistics regularly produces data. Out of the overall indicators applied, some 50 indicators are relevant to SDGs' and to SDG Global Indicators. Other institutions such as the National Audit Office, the Anti-Corruption Agency, the Ombudsperson and more regularly collect and produce reports that contain data which could be useful for SDGs'. But currently apart from the KAS that covers some 50 indicators, no other institutions produce SDG specific data. However, if partnership

agreements are concluded, they could all serve as valuable sources of information as well as assist in implementation.

Currently, the municipalities do not enshrine SDGs' into their policy documents and resultantly do not link the award of grants with SDGs'. Once municipalities decide to localize SDGs', their policies and procedures need to make clear connection and relevant between the grants and SDG completion. There are no incentives or policies that would encourage citizens to act towards the fulfilment of SDGs'. For example municipalities' agricultural grants are not specifically targeting its poorest citizens in relevant municipalities. Similarly municipalities are not provide incentives and tax reliefs or even rewards for households that install alternative sources of energy such as solar panels.

The recommendations of the present paper could offer a roadmap towards localizing SDGs and introducing a system of capturing, collecting, reporting and visualizing data. Nevertheless, studying and examining each of the current indicators applied within the MPMS versus UN Global Indicators or indicators adopted by cities and municipalities around the globe should be addressed as a separate research. Such a research would pave the way to designing and adopting a set of local indicators for municipalities on the basis of the context of the Republic of Kosovo.

As far as data visualization is concerned, it should be noted that the Municipal Performance Report provides data in a visualized format. Visualized data is broken down on various categories by: the 19 identified fields, municipality, specific indicators and more.



KOSOVO CASE STUDY: Encouraging municipal's network dialogue on sustainable development - Open SDGs Club in Kosovo

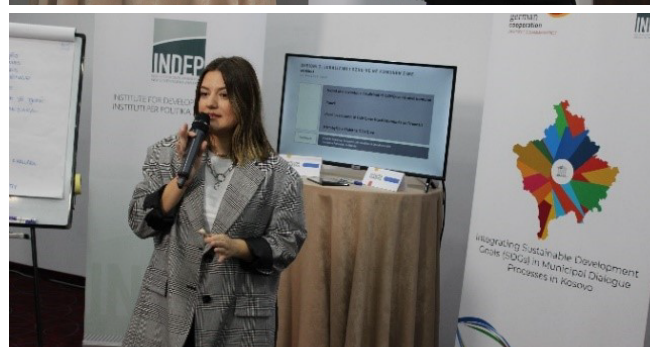
As it was mentioned above, the municipalities of Kosovo have not yet started localizing SDGs within their communities. This happens for many reasons, amongst which is the insufficient capacity building efforts dedicated to the municipal staff on sustainable development agenda. Taking this into account, since 2019, INDEP has designed detailed training programmes entirely dedicated to local level officials from various departments and divisions within the municipalities' structures.

Open SDGs Club: Kosovo Edition was the latest training programme organized by INDEP which aimed to strengthen the capacities of the 38 municipalities of Kosovo on SDGs and 2030 Agenda.

This programme was based on the model of Open SDG Club Berlin, which is a peer learning platform where information and experiences on the implementation of the 2030 Agenda are shared and exchanged¹⁶. Even though the Open SDG Club Berlin included all of the sectors that embrace the 2030 Agenda, starting from national and local level institutions to CSOs, academia and businesses, the edition of Kosovo considering the high need to focus in the capacity building of the municipal officials was focused only in the local level institutions.

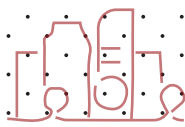
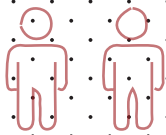
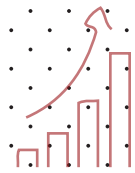
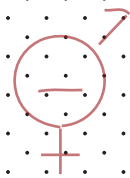
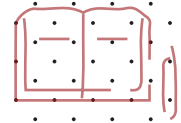
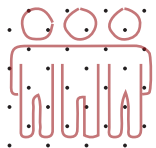
The Open SDGs Club in Kosovo served as a trans-local platform for encouraging mobilization and coordination among all municipalities of Kosovo towards adopting SDGs and 2030 Agenda. The 4-hour long training increased the knowledge and improved the skills of the municipal officials regarding the

localization of SDGs. Moreover, Open SDGs Club in Kosovo enhanced the dialogue between public officials, elaborated more in regards to municipal's sustainable practices, identified potential ideas and initiatives, and shared common causes for sustainable development.



The training was dedicated to all municipalities and was provided in 2 official languages, that of Albanian and Serbian. The Open SDGs Club in Kosovo was attended by over 60 participants and it was held in a virtual format considering the unfavourable epidemiologic situation with the COVID-19. Based on the outcomes and observations from the first edition of Open SDGs Club in Kosovo, it is of high interest to continuously design and organize such capacity building programmes for sustainable development in Kosovo. Hence, the Open SDGs Club initiative has just set the base for the upcoming programmes.

¹⁶ Nachhaltigkeitsrat. Open SDGclub.Berlin. (2016). <https://www.nachhaltigkeitsrat.de/en/projects/open-sdgclub-berlin/>



CASE STUDIES OF SDG DATA VISUALIZATION

As part of localizing SDGs at the local level, municipalities and cities enshrined SDGs into their strategies and plans. Various approaches were taken to including SDGs in the work at local level, as well as on the way of reporting and visualizing data. This section will present below several cases of SDGs reporting and visualization which could serve as good examples for municipalities of Kosovo.

CITY OF BRISTOL

One of the most successful cases of localizing, reporting and visualizing SDGs is the City of Bristol, England. Bristol came up with the One City Plan, which integrates the City's commitment to SDGs. Although the Plan extends to 2050, it includes milestones for actions to be undertaken by 2030, 2040 and finally 2050. The Plan has 2 main vision statements largely based on SDGs.

The first is for Bristol to have “a fair, healthy and sustainable city”. This would be achieved by focusing on 3 key pillars: Connectivity, Economy and Environment. And, the second statement “A city of hope and aspiration, where everyone can share its success” by focusing on: Health and Wellbeing, Homes and Communities, and Learning and Skills. All these enshrine SDGs¹⁷. As one can see in the visuals below, clear links between the 2 statements and relevant coverage of SDGs were made within the One City Plan.

The accomplishment of the vision statements, enshrining SDGs are all interconnected and have impact on one-another. Clear policy commitments were made within each pillar that will guide local authorities towards the accomplishment of the Plan and SDGs simultaneously. Furthermore, Bristol has its SDG Alliance, which plays an instrumental role in driving the 2030 Agenda. The SDG Alliance is a network of city stakeholders that aims to drive interest and actions towards the implementation of the SDGs in the city, the region and national level. It includes the city's two large universities, City Council officials, major businesses, and voluntary organisations forming an alliance for SDGs.



Visualized connection and relation of Bristol's vision statements with SDGs

¹⁷ See Bristol's One City Plan at: https://www.bristolonecity.com/wp-content/uploads/2020/01/One-City-Plan_2020.pdf

Furthermore, the Plan gives a special role to infrastructure as part of the Connectivity. In this regard, it includes a set of statements that cross-cut several SDGs, which shows inter-linkage of SDGs among themselves. These statements of commitment on Connectivity are:

- Transport is healthy, active, sustainable, safe and enables easy movement throughout the city;
- The city is well connected, supporting access to employment, education and services for all;
- World class urban communication infrastructure and services underpin all we do.¹⁸

Infrastructure improvements are closely linked to and have a positive impact on other SDGs. An infrastructural policy statement of an “investment to develop mass transit systems, including underground and overground, and increased support for public transport, cycling and walking options, improving the movement of people across the city”¹⁹, ultimately results in providing access to peoples with disabilities, the elderly, carbon neutrality, children education for active and sustainable modes of transport, unhindered communication with ultrafast Wi-fi in trains and busses and more. One can see that several SDGs are covered at the time even though the key focus was infrastructure improvements. Below one can see a visualization of the six SDGs’ positively affected by the infrastructure policy.

POLICY

Infrastructure

SDGs COVERED

3 GOOD HEALTH AND WELL-BEING

9 INDUSTRY INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

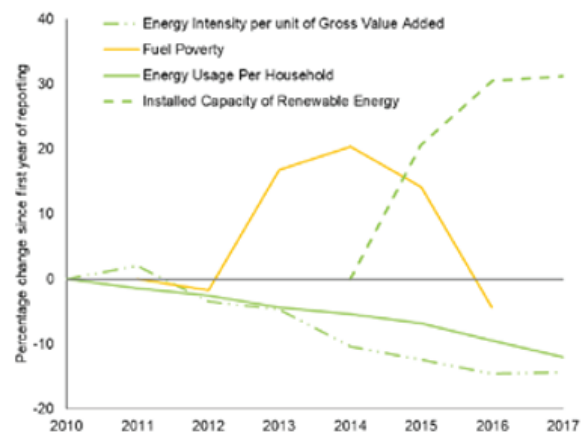
11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

15 LIFE ON LAND

Furthermore, Bristol decided to produce a VLR of progress, which makes this city stand out from the rest. It’s important to highlight that when developing the VLR Bristol made efforts to make as objective as possible. It is a comprehensive report that measures progress in the implementation of SDGs by combining “a comprehensive review of statistical indicators with an extensive consultation exercise” and it is

“produced independently of the city government and aims to present an inclusive portrait of how the city is faring, and what actors across sectors are doing to support SDG progress”.²⁰ The review follows guidance provided by UN DESA in the handbook for the preparation of VNRs²¹. The VLR provides summaries for the implementation of each SDG. There is a brief narrative description of progress, complemented with data visualization which makes the report more comprehensible for everyone. This paper presents 2 examples of data visualization for SDG 7 and SDG 14, as extracted from Bristol’s VLR.



Trends in energy consumption, efficiency and renewables

Status Descriptor	2012	2013	2014	2015	2016	2017	2018
Rivers in Good ecological status	14%	14%	14%	0%	0%	0%	0%
Rivers in Moderate ecological status	57%	57%	57%	57%	100%	86%	86%
Rivers in Poor ecological status	14%	14%	29%	43%	0%	14%	14%
Rivers in Bad ecological status	14%	0%	0%	0%	0%	0%	0%
Rivers without data	14%	14%	0%	0%	0%	0%	0%

Trends in ecologic status of Bristol rivers

One can see that in both cases the VLR uses data visualization to present large quantity of data in a summarized and comprehensible format. Data on progress against SDG 7 is presented through a graph showing an increase in installed capacity of renewable energy and a decline in fuel poverty, which is a priority for Bristol Data. On the other hand, data on progress against SDG 14 is presented in the classic form of a table with percentages showing improvements in the ecological status of rivers. Overall, the case shows the power of data visualization by conveying plenty of accumulated data throughout the years in a short and user-friendly way.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Bristol and the SDGs: A Voluntary Local Review of Progress 2019

²¹ See at

https://sustainabledevelopment.un.org/content/documents/20872VNR_handbook_2019_Edition_v2.pdf

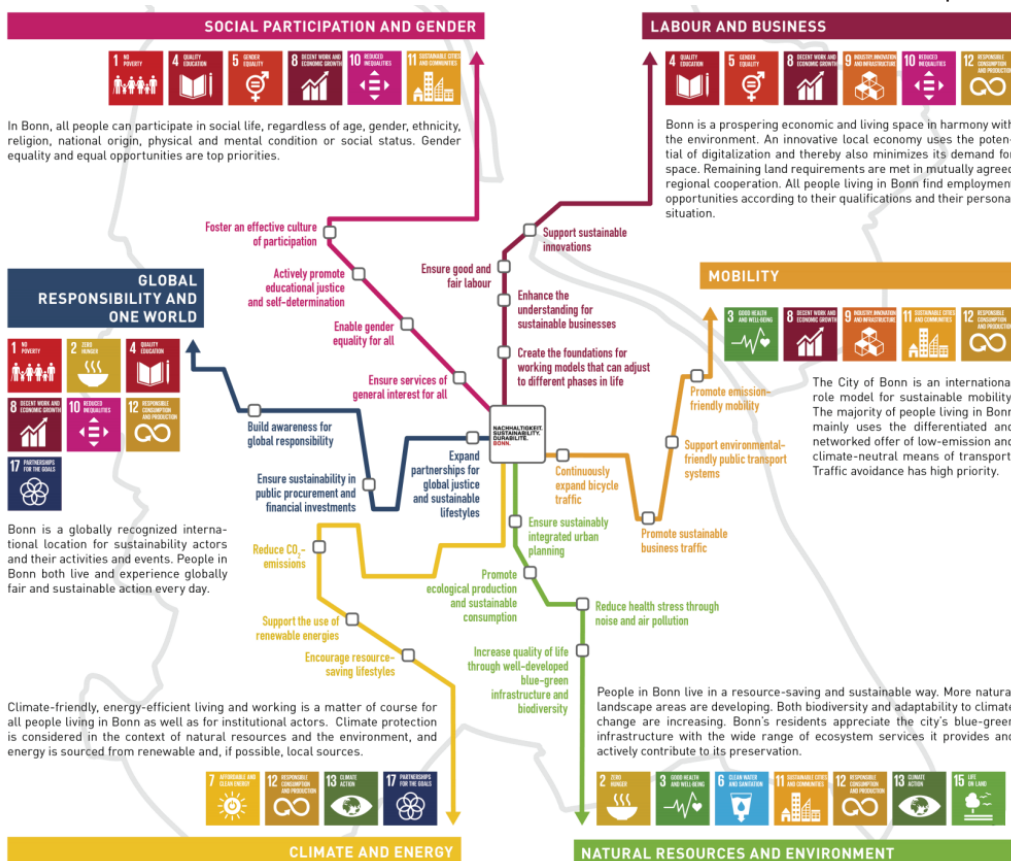
MUNICIPALITY OF BONN

Besides Bristol, a good example of prioritizing SDGs for the municipality is the City of Bonn. The City of Bonn localized SDGs through its Sustainability Strategy in February 2019. The strategy “transfers the 17 Goals to six municipal fields of action in Bonn”.²² This approach of reflecting SDGs into local strategies and policies is very effective since it allows the municipality to keep its focus on priority areas for its citizens, while at the same time fulfilling SDGs. This merger of priority areas for Bonn with SDGs presented in a visual format too. The visualization below shows the linkage between SDGs and municipal policy aims. It also shows how one policy priority can address several SDGs simultaneously as in the case of Bristol. This excellent visual statement below not only makes is comprehensible to all citizens what the priorities of the city are and which SDGs are being covered, but it also provides clear orientation to municipal staff and keeps them reminded of the SDG commitments.

One can see the categorization of SDGs into 6 policy aims:

- Social Participation and Gender (SDG 1, 4, 5, 8, 10 and 11);
- Labour and Business (SDG 4, 5, 8, 10 and 12);
- Global Responsibility and one world (SDG 1, 2, 4, 8, 10, 12 and 17);
- Mobility (SDG 3, 8, 9, 11 and 12);
- Climate and Energy (SDG 7, 12, 13 and 17);
- Natural Resources and Environment (SDG 2, 3, 6, 11, 12, 13 and 15).

The inter-connection of SDGs is very clear. For example: SDG 4 on Quality Education and SDG 5 on Gender Equality fall within the Social Participation and Gender, as well as Labour and Business policy themes. The same goes for SDG 12 on Responsible Consumption and Production and SDG 13 on Climate Action fall within both Climate and Energy, as well as Natural Resources and Environment policy themes. This makes cooperation among various municipal bodies and stakeholders necessary for successful implementation of SDGs.



Progress on the implementation of the Sustainability Strategy is reflected in a comprehensive report. The report measures progress against a total of 55 indicators. The report heavily relies on data visualization.²³

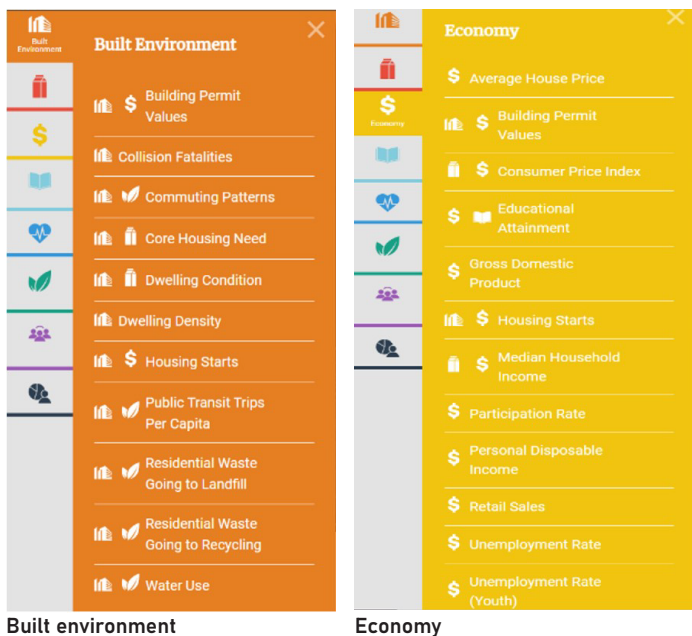
Enshrining SDG with municipal policy priorities by Municipality of Bonn

²² See at: https://www.bonn.de/medien-global/amt-02/Sustainability_Strategy_City_of_Bonn_in_a_nutshellf.pdf

²³ See report [in German] https://www.bonn.de/medien-global/amt-67/lokale-agenda/Nachhaltigkeitsbericht_Bonn_2016-19_Juni2020_WEB.pdf

CITY OF WINNIPEG

The City of Winnipeg provides one of the best examples of reporting, monitoring and data visualization. The website www.mypeg.ca is a very user-friendly and interactive source for SDG visualization and implementation. The website “integrates SDGs’ into its [city’s] indicator framework” by putting “Peg at the leading edge of how community indicator systems are tracking progress – incorporating locally identified indicators and connecting them to global priorities”.²⁴



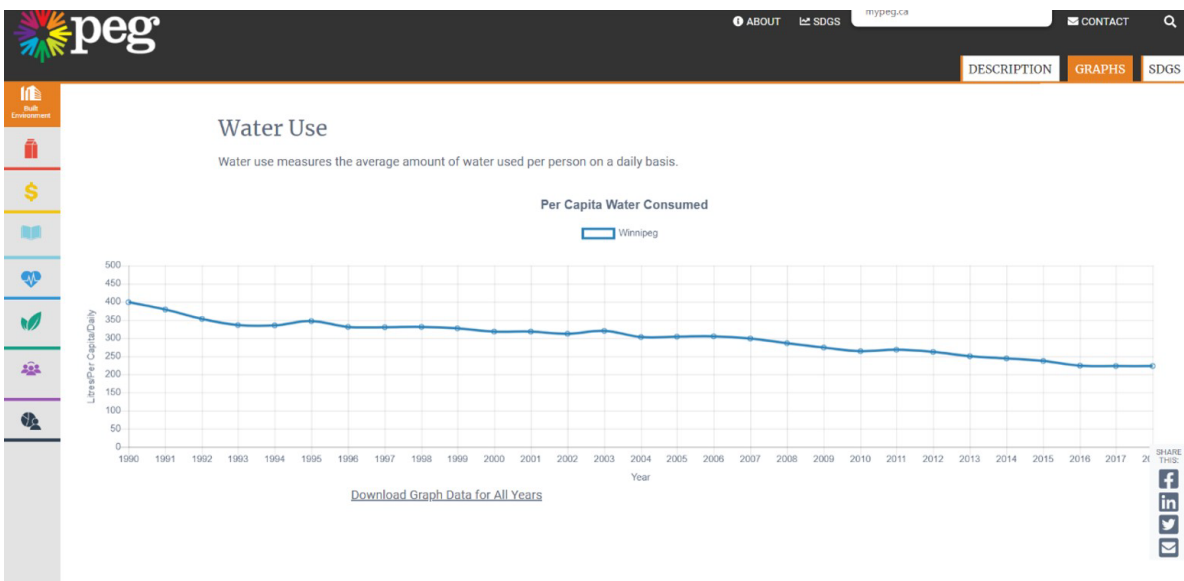
Peg integrates the 17 SDGs within eight (8) policy areas. These policy areas are: Build Environment; Basic Needs; Economy; Education and Learning; Health; Natural Environment; Social Vitality and Governance; and Demographics. Each of these policy areas is visualized and contains sub-categories. For illustration purposes, the paper presents 2 of these areas: Build Environment and Economy. By clicking into ‘Build Environment’ one gets several subcategories appearing. The same goes for Economy and other 6 policy areas.

Furthermore, when one clicks into any of the subcategories one will get visualized data about that policy area. If one clicks on the right-hand side of the window, one has the option ‘SDG’ that shows to which SDG and target the policy area is related. On top of that, there is a box ‘Description’ which provides narrative information and relevant sources. This SDG-policy area connection makes it much easier to implement SDGs for municipal officials, as well as to report on them. All this culminates with an excellent data visualization.

²⁴ See at: <https://www.mypeg.ca/sdgs/>.

The illustration below shows an excellent visualization of SDG data related to water use. Covers large quantities of data simplified within a single visual. Data visualization below enables to present information on average water consumption by citizens of Winnipeg since 1990. Moreover, if one clicks on the right hand-side, the link takes you directly to the SDG 6 on Clean Water and Sanitation and Target 6.4.

Interactive software-based platforms, such as the one applied by the City of Winnipeg, make it very easy for stakeholders like civil society organizations, interest groups, academia, research community, students and more to get a hold of the data they are after. Most importantly, it's very easy to use and navigate for each citizen by enabling high levels of transparency and accountability.



SUSTAINABLE DEVELOPMENT GOALS Water Use in the Sustainable Development Goals

Click on the SDG to reveal more information

6. Ensure access to water and sanitation for all

Clean, accessible water for all is an essential part of the world we want to live in. There is sufficient fresh water on the planet to achieve this. But due to bad economics or poor infrastructure, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation and hygiene.

Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities for poor families across the world. Drought afflicts some of the world's poorest countries, worsening hunger and malnutrition.

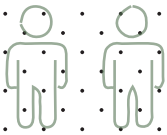
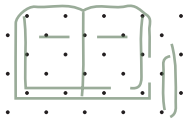
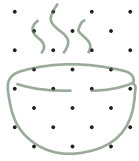
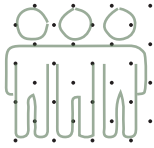
By 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water.

[Learn more from the UN here >>](#)

Related Water Use Targets

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

Water Use Data Visualization and Connection to SDG and Target





MOVING FORWARD: LOCALIZING SDGs BY KOSOVO MUNICIPALITIES

Data visualization for SDGs is important for several reasons mentioned throughout the report: the ability to present large quantity of data, presenting long-term projections, facilitate the tracking progress, contribute to accountability and transparency by displaying information and performance data before citizens and more.

However, to have a successful data visualization certain preconditions are required to be met by municipalities. Municipalities need to show political commitment and willingness to localize SDGs and the 2030 Agenda. Localizing SDGs would then result in generation of data, which would be visualized by municipalities. It's very important to receive and use disaggregated data "in order to operationalize its principle of leaving no one behind".²⁵

Therefore, there is a "need to develop capacities at the national and local levels to capture, report and disseminate data, disaggregated by gender, age, ethnicity and geographical location" that would enable "visualizing and counting everybody as the key to the ability to have the proper last-mile interventions designed".²⁶

Some of the steps that municipalities of Kosovo need to take to localize SDGs and the 2030 Agenda are given below. These would lead to the collection, reporting and visualizing of SDG related data.

²⁵ See Rapid Integrated Assessment (RIA): Facilitating mainstreaming of SDGs into national and local plans

²⁶ See Rapid Integrated Assessment (RIA): Facilitating mainstreaming of SDGs into national and local plans

CONDUCT AWARENESS RAISING CAMPAIGNS

As a first step, it is necessary to raise the awareness of the citizens about the importance of SDGs and why they are relevant for the communities. Also, an awareness-raising and training component should be designed for public servants at the local level, as it would lead to better SDG implementation. The organization of various conferences, workshops and capacity building activities would further lead to increased awareness on SDGs and their importance for the communities.



SDG Badges



Municipal Logos of Balen and Sint Truiden



SDG Window Stickers

Below are presented a couple of cases designed and applied in different states to raise the awareness and promote SDGs. The booklet *SDGs in Your Municipality: 50 Practical Awareness Raising Examples* provides many creative ways of promoting SDGs through visualization. Some of these examples include: making SDG badges, producing stress balls with SDGs, SDG background intranet page, designing an SDG municipal logo, the appointment of SDG Ambassadors among the renowned personalities of the municipality, the award of SDG grants, SDG window stickers and more.

Visualization of SDGs for purposes of promotion and awareness raising is a starting point for each municipality.²⁷ The examples given above would keep municipal officials focused on SDGs on daily basis and would also remind citizens to get engaged on SDG implementation.



SDGs in Public Transport

²⁷ At the time of writing of this paper, INDEP already commenced a series of training sessions on SDG for municipal officers.

ENSHRINE SDGS' INTO LOCAL STRATEGIES AND PLANS

The best way to move ahead with SDG implementation is to reflect them in all municipal strategic documents. This means that the municipalities should, when developing and revising, their local strategies and plans enshrine SDGs. Attention to adequate budgeting should also be paid to ensure that there are sufficient resources for their implementation. Ideally, when doing so, consistency should be ensured with country-level strategies and plans, which in the case of Kosovo would be the National Development Strategy²⁸.

To ensure a successful implementation, SDGs should be enshrined at 4 levels: strategic, encompassing the vision and strategies; tactical, including networking and coalitions; operational, meaning implementation at project level; and monitoring, through a set of indicators and consequent reporting.²⁹

The case of Mannheim is an ideal example of the commitment at strategic level made by local authorities for the implementation of SDGs. Mannheim developed the Mission Statement through a planned and inclusive process with more than 2,500 citizens participating in this discussion very actively...10,000 citizens integrated via opinion polls, and with...1,500 proposals for the Mission Statement made.³⁰ As a result of this process, the Mission Statement contains 7 strategic goals each enshrining several SDGs.

Another outstanding example is with Sweden's Region of Östergötland (RÖ). Within a single policy field, they addressed several SDGs by applying a holistic approach. RÖ public transport policy simultaneously provides "equal, affordable and available public transports contributing to decreasing the feeling of relative poverty (SDGs 1 and 5), at the same time as they increased the availability of recreational activities and areas (SDG 3)...and the use of fossil free fuels and clean, efficient vehicles to contribute to reduced emissions of pollutants (SDGs 13, 14 and 15).³¹

1 Mannheim guarantees educational equality and works to prevent poverty. The social and cultural integration of all Mannheim residents is guaranteed. **1 NO POVERTY**, **4 QUALITY EDUCATION**, **8 DECENT WORK AND ECONOMIC GROWTH**, **11 SUSTAINABLE CITIES AND COMMUNITIES**

2 Mannheim offers an exemplary urban quality of life with a high level of security as a basis for a healthy, happy life for people of all age groups, thereby gaining more citizens for the city. **2 AFFORDABLE AND CLEAN ENERGY**, **3 GOOD HEALTH AND WELL-BEING**, **4 QUALITY EDUCATION**, **11 SUSTAINABLE CITIES AND COMMUNITIES**, **16 PEACE, JUSTICE AND STRONG INSTITUTIONS**

3 Mannheim is characterized by a supportive city community and is a model for communal life in cities. Gender equality and the acceptance of diverse human identities and lifestyles have been achieved. **1 NO POVERTY**, **5 GENDER EQUALITY**, **10 REDUCED INEQUALITIES**, **11 SUSTAINABLE CITIES AND COMMUNITIES**

4 Mannheim is distinguished by a strong city community and good administrative procedures. Mannheim residents make use of the possibilities of taking part in democratic and transparent processes regarding the development of their city to an above-average extent. **4 QUALITY EDUCATION**, **10 REDUCED INEQUALITIES**, **11 SUSTAINABLE CITIES AND COMMUNITIES**, **16 PEACE, JUSTICE AND STRONG INSTITUTIONS**, **17 PARTNERSHIPS FOR THE GOALS**

5 As a digital and innovative metropolis, Mannheim creates the conditions for companies of every size to realize diverse and sustainable growth as well as attract talented and skilled employees. **4 QUALITY EDUCATION**, **8 DECENT WORK AND ECONOMIC GROWTH**, **9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**, **11 SUSTAINABLE CITIES AND COMMUNITIES**, **12 RESPONSIBLE CONSUMPTION AND PRODUCTION**

6 Mannheim is a climate-friendly – in perspective, climate-neutral – and resilient city that is a model for environmentally friendly life and actions. **6 CLEAN WATER AND SANITATION**, **7 AFFORDABLE AND CLEAN ENERGY**, **11 SUSTAINABLE CITIES AND COMMUNITIES**, **12 RESPONSIBLE CONSUMPTION AND PRODUCTION**, **13 CLIMATE ACTION**, **14 LIFE BELOW WATER**, **15 LIFE ON LAND**

7 Mannheim is a model for international cooperation between cities. Municipal development policy and responsible consumption contribute to global justice and sustainable international policy. **10 REDUCED INEQUALITIES**, **11 SUSTAINABLE CITIES AND COMMUNITIES**, **12 RESPONSIBLE CONSUMPTION AND PRODUCTION**, **16 PEACE, JUSTICE AND STRONG INSTITUTIONS**, **17 PARTNERSHIPS FOR THE GOALS**

Mannheim's Mission Statement and Relation to SDGs

When enshrining SDGs' into local municipal strategies and plans attention should be paid to linking SDG fulfilment with grants, awards and tax reliefs or incentives. These would encourage citizens to act towards the fulfilment of SDGs'. For example, municipalities could award agricultural grants to its poorest citizens in relevant municipalities. This would at the same time develop agricultural and local economy while tackling poverty; similarly municipalities could provide incentives and tax reliefs or even rewards for households that install alternative sources of energy such as solar panels.

²⁸ See at http://www.kryeministri-ks.net/repository/docs/National_Development_Strategy_2016-2021_ENG.pdf

²⁹ Implementing the Global Sustainable Goals (SDGs) into Municipal Strategies Applying an Integrated Approach, Sara Gustafson and Jenny Ivner, October 2017

³⁰ See at: https://sdgs.un.org/sites/default/files/2020-09/25023VLR_City_of_Mannheim_final.pdf

³¹ Implementing the Global Sustainable Goals (SDGs) into Municipal Strategies Applying an Integrated Approach, Sara Gustafson and Jenny Ivner, October 2017

DEVELOP INDICATORS

The development of indicators is one of the most important steps for authorities towards the accurate and relevant collection of data. Having in mind their importance, indicators should be carefully designed through a consultative and inclusive process. The set of indicators – designed based on best practices but adapted to the local context – would then capture the desired data in disaggregated formats. The collected data would afterwards serve for reporting and visualization. When doing so, it's important to make clear visualized relations between the SDGs, the indicator, the data and progress or regress. Ideally, the end product, should municipalities choose to do so, would be to write up regular VLR which would present progress and identify areas for further improvement.

The UN-developed Global Indicators are very general and sometimes vague. Therefore, it is necessary that these indicators are translated and customized to capture progress at local level. Each municipality, coordinated by MLG, should adopt target indicators to measure progress towards the implementation of each SDG or against policies that covers one or more SDGs. For the purpose of developing indicators at local level, municipalities can rely on already-existing indicators and then narrow them down to the local context.

Some of the indicators developed and used worldwide include:

- The SDGs' Global Indicators list developed by Agency and Expert Group on SDG Indicators³²
- Europe Cities indicators³³
- US Cities indicators³⁴

The city of Turku³⁵ is among those at local level that developed a VLR. The city of Turku developed indicators on the basis of each SDG and collected data accordingly. One can see below the examples of Turku's indicators for SDG 7 and 13 presented in a table format.

Green arrow downwards/upwards = Positive trend
Red arrow downwards/upwards = Negative trend

City Strategy indicator	Turku indicator value	Turku indicator trend	Desirable trend
Proportion renewable and carbon-neutral energy production account for of total electricity generation	2018: 54%	↑	↑
Proportion renewable energy accounts for district heat production	2019: 61%	↑	↑
Proportion of energy produced utilising waste	2018: 79.5%		

SDG 7: Affordable and Clean Energy

Green arrow downwards/upwards = Positive trend
Red arrow downwards/upwards = Negative trend

City Strategy indicator	Turku indicator value	Turku indicator trend	Desirable trend
Decreasing greenhouse gas emissions	2018: 866.9 kt CO2eq per year	↓	↓
Proportion renewable energy resources account for of district heat production	2018: 50%	↓	↓
Proportion walking, cycling and public transport account for of all modes of transport	2016: 38%		↑
Logistics connections	No numeric values available		

SDG 13: Climate Action

There are other cases when indicators are not developed on the basis of each SDG or target. Instead, they are developed on the basis of local strategies or plans which enshrine and cover one or more SDGs. The city of Mannheim is an excellent example of developing local indicators in an alternative form. These indicators are not developed on the basis of each SDG, but on the basis of each of their 7 strategic goals, whereby one strategic goal covers several SDGs. For instance, Mannheim's Strategic Goals 6 reflects SDGs 6, 7, 11, 12, 13, 14 and 15. Furthermore, they are very well visualized and their inter-connection clearly made. Progress is also marked for each of the indicator. The example of presentation of the indicators in relation to SDGs and progress in a table form is given on the right-hand side, as extracted from Mannheim's VLR.

Indicator	Definition	Goal Progress	SDG
Car ownership per thousand residents	Number of registered passenger cars per 1,000 inhabitants	↘	11
Annual total of the cars recorded at the automatic counting points		↘	11
Annual mean values (NO ₂ , PM ₁₀) in the city proper	Annual mean values of the concentration of nitrogen dioxide (NO ₂) and particulate matter (PM ₁₀) in µg/m ³ in the City Proper (Verkehrsmessstation Mannheim Friedrichsring)	↘	11
Satisfaction with the OPNV	Percentage of people, who when surveyed, responded that they were satisfied with public transport in Mannheim	↗	11
CO ₂ -Emissions (tons per capita)	Carbon dioxide emissions (CO ₂) in tonnes per inhabitant. Calculated the polluter-pays emissions from final energy consumption	↘	13
Percentage of electricity derived from renewable energy sources		↗	7
Household waste per capita	Household waste per capita in Kilograms	↘	12

³² See at:

https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review_Eng.pdf

³³ See pages 53 to 62 for Indicators at:

https://s3.amazonaws.com/sustainabledevelopmentreport/2019/2019_sdg_index_euro_cities.pdf

³⁴ See pages 38 to 49 for Indicators:

<https://s3.amazonaws.com/sustainabledevelopmentreport/2019/2019USCiti esReport.pdf>

³⁵ See at:

<https://sdgs.un.org/sites/default/files/2020-10/Turku%20Voluntary%20Local%20Review%202020%20WEB%20EN.pdf>

³⁶ See at: [25023VLR_City_of_Mannheim_final.pdf](https://www.mannheim.de/fileadmin/user_upload/2020/01/25/25023VLR_City_of_Mannheim_final.pdf) (un.org)

MONITOR AND REPORT DISAGGREGATED DATA

Once indicators are developed, a monitoring exercise should be introduced to collect data. These data should then be reported by municipalities separately, as well as collectively through a coordinated effort by the MLG. Once municipalities collect data on the basis of the agreed indicators and send them to the MLG, the latter could publish them in a format of a joint report on the fulfilment of SDGs by Kosovo municipalities.

The format of the report, meaning the presentation of data by municipality or by theme, is something the Ministry and municipalities can jointly decide. In either case, it is necessary that the presented data are visualized. The Ministry could learn from good experiences such as the production of European Cities Report or the US Cities Report which presents data in a collective format, even though they present data across states.

Sample of key figures from Turku

Number of road traffic fatalities:

3 (2018)

Operating costs of social and health care services in total:

€3 373.0/resident (2018)

Turku residents' impressions of municipal services on a scale 1-5:

3.64 (2019)

Proportion of people engaging actively in exercise

24% (2018)

Prevalence index:

97.8
(2017)

Vaccination coverage:

97.3 %
(2017):



Also, if chosen so, municipalities can each develop the VLR. The production of VLRs, just like the case with VNR, are not binding. Most UN Member States report before the HLPF for VLR, but not all produce VNR. Although, there is a very small number of local authorities producing VLRs, it is in no way a reflection of their work on SDGs.

Apart from reporting on key indicators, it is important that other data are presented and visualized. As one can see in the right-hand side, some key data are given by the city of Turku on the fulfilment of SDG 3: Good Health and Well-being. Key figures are selected for reporting and visualized.

For this to take place, municipalities in cooperation with the central level government need to establish partnerships with relevant institutions and stakeholders. Some of the key institutions to this end are the Kosovo Agency of Statistics, National Audit Office, Ombudsperson Institution, Anti-Corruption Agency, civil society organizations, economic chambers, academia and more. The KAS currently covers some 50 indicators relevant to SDG implementation areas and has capacities to provide more data if appropriate indicators are developed. The NAO produces regular reports that contain data relevant to some SDGs. Establishing cooperation would result in NAO providing more information about SDG implementation. The same goes for other institutions in the areas they cover.

Municipalities could greatly benefit from establishing partnerships with other stakeholders such as economic chambers, academia and civil society organizations. They could all support the implementation of SDGs' and at the same time provide data on relevant SDGs.

VISUALIZE DATA

The final step for municipalities is to visualize data. As stated earlier, to get to the visualization stage, a number of carefully planned SDG localizing steps need to be taken in order to capture and report the appropriate data.

Municipalities may decide to adopt their own approaches to data visualization. One may choose to go ahead with simple Excel-based visualization, a software-based visualization or with more advanced interactive software that allows interested parties to navigate in respective municipal websites. The report already presented several best examples of data visualization, and a few more with some technical specificities from the municipalities in Belgium are given in the next couple of pages.

There are many technical solutions that could provide platforms for SDG data visualization. One may choose to present data in the format of infographics, diagrams, dashboards, and more. They may take the form of a simple text, Scatterplot, Table, Line, Heatmap, Slopegraph, vertical or horizontal bars and more.³⁷

Some of the latter formats are given here.

91%

Simple text



Scatterplot

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

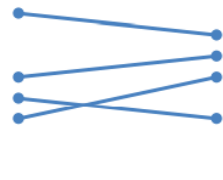
Table



Line

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

Heatmap

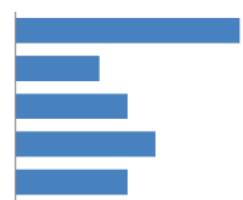


Slopegraph

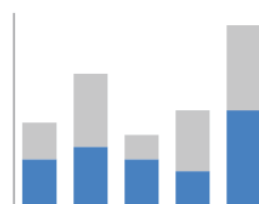
FIGURE 2.1 The visuals I use most



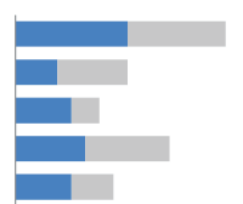
Vertical bar



Horizontal bar



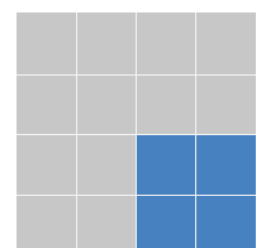
Stacked vertical bar



Stacked horizontal bar



Waterfall



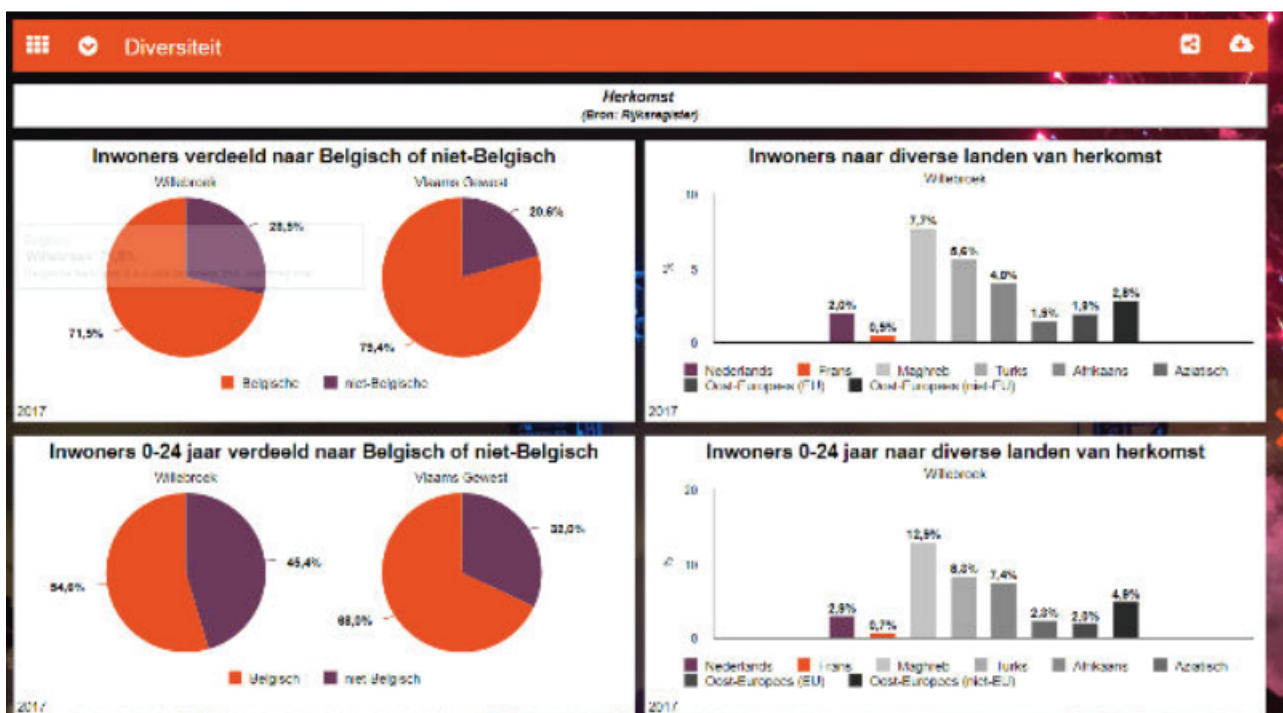
Square area

³⁷ Storytelling with data: a data visualization guide for business professionals. Cole, Nussbaumer, Knaflic, 2015

Below one can see a few examples from municipalities of Belgium on SDG data visualization from using simple options, such as Excel to more advanced software. The first example is from the municipality of Harelbeke (Belgium) which visualized data for SDGs 6 and 12 using Excel-based graphs and charts.

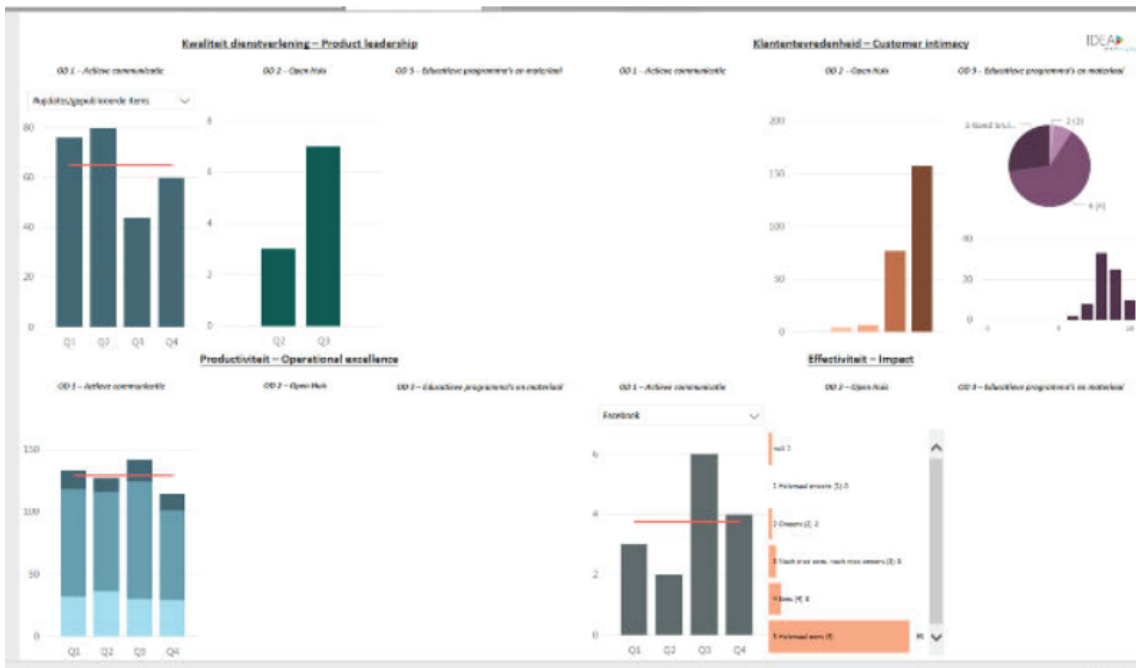


In the second example below, Municipality of Willebroek (also in Belgium) used the Swing Mosaic application to visualize SDG data. This application is very useful in particular for the production of reporting dashboards, which enables the congestion of more data into a single page to provide the reader with a general overview.³⁸

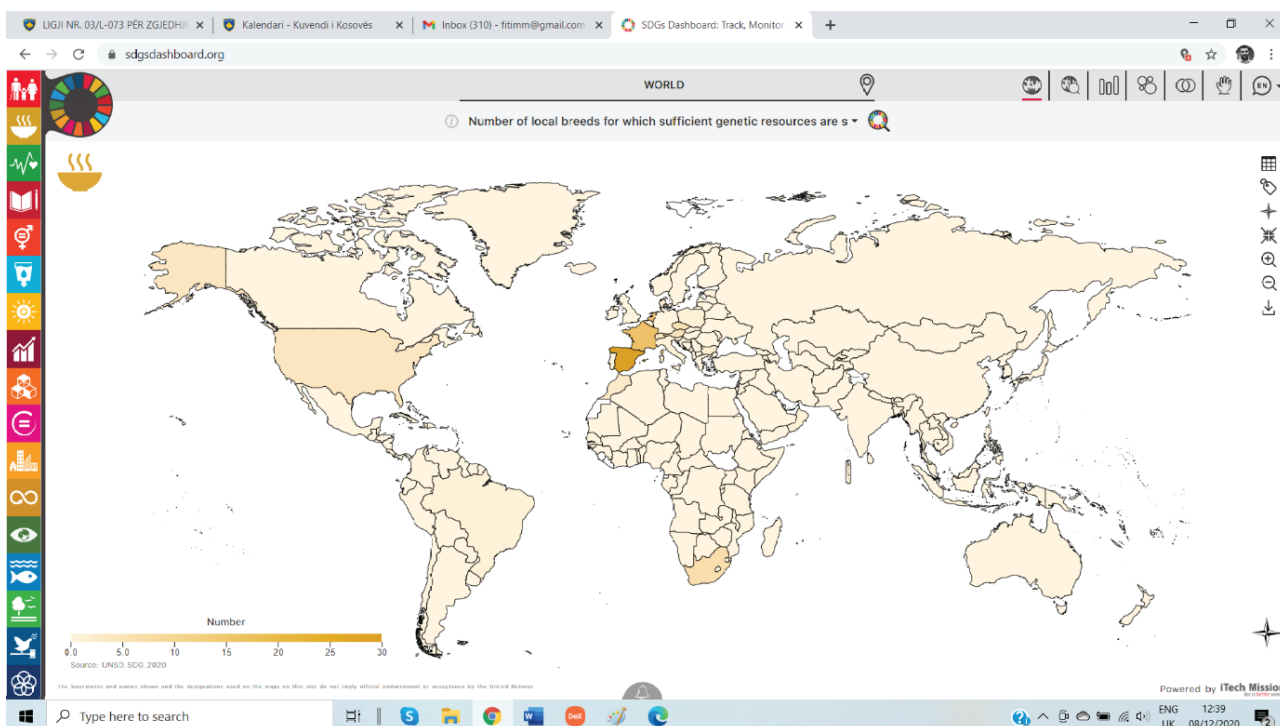


³⁸ For more see at Willebroek (organisatie) - Diversiteit - Willebroek (incijfers.be)

And the third example is based on a Microsoft Power BI which is a quick and simple way of data visualization.³⁹

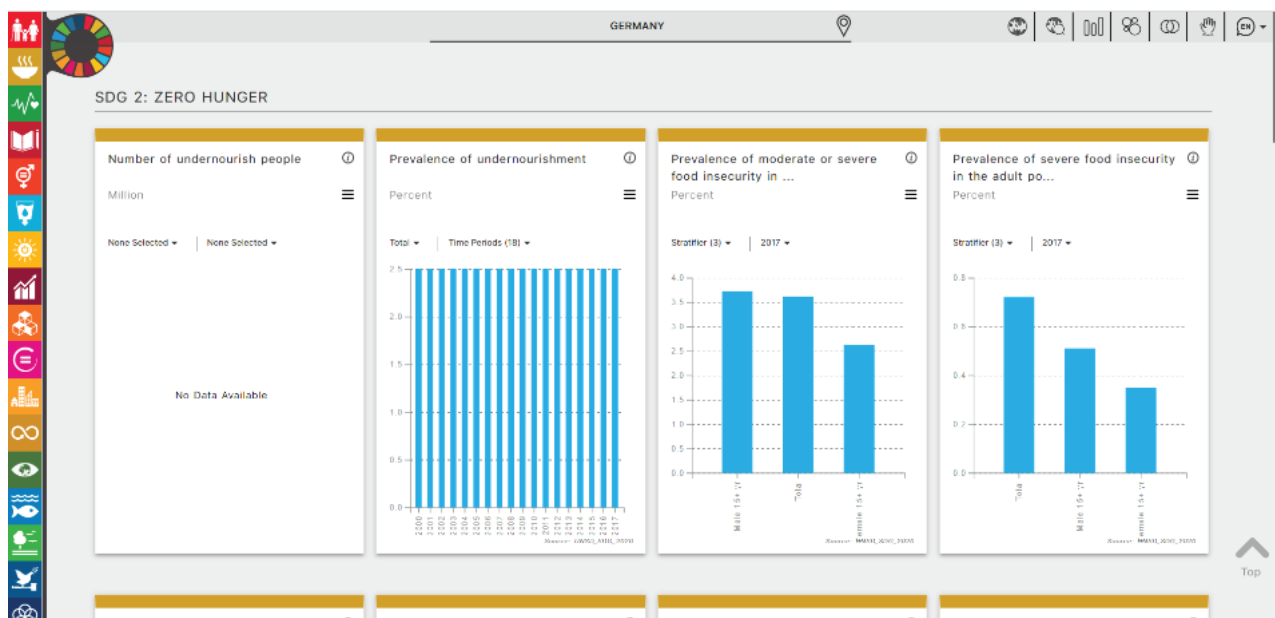
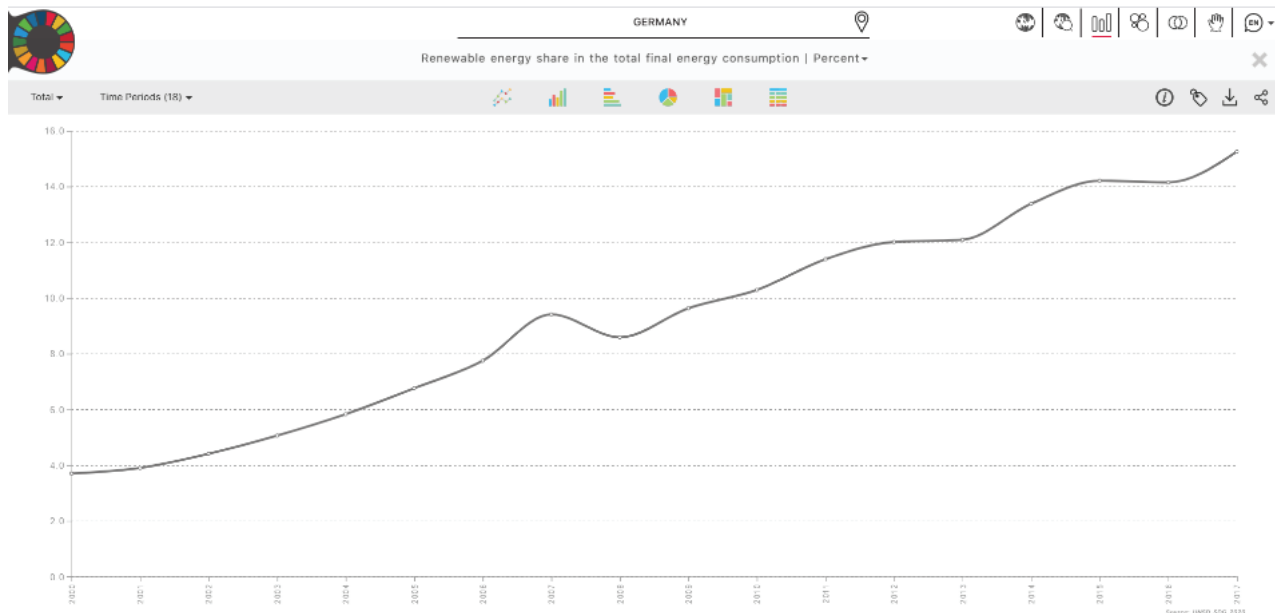


A perfect example of SDG data visualization can be found at <https://www.sdgdashboard.org>. It contains all reported data from countries around the world. This interactive platform provides data in various formats allowing for the users to access data on various categories.



³⁹ Local Indicators for the 2030 Agenda (Sustainable Development Goals), published by VVSG

As one can see, in the left-hand side, all 17 SDGs are presented in a visual form and by clicking in any of it the user gets the text of the relevant SDG and its targets. The user can have access to aggregated data or disaggregated data by country and SDGs in various visualized forms. The example to the left shows a graphic display of Germany's renewable energy share in the total final energy consumption through the years (SDG 7) and a bar chart display of some of the data related to the addressing of poverty (SDG 2). Data on progress towards the implementation of each SDG is available as fed by countries. It is perfectly disaggregated and visualized allowing for users easy access to plenty of data.



CONCLUSIONS

The paper provided a comprehensive account of the state of affairs with regard to SDG data visualization.

Initially, it presented the importance of data visualization for SDGs'. Then, the paper gave an assessment of the state of affairs of the municipalities of the Republic of Kosovo with regard to SDG implementation. In the following section, the paper presented research of best examples of implementation of SDGs' in developed countries, in particular approaches to enshrining SDGs' and their visualization. Finally, the paper presented specific steps that Kosovo municipalities need to undertake supported by best case examples. On the basis of the above, the paper resulted in several conclusions given below.

There is no evidence or data on the level of preparedness and capacities of the municipalities of the Republic of Kosovo to localize SDGs'. No baseline study or assessment was conducted so far to ascertain the state of affairs in each of municipalities. The state of a series of preconditions needs to be established such as the political will, readiness to develop new strategies and plans or revise existing ones to reflect SDGs', the level of knowledge and awareness of municipal officials about SDGs', human resources and technological capacities to implement and report on SDGs', and more.

The research and data collected from interviews and consultations revealed that there were very few awareness raising activities with regard to SDGs'. Those very few were conducted in selected municipalities and were implemented by a local think tank driven by foreign donations.

There was no awareness raising campaign initiated by central level institutions or by any municipality. The same goes for the training and education of municipal officials with only a few activities delivered by a local think tank to selected municipalities.

The paper found that municipalities have not localized SDGs' and consequently not enshrined or reflected them into their municipalities and policies. As seen from several case studies provided throughout the paper, SDGs' should be a constitutive part of key municipal documents starting from mission statements, to strategies and action plans. As evidenced, the process of enshrining SDGs' into local documents should be carefully planned and executed to take into account municipal priorities, citizen preferences and expectations and relevant SDGs'. Municipal policies and grants are not linked to SDG implementation and fulfilment. This could be easily applied and achieved with minor adjustments in municipal policy-making process.

As a derivative from the previous conclusion, there are no indicators designed since SDGs' are not enshrined into policy documents by municipalities. As stated earlier in the paper, some of the data collected by municipalities as part of the municipal performance system is relevant to SDGs' but for a meaningful and correct capture of SDG implementation, a new set of indicators needs to be developed and applied by municipalities. Indicators are a necessary mechanism that enables municipalities to capture progress or regress and collect relevant data. It should be added that no initiative was taken by the MLG as well to introduce SDGs' with municipalities.

Municipalities cannot collect and produce all data relevant for the implementation of SDGs' on their own. So far there is no cooperation between municipalities and relevant institutions on the topic of SDGs'. To this end, municipalities need to establish cooperation with key institutions such as the SAK, NAO, ACA, Ombudsperson and more to ensure the collection of relevant data for SDG implementation. Data from the 50 indicators collected so far by the SAK should be obtained and by advancing cooperation to cover all relevant indicators for SDGs. The year 2021 represents a good opportunity to get municipalities and the MLG to commit to SDGs' and develop indicators, which could then be included in the CMS in its scheduled review in 2022.

The state of affairs with regard to collection and visualization of SDG data is literally at ground

zero. Since municipalities have not taken steps to localize SDGs' consequently there is no data collected and visualized. Municipalities are familiar with collecting and reporting on data on the basis of indicators and moreover, visualizing them as evidenced in the Municipal Performance Reports. There is a system in place that is applied for the collection of data on municipal performance and the same electronic system can be used to report data by municipalities of the Republic of Kosovo.

Finally, since the municipalities have not committed to localizing SDGs' there is no cooperation whatsoever with stakeholders on this matter. The very character of the SDG to leave no one behind makes it an imperative for municipalities to cooperate closely and engage all stakeholders, including citizens as the ultimate beneficiaries.

CON CLUS IONS

RECOM MENDA TIONS

For a successful SDG data collection and visualization, the municipalities of the Republic of Kosovo need to follow the steps provided in the previous section. These steps are given below in the form of recommendations.

1. Conduct a Kosovo-wide baseline study necessary to ascertain the state of affairs in all municipalities of Kosovo. This would provide an account of the existing needs and problems and would pave the way for targeted solutions for SDG implementation.

2. Launch a promotional and awareness raising campaign. The campaign include visualization for purposes of information and awareness-raising of citizens as well as training sessions for municipal staff. An increase in public events such as conferences, workshops and more is encouraged to enhance SDG visibility.

3. Establish SDG clubs. This could be an effort of the Association of Municipalities of the Republic of Kosovo whereby municipalities would join to establish relevant clubs of interest and focus for SDGs.

4. Enshrine SDGs into municipal strategies and plans. Municipalities would review current strategies and policies or develop new ones to reflect SDGs. Municipalities should also link policies and grants with the fulfilment of SDGs'.

5. Introduce data collection mechanisms through the development of indicators. Under the guidance of the MLG, a set of indicators would be developed and applied across the board by all municipalities. Indicators would capture progress or regress in each of the SDGs and Targets.

6. Enhance cooperation with key institutions. Memorandums of Understandings should be concluded with Kosovo Agency of Statistics, National Audit Office, the Ombudsperson Institution, Anti-Corruption Agency, and other bodies for the purpose of data monitoring and collecting on SDG implementation.

7. Report and visualize the collected data. Municipalities could report and visualize data in a single document coordinated by the MLG. Ideally, municipalities would each develop VLRs and launch interactive, software-based, data visualization platforms.

8. Engage other stakeholders. Municipalities should make use of the available expertise and knowledge of civil society organizations, chambers of commerce and academia. Citizens should be involved as much as possible to ensure that no one is left behind.



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