

# MAPPING GEOSCIENCEWORLD SCHOLARLY LITERATURE TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS



**GeoScienceWorld**

The Earth's Best Science From One Single Source

January 2023

# What are the United Nation Sustainable Development Goals?

The [United Nation Sustainable Development Goals](#) (SDGs) are a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet.

The United Nations and supporting agencies recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection. Therefore, the SDGs provide are more important than ever, providing a critical framework for minimizing and mitigating the impacts of COVID-19, and providing a path for socio-economic recovery. Read more [here](#).



# Why are we doing it?

Laura Roberts, *Communications Lead at Geology for Global Development*, wrote:

“Close ties with the extractive industries, a lack of positive role models in the public domain, limited exposure to geology [and exposure to it as an applied science] in the school curriculum, a perception that a geoscientists work is routed in the unseen and uncertain, as well as declining student numbers are causing an increasingly poor public perception of Earth Sciences”

In recent years, there has been a significant number of important works published which demonstrate **qualitatively** the ways in which the earth and planetary sciences and various related subdisciplines (petroleum geosciences, geophysics, etc) support and advance each of the SDGs.

GSW undertook this project to try and **quantitatively** assess the impact of geoscience research on the United Nations Sustainable Development Goals.

Making these types of connections are important to educate the general public and the next generation of students, some of whom may pass up enrolling in the geosciences in favor of other sciences.



Capello, Maria A., Shaughnessy, A. and Caslin, E., (2021). "The Geophysical Sustainability Atlas: Mapping geophysics to the UN Sustainable Development Goals." *The Leading Edge* 40: 10–24.



# Methodology, Data and Results

# Leveraging SDG data from SciVal



- SciVal is a research performance analytics tool that reports on emerging trends and the impact of thousands of research institutions and associated researchers
- Publication and bibliographic data are extracted and aggregated primarily from content indexed by Scopus
- SDG tagging was originally developed in collaboration with The Times Higher Education University Rankings to track and demonstrate institutional research output and progress toward the SDG targets.
- SDG data only maps to 16 of the 17 SDGs due to complexity in defining and quantifying SDG 17 accurately
- SDG results only include publications that use search query keywords which are matched by machine learning (thus not perfect and can miss publications)
- SDG data only available for articles published from 2012 to present





# Total GSW articles evaluated

**38K**

Articles

from

**49**

Journals

**2012 -21**

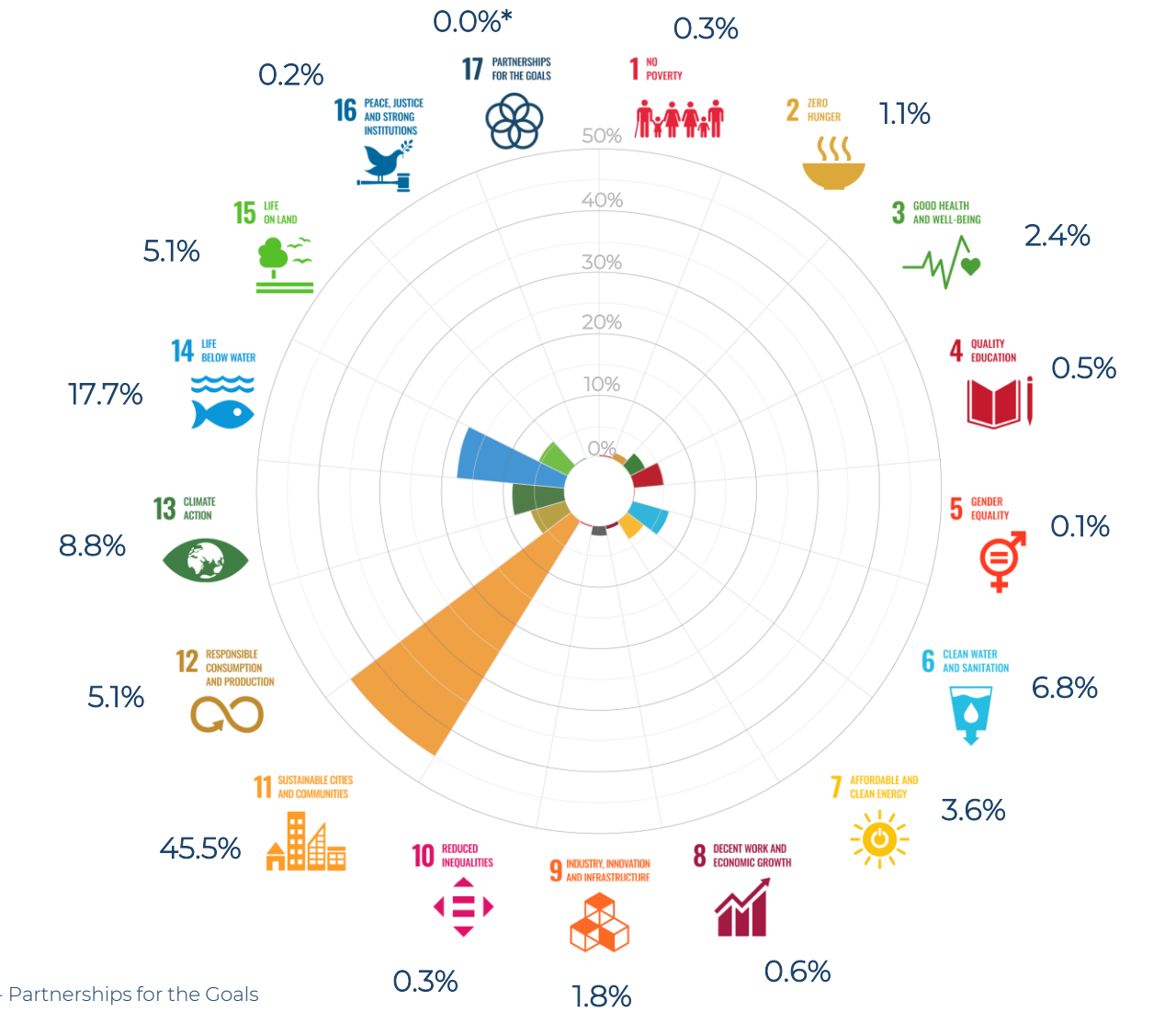
Published between

- 3 out of 53 journals could not be included in the final analysis as they are not indexed in Scopus, and thus, data is not available in SciVal. These include:
  - ❖ Bulletin of Canadian Geology
  - ❖ The Seismic Record
  - ❖ SEG Discovery
- GeoArabia results include articles published between 2012 - 2015 when the journal ceased publication



# GSW Corpus, Aggregated Results

22% of 38K articles mapped to 16 of the 17\* SDGs.

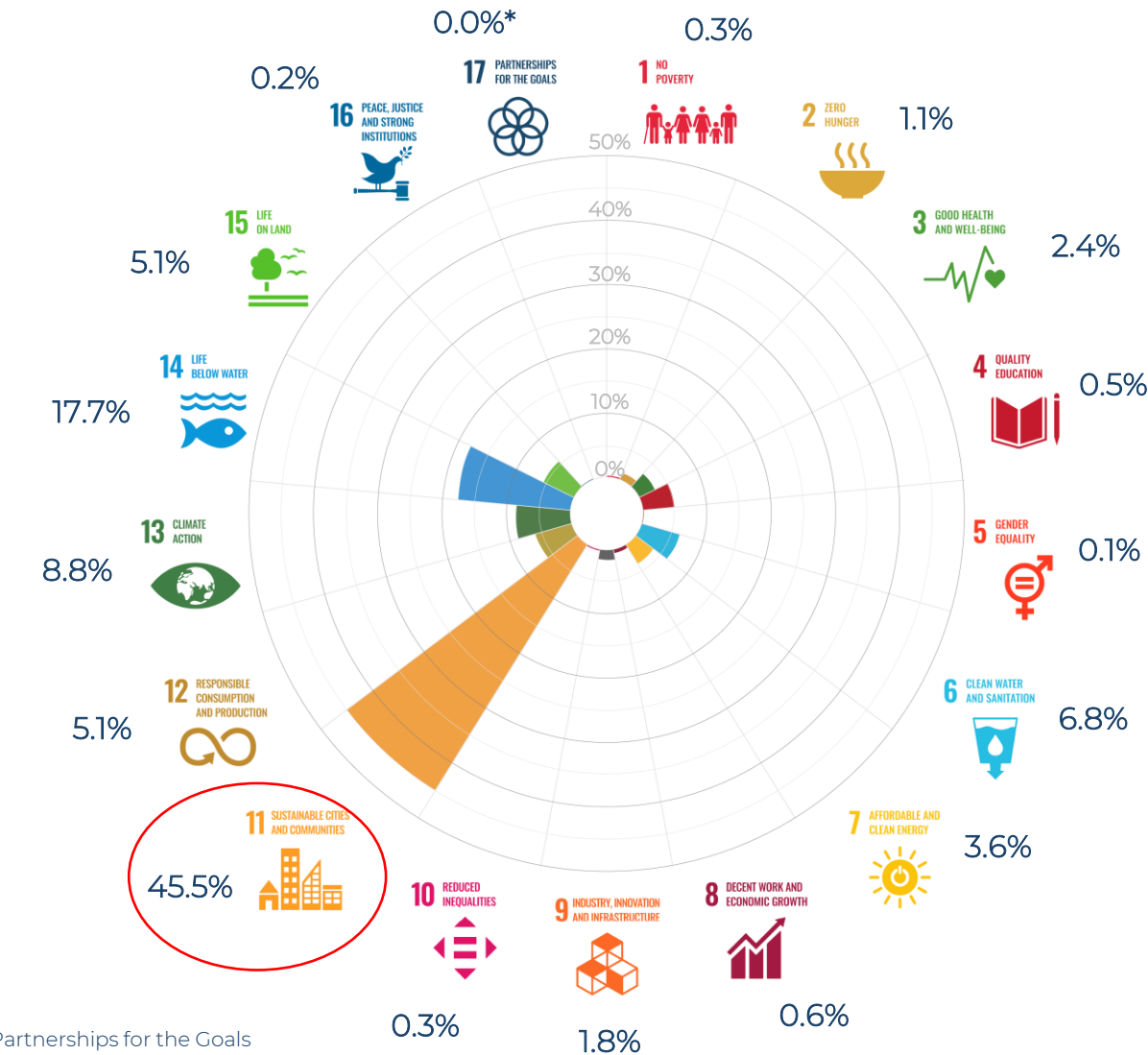


\* Note SciVI does not currently include data for SDG17 - Partnerships for the Goals



# GSW Corpus, Aggregated Results

46% mapped to SDG 11 – Sustainable Cities and Communities



\* Note SciVI does not currently include data for SDG17 - Partnerships for the Goals





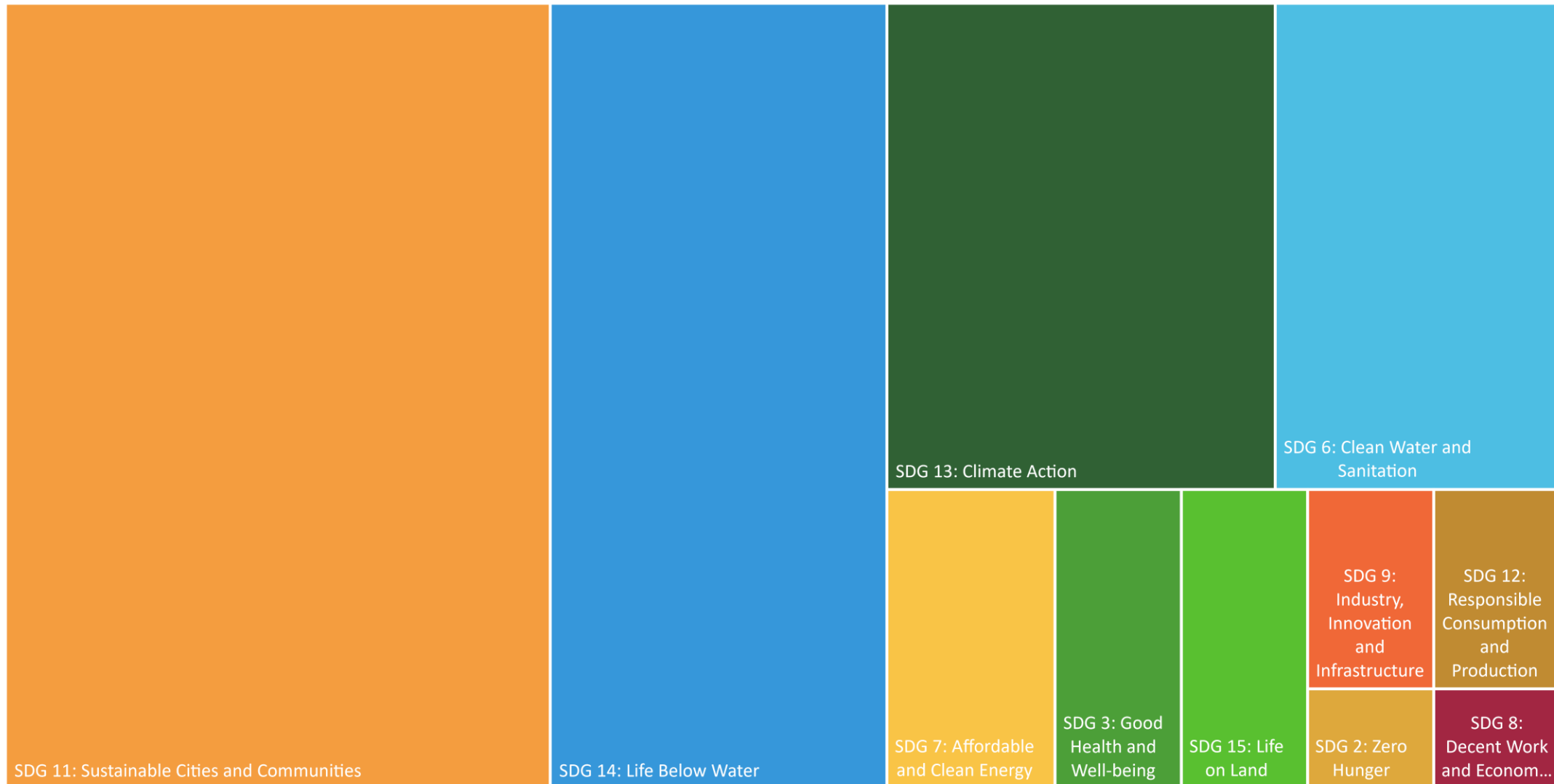
# Società Geologica Italiana

## Impact on the UN Sustainable Development Goals

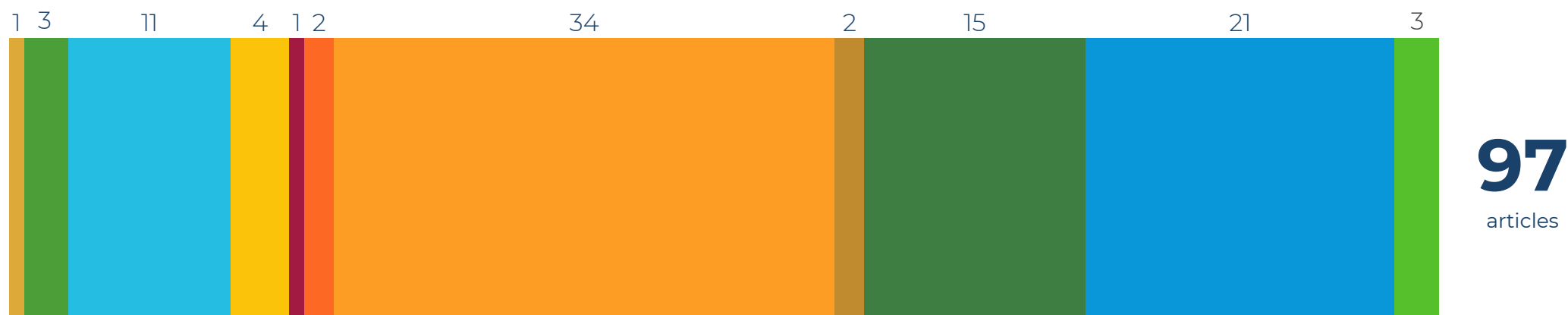
Total results for the 1 journal of the Società Geologica Italiana

- 337 Articles (2012 – 21)
- 97 SGI Articles or 29% mapped across 11 SDGs

# S&P Aggregated Impact on UN SDGs



# Italian Journal of Geosciences



# Appendix

SOCIETÀ GEOLOGICA ITALIANA  
Sustainability Development Goals Dataset

# SGI Journal SDG Data



UN Sustainable Development Goals	Italian Journal of Geosciences	SDG Totals	% Contribution
SDG 1: No Poverty	0	0	0.0%
SDG 2: Zero Hunger	1	1	1.0%
SDG 3: Good Health and Well-being	3	3	3.1%
SDG 4: Quality Education	0	0	0.0%
SDG 5: Gender Equality	0	0	0.0%
SDG 6: Clean Water and Sanitation	11	11	11.3%
SDG 7: Affordable and Clean Energy	4	4	4.1%
SDG 8: Decent Work and Economic Growth	1	1	1.0%
SDG 9: Industry, Innovation and Infrastructure	2	2	2.1%
SDG 10: Reduced Inequality	0	0	0.0%
SDG 11: Sustainable Cities and Communities	34	34	35.1%
SDG 12: Responsible Consumption and Production	2	2	2.1%
SDG 13: Climate Action	15	15	15.5%
SDG 14: Life Below Water	21	21	21.6%
SDG 15: Life on Land	3	3	3.1%
SDG 16: Peace, Justice and Strong Institutions	0	0	0.0%
SDG 17: Partnerships for the Goals	0	0	0.0%
	97	97	28.8%
SDG COUNT	11	11	
% contribution per journal to SDG	29%	29%	
Total # Articles 2012-21	337	337	

