



11 SUSTAINABLE CITIES AND COMMUNITIES



EDAI
EDUCATION AI



Safe and resilient cities and human settlements

Artificial Intelligence for Sustainable Cities & Communities

Data availability for SDG 11 is notably low, with only 35% of data available, posing challenges in assessing progress on the targets. Currently, only 1 out of the 10 targets (11.6 Urban air quality & waste management) is on track. This translates into 1.1 billion urban residents living in slums, with this number expected to rise to 2 billion in the next 30 years. As cities continue to expand globally, the significance of SDG 11 is growing, with an estimated five billion people expected to reside in cities by 2050, compared to 3.3 billion in 2014.

The relationship between AI and SDG 11 is well-documented, with numerous AI use cases: 17 use cases out of 40 in AI for Good: Innovate for Impact, and approximately 80 use cases out of 408 in the UN Activities on AI. This demonstrates the breadth of AI applications available to advance smart cities and align with a forward-looking vision.

Notably AI has the potential to enhance cities by promoting environmental sustainability through energy efficiency and space optimization, as well as by improving the overall livability and organization of urban areas through enhanced transportation systems. Furthermore, the adoption of AI in smart cities has shown promise in reducing inequalities compared to traditional cities. Additionally, AI can also be used to help in the design of cities and to drive urban planning.

AI can play a crucial role in city design and urban planning, providing urban planners with tools to expedite decision-making processes and prioritize citizen needs, ultimately leading to more inclusive and sustainable city development. Moreover, AI can contribute to enhancing city security by facilitating the monitoring of urban activities. One important aspect to consider is the need to build trust and transparency with citizens regarding the value of smart cities and the responsible use of data. For instance, one attempt to establish a smart city in Toronto failed due to a lack of public trust, highlighting the critical importance of citizen involvement in the development of smart cities.

It is also important to mitigate the potential risks associated with AI, such as the risk of conducting surveillance on specific communities, as identified in SDG 10. Additionally, within the context of SDG 11, the preservation of cultural and natural heritage (SDG 11.4) is paramount. There is a growing concern about the potential homogenization of the creative sector by AI, which could stifle creative diversity. **It is important to recognize the risk that a limited number of AI tools in arts and architecture may lead to a reduction in cultural diversity within the sector.**

Key Considerations for Stakeholders

- **Data privacy:** Insufficient trust in data sharing has the potential to diminish the effectiveness of smart cities. Governments need to establish robust privacy frameworks to prevent data over-sharing and mitigate associated concerns.
- **User-centric:** Align the development of AI solutions with the "Recommendation on the Ethics of Artificial Intelligence" from UNESCO to ensure that human dignity is maintained.

Impact

AI can act as an (positive) enabler for 100% of the SDG 11 targets and act as an inhibitor (negative) for 20% of the targets.

Use case 1

Developing smart cities that are less environmentally impactful, and more enjoyable for the urban population using AI and technologies.



Use case 2

Using an AI platform to help increase the security of cities by monitoring and flagging any risks for the citizens.



Use case 3

Developing cities plan and urban solutions using AI to improve the development process and connect it to the needs of the citizens.



SDG 11: Sustainable cities and communities



Make cities and human settlements inclusive, safe, resilient and sustainable



FACTS AND FIGURES

- While the proportion of urban population living in slums declined slightly, **from 25.4% to 24.2% between 2014 and 2020**, the total number of slum dwellers continues to rise with increasing urbanization. As of 2020, nearly **1.1 billion people** lived in slums or slum-like conditions in urban areas, with an **additional 2 billion** expected to live in slums or slum-like conditions over next 30 years.
- Today, **85%** of slum dwellers are concentrated in three regions: Central and Southern Asia (**359 million**), Eastern and South-Eastern Asia (**306 million**) and sub-Saharan Africa (**230 million**).
- Data from 2022 reveal that only **51.6%** of the global urban population has convenient access to public transport, with considerable regional differences.
- In the developing world, an estimated **1 billion** people still lack access to all-weather roads.
- Global cities expanded physically faster than their population growth rates, with average annual land consumption rates of **2.0%** compared to population growth rates of **1.6%** from 2000 to 2010, and **1.5%** compared to **1.2%** respectively from 2010 to 2020, according to data from **681** cities between 1990 and 2020.
- Globally, **air quality** is improving, largely due to advancements in high-income countries. Although cities have traditionally been the focus of air pollution reduction policies, air quality in towns and rural areas should also be considered. In 2019, towns in **Eastern and South-Eastern Asia**, a region with a significant proportion of the world's population, experienced poorer air quality than cities.
- In 2020, data from **1,072** cities in **120** countries indicate that more than **75%** of these cities have **less than 20%** of their area dedicated to open public spaces and streets, about half of the proportion recommended. On average, open public spaces account for a meagre **3.2%** of urban land, about **4 times less** than the share of land in streets.
- The number of countries with national disaster risk reduction strategies has increased from 55 in 2015 to **126** by the end of 2022. By the end of 2022, **102** countries reported having local governments with disaster risk reduction strategies, an increase from 51 countries in 2015.

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WHERE WE STAND

- Over half (**55%**) living in urban areas, a figure projected to rise to **70%** by 2050. Most of the urban growth is taking place in **small cities and intermediate towns**, exacerbating inequalities and urban poverty. Moreover, **climate change and conflicts** disproportionately affect cities, hindering progress of achieving the goal of sustainable cities.
- In many developing countries, **slum populations** have been growing, putting at risk the target of adequate housing for all by 2030.
- In 2022, only **half** of the world's urban population had convenient access to public transportation. **Urban sprawl, air pollution and limited open public spaces** persist in cities.
- Since 2015, the number of countries with **national and local disaster risk reduction strategies** has **more than doubled**.

Global Youth AI Advisory Body



Delhi School of Artificial Intelligence

