



# Science in the City

Building Participatory Urban Learning Community Hubs  
through Research and Activation



This project has received funding from the European Union's  
Horizon 2020 research and innovation programme under grant  
agreement No 824466



# INDUSTRY, INNOVATION AND INFRASTRUCTURE: WHY IT MATTERS

**3.8 billion  
people**  
do not have  
access to the  
**internet**  
representing  
**80 per cent**  
of the  
population  
in the  
least developed  
**countries**



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# 9 INDUSTRIES, INNOVATION AND INFRASTRUCTURE



Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries. It has long been recognized that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure

Manufacturing is an important driver of economic development and employment. At the current time, however, manufacturing value added per capita is only US\$100 in the least developed countries compared to over US\$4,500 in Europe and Northern America. Another important factor to consider is the emission of Carbon Dioxide during manufacturing processes. Emissions have decreased over the past decade in many countries but the pace of decline has not been even around the world.



# 9 INDUSTRIES, INNOVATION AND INFRASTRUCTURE



Technological progress is the foundation of efforts to achieve environmental objectives, such as increased resource and energy-efficiency. Without technology and innovation, industrialization will not happen, and without industrialization, development will not happen. There needs to be more investments in high-tech products that dominate the manufacturing productions to increase efficiency and a focus on mobile cellular services that increase connections between people.



## What's the goal here?

To build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

## Why?

Economic growth, social development and climate action are heavily dependent on investments in infrastructure, sustainable industrial development and technological progress. In the face of a rapidly changing global economic landscape and increasing inequalities, sustained growth must include industrialization that first of all, makes opportunities accessible to all people, and two, is supported by innovation and resilient infrastructure.



## So what's the problem?

Basic infrastructure like roads, information and communication technologies, sanitation, electrical power and water remains scarce in many developing countries. An estimated 3.8 billion people still do not have access to the Internet, representing 80% of the population in the least developed countries. 3 billion people worldwide lack access to basic sanitation and 3 in 10 people lack access to safely managed drinking water

## How much progress have we made?

The growth of manufacturing in both developing and developed regions slowed in 2018, attributed largely to emerging trade and tariff barriers that constrain investment and future expansion. The disparities in industrial productivity between rich and poor nations also remain stark.





## Why should I care?

Inclusive and sustainable industrialization, together with innovation and infrastructure, can unleash dynamic and competitive economic forces that generate employment and income. They play a key role in introducing and promoting new technologies, facilitating international trade and enabling the efficient use of resources. The growth of new industries means improvement in the standard of living for many of us. Also, if industries pursue sustainability, this approach will have a positive effect on the environment. Climate change affects all us.

## What is the price of inaction?

The price is steep. Ending poverty would be more difficult, given the industry's role as a core driver of the global development agenda to eradicate poverty and advance sustainable development. Additionally, failing to improve infrastructure and promote technological innovation could translate into poor health care, inadequate sanitation and limited access to education.



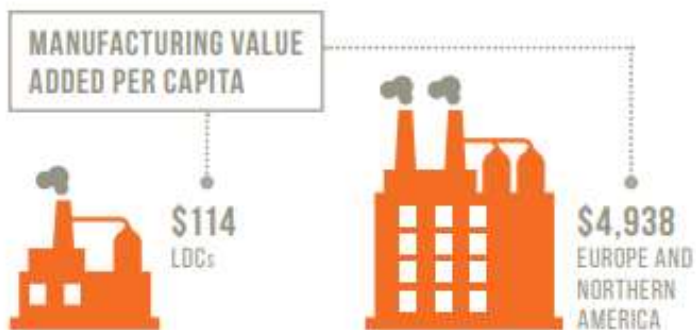
## How can we help?

Establish standards and promote regulations that ensure company projects and initiatives are sustainably managed. Collaborate with NGOs and the public sector to help promote sustainable growth within developing countries. Think about how industry impacts on your life and well-being and use social media to push for policymakers to prioritize the SDGs





# INDUSTRIALIZATION — IN LDCs — IS TOO SLOW TO MEET THE 2030 AGENDA TARGET



**GLOBAL INVESTMENT  
IN RESEARCH AND  
DEVELOPMENT IS  
\$2 TRILLION  
[2016]. UP FROM  
\$739 BILLION  
[2000]**



## MEDIUM-HIGH AND HIGH-TECH SECTORS

ACCOUNT FOR 45% OF THE GLOBAL MANUFACTURING VALUE ADDED (2016), BUT THE SHARE IS ONLY 15% IN SUB-SAHARAN AFRICA



GLOBAL



SUB-SAHARAN AFRICA

# 90%

OF PEOPLE LIVE WITHIN RANGE OF A 3G OR HIGHER QUALITY MOBILE NETWORK (2018).

**BUT NOT ALL CAN AFFORD TO USE IT**



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## Facts & Figures

- Basic infrastructure like roads, information and communication technologies, sanitation, electrical power and water remains scarce in many developing countries
- 16% of the global population does not have access to mobile broadband networks.
- For many African countries, particularly the lower-income countries, the existent constraints regarding infrastructure affect firm productivity by around 40 per cent.
- The global share of manufacturing value added in GDP increased from 15.2% in 2005 to 16.3% in 2017, driven by the fast growth of manufacturing in Asia.
- Industrialization's job multiplication effect has a positive impact on society. Every job in manufacturing creates 2.2 jobs in other sectors.



## Facts & Figures

- Small and medium-sized enterprises that engage in industrial processing and manufacturing are the most critical for the early stages of industrialization and are typically the largest job creators. They make up over 90 per cent of business worldwide and account for between 50-60 per cent of employment.
- Least developed countries have immense potential for industrialization in food and beverages (agro-industry), and textiles and garments, with good prospects for sustained employment generation and higher productivity
- Middle-income countries can benefit from entering the basic and fabricated metals industries, which offer a range of products facing rapidly growing international demand
- In developing countries, barely 30 per cent of agricultural production undergoes industrial processing. In high-income countries, 98 per cent is processed. This suggests that there are great opportunities for developing countries in agribusiness.



## Goal 9 Targets

**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

**9.2** Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

**9.3** Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

**9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities



## Goal 9 Targets

**9.5** Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

**9.A** Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States 18

**9.B** Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

**9.C** Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020





## Links

- [SG's Strategy on New Technologies](#)
- [UN Development Programme](#)
- [UN Environment Programme](#)
- [UN Habitat](#)
- [UN Office for Disaster Risk Reduction](#)
- [UN Industrial Development Organization](#)
- [International Telecommunication Union](#)
- [UN Office for Project Services](#)
- [International Civil Aviation Organization](#)





To find out more about Goal #9 and the other Sustainable Development Goals, visit:

<http://www.un.org/sustainabledevelopment>



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