

9 INDUSTRY, 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.”

- UN



8

Development targets



12

Development indicators



90

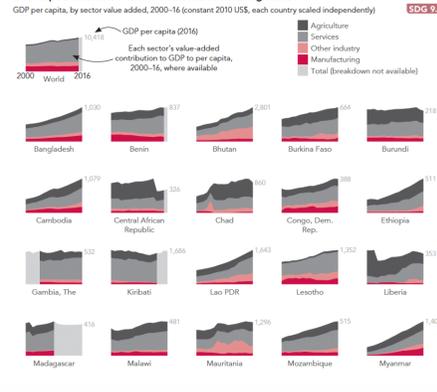
Possible corporate indicators identified

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



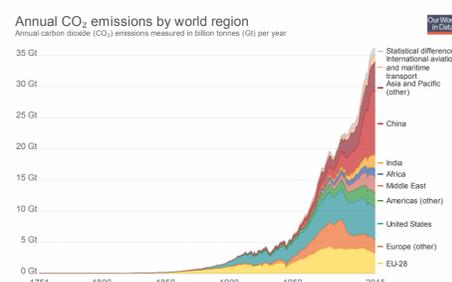
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

Manufacturing and other industry is a large source of employment. But many Least Developed Countries have a small manufacturing sector.



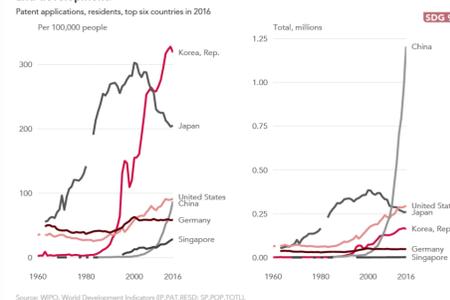
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

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



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

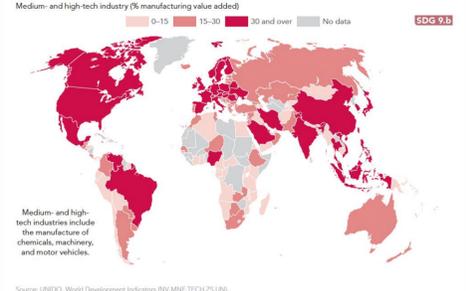
Patents are designed to encourage innovation by providing incentives for research and development.



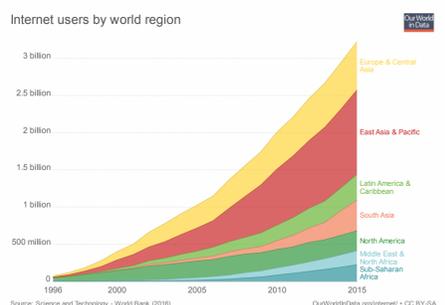
9.A Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

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

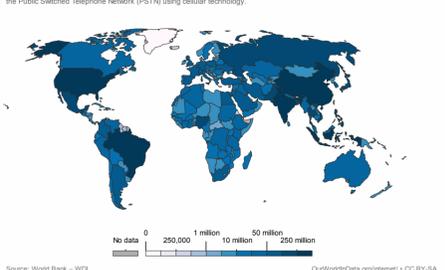
Medium- and high-tech industry allows for greater diversification and offers better opportunities for skills development and innovation.



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



Mobile cellular subscriptions by country, 2015



Example of best practice: NCC

Company information

- One of the leading construction and property development companies in the Nordic region
- NCC's geographic markets mainly comprise Sweden, Norway, Denmark and Finland
- 17,800 employees

Challenges

- Socially, economically and ecologically sustainable societies that are suitable to everyone
- Sustainable and inclusive housing solutions
- Traffic in the cities

Solutions

- Provide superior sustainable solutions to the customers and the society
- All of NCC's housing products are designed for the Nordic Ecolabel
- For example, NCC DrænStabil® is a stone-material product that ensures that water quickly and readily penetrates the soil, while the stone material functions as bearing structure



Build resilient infrastructure, promote sustainable industrialization and foster innovation

The UN explains: 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.

-UN SDG Tracker

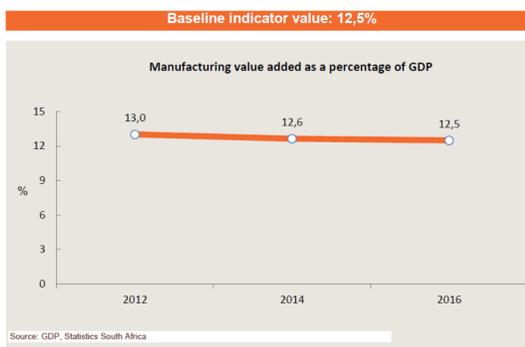
Overview:

Available data for South Africa as disclosed in the StatsSA SDG Indicator Baseline Report 2017

- Yes
- No
- Innovation is required to identify avenues for impact
- ★ Further detail and data provided

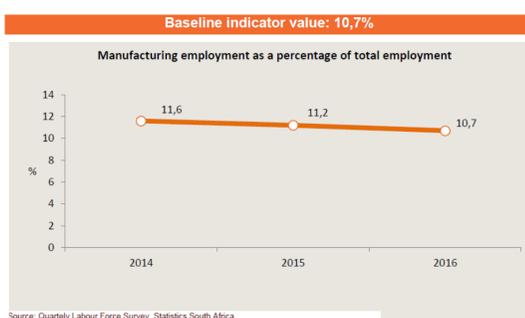
Targets	Indicators	National data available	Impact through direct investment?
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road		
	9.1.2 Passenger and freight volumes, by mode of transport		
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	9.2.1 Manufacturing value added as a proportion of GDP and per capita		
	9.2.2 Manufacturing employment as a proportion of total employment		
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	9.3.1 Proportion of small-scale industries in total industry value added		
	9.3.2 Proportion of small-scale industries with a loan or line of credit		
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	9.4.1 CO ₂ emission per unit of value added		
	9.4.2 Research and development expenditure as a proportion of GDP		
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	9.5.1 Researchers (in full-time equivalent) per million inhabitants		
	9.5.2 Researchers (in full-time equivalent) per million inhabitants		
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	9.a.1 Total official international support (official development assistance plus other official flows) to infrastructure		
	9.a.1 Proportion of medium and high-tech industry value added in total value added		
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.b.1 Proportion of medium and high-tech industry value added in total value added		
	9.c.1 Proportion of population covered by a mobile network, by technology		
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	9.c.1 Proportion of population covered by a mobile network, by technology		

Indicator definition and method of computation (MoC)
DEFINITION: Manufacturing value added (MVA) is the total value of goods and services net of intermediate consumption. It is generally compiled as the sum of the value added of all manufacturing activity units in operation in the reference period. It can be presented in percentage to gross domestic product (GDP) as well as per capita for any reference year. MVA growth rates are given at constant prices.
MoC: Manufacturing value added divided by GDP multiplied by 100.
 $MVA \text{ per GDP} = MVA/GDP \times 100$
 $\text{Manufacturing value added divided by population multiplied by 100.}$
 $MVA \text{ per capita} = MVA/population \times 100$



National KPIs used based on data available:
 9.2.2: Manufacturing employment as a percentage of total employment

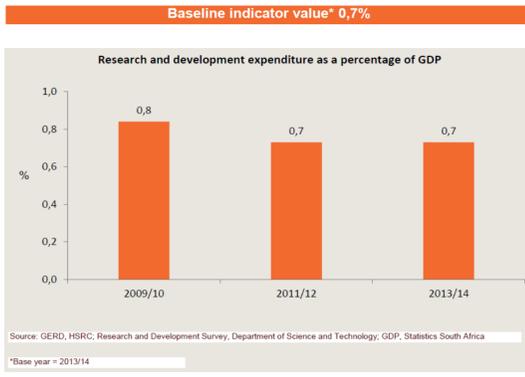
Indicator definition and method of computation (MoC)
DEFINITION: This indicator is computed as the number of persons employed in the industry sector divided by total employment. Employed persons are defined as all those of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. The industry sector comprises mining and quarrying, manufacturing, construction and public utilities (electricity, gas and water).
MoC: Number of persons employed in the manufacturing industry divided by the total number of employed persons multiplied by 100.



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

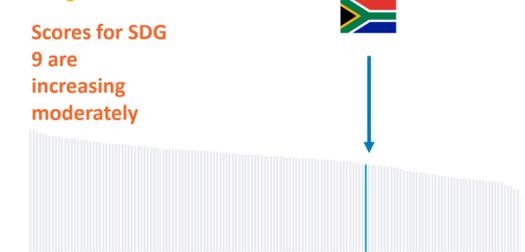
National KPIs used based on data available:
 9.5.1: Research and development expenditure as a percentage of GDP compared to 9.5.1A: Business expenditure on R&D (BERD) as a percentage of gross domestic expenditure on R&D (GERD)

Indicator definition and method of computation (MoC)
DEFINITION: This indicator presents gross expenditure on research and development (GERD) as a percentage of GDP.
 GERD covers all expenditures for R&D performed on national territory in a given year. It thus includes domestically performed R&D which is financed from abroad but excludes R&D funds paid abroad, notably to international agencies.
MoC: GERD divided by gross domestic product multiplied by 100.



Analysis of South Africa's progress on SDG 9 as per the SDG Index & Dashboards Report 2018:

107/150
 SA's global rating on SDGs in general:

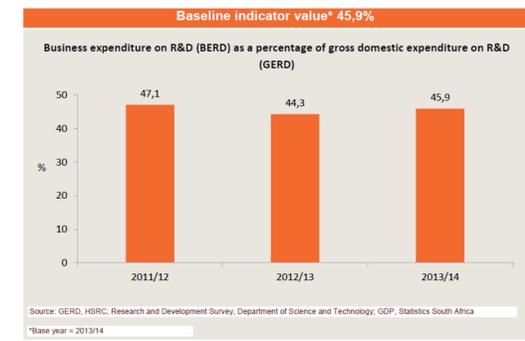


SDG9 – Industry, Innovation and Infrastructure

Indicator	Value	Rating	Trend
Proportion of the population using the internet (%)	54.0	●	↑
Mobile broadband subscriptions (per 100 inhabitants)	56.3	●	↑
Quality of overall infrastructure (1= extremely underdeveloped; 7= extensive and efficient by international standards)	4.1	●	↓
Logistics performance index: Quality of trade and transport-related infrastructure (1=low to 5=high)	3.8	●	●
The Times Higher Education Universities Ranking, Average score of top 3 universities (0-100)	47.4	●	●
Number of scientific and technical journal articles (per 1,000 population)	0.2	●	●
Research and development expenditure (% GDP)	0.7	●	●

Decreasing: Decreasing score, i.e. country is moving in the wrong direction
 Stagnating: Score remains stagnant or is increasing at a rate below 50% of the required growth rate below the rate needed to achieve the SDG by 2030
 Moderately Increasing: Score is increasing at a rate above 50% of the required growth rate but below the rate needed to achieve the SDG by 2030
 On track: Score is increasing at the rate needed to achieve the SDG by 2030
 Maintaining SDG achievement: Score is level and trend remains at or above SDG achievement

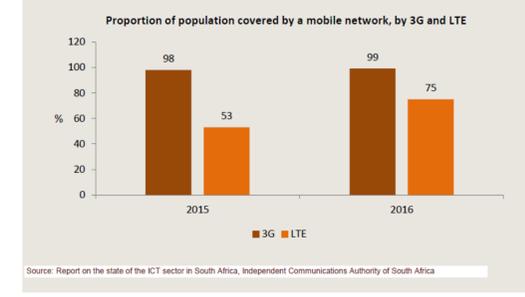
Indicator definition and method of computation (MoC)
DEFINITION: Business sector research and development expenditure is defined as R&D expenditure by the business sector.
MoC: BERD / GERD x 100.



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

National KPIs used based on data available:
 9.c.1D: Percentage of population covered by a mobile network, by 3G and LTE

Indicator definition and method of computation (MoC)
DEFINITION: The indicator percentage of the population covered by a mobile network, broken down by technology, refers to the percentage of inhabitants living within range of a mobile-cellular signal, irrespective of whether or not they are mobile phone subscribers or users.
 The indicator is based on where the population lives, and not where they work or go to school, etc. When there are multiple operators offering the service, the maximum population number covered should be reported. Coverage should refer to broadband (3G and more) and narrowband (2G) mobile-cellular technologies.
MoC: The number of inhabitants within range of a mobile-cellular signal divided by the total population multiplied by 100.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



8 Development targets

12 Indicators

South Africa can report on 50% of indicators

90 Possible corporate indicators identified

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

National KPIs used based on data available:
 9.2.1: Manufacturing value added as a percentage of GDP and per capita