

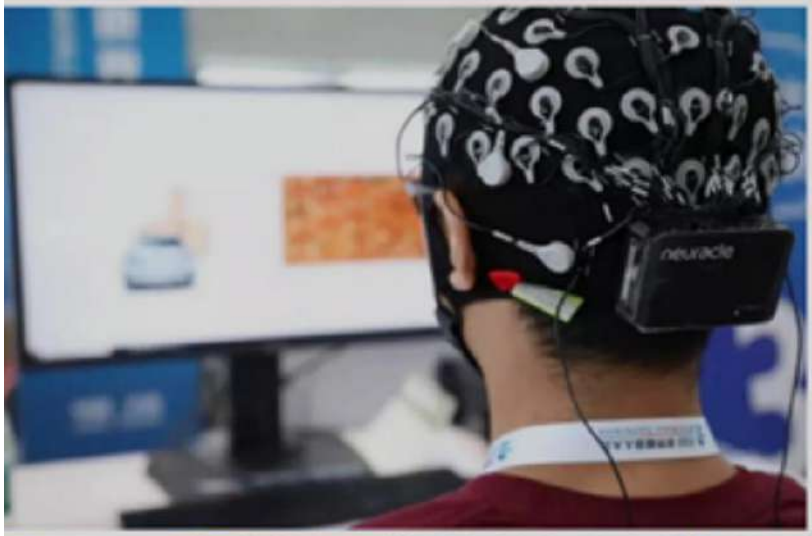




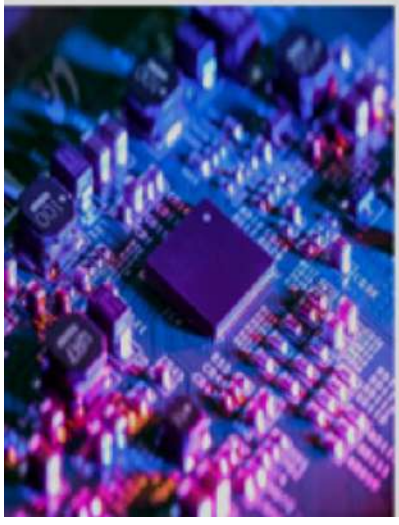
The Republic of Cameroon

STI Profile of the OIC Member State

Science, Technology and Innovation Indicators







COMSTECH

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FOREWORD

It gives me great pleasure to share the *Science, Technology and Innovation Profiles of OIC Member States,* as prepared by COMSTECH. These profiles of member states are being printed, as well as shared on the COMSTECH website. A few words are therefore presented to explain the wider aims and purposes of this exercise.

The member countries of the OIC are vigorously engaged with science, technology and innovation, both as a pursuit of knowledge and in harnessing the forces of nature for human betterment. Depending on their circumstances they have advanced to different levels, but much needs to be done, in general, to catch up with the attainments of the more advanced countries. However, there exists a well-defined need to catalogue national efforts in this direction. In particular, to identify respective strengths, achievements and shortcomings, as well as the institutions and policies that are shaping the scientific research and development profiles of OIC member states.

It is with the above goals and purposes that COMSTECH has ventured on this ambitious task viz. preparing a summarized version of the science, technology and innovation landscape of each member state. We have initiated this effort starting with the profiles of countries leading in this area, and will be continuing and sharing as we proceed onwards.

Undoubtedly much more could be said about each country than the summary that we have presented, but our emphasis is on the essentials and on maintaining brevity. COMSTECH welcomes feedback from member states on this effort and will be happy to update the website profiles on the basis of information received officially.

I hope that the scientific community as well as the planners and administrators of member states will find these profiles both useful and inspiring.

Prof. Dr. M. Iqbal Choudhary
Coordinator General COMSTECH
UNESCO Chair

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Following is the list of topics covered in the STI profiles of OIC Member States. All sub-sections/topics may not appear for every country due to unavailability of some data.

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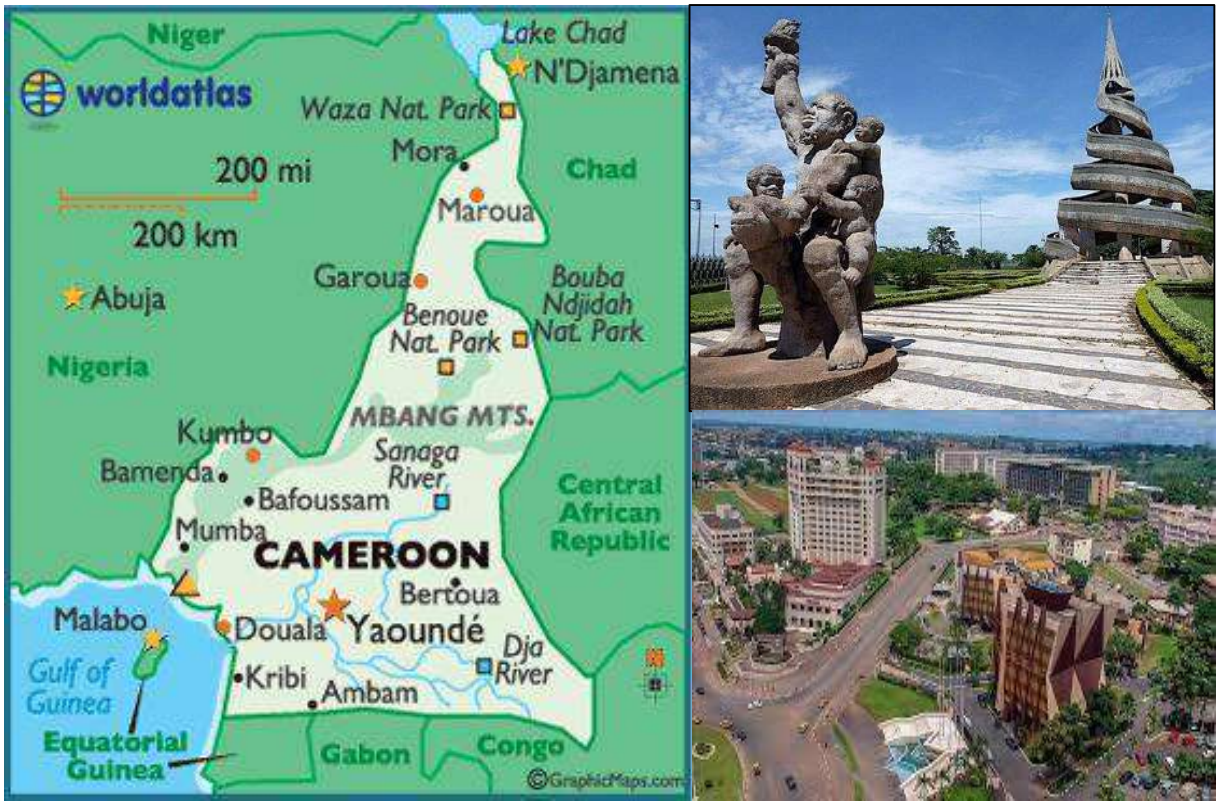
CAMEROON

Officially, the Republic of Cameroon, is a country in west-central Africa. It is bordered by Nigeria to the west and north, Chad to the northeast, the Central African Republic to the east, and Equatorial Guinea, Gabon and the Republic of the Congo to the south. Its coastline lies on the Bight of Biafra, part of the Gulf of Guinea and the Atlantic Ocean. Due to its strategic position at the crossroads between West Africa and Central Africa, it has been categorized as being in both camps. Its nearly 27 million people speak 250 native languages.



Early inhabitants of the territory included the Sao civilisation around Lake Chad, and the Baka hunter-gatherers in the southeastern rainforest. Portuguese explorers reached the coast in the 15th century and named the area Rio dos Camarões (Shrimp River), which became Cameroon in English. In the 19th century various ethnic groups of the west and northwest established powerful chiefdoms and fiefdoms. Cameroon became a German colony in 1884 known as Kamerun. After World War I, it was divided between France and the United Kingdom as League of Nations mandates. The national liberation insurgency was fought between French and native militant forces until early 1971. In 1960, the French-administered part of Cameroon became independent, as the

Republic of Cameroun. The southern part of British Cameroons federated with it in 1961 to form the Federal Republic of Cameroon. The country was renamed the Republic of Cameroon in 1984 by a presidential decree. Cameroon is governed as a Unitary Presidential Republic.

The official languages of Cameroon are French and English, the official languages of former French Cameroons and British Cameroons. Its religious population is predominantly Christian, with a significant minority practicing Islam, and others following traditional faiths.

Large numbers of Cameroonians live as subsistence farmers. Its natural features include beaches, deserts, mountains, rainforests, and savannas. Its highest point, at almost 4,100 metres (13,500 ft), is Mount Cameroon in the Southwest Region. Its most populous cities are Douala on the Wouri River, its economic capital and main seaport; Yaoundé, its political capital; and Garoua. Limbe in the Southwest has a natural seaport. It is a member state of the African Union, the United Nations, the Organisation Internationale de la Francophonie (OIF), the Commonwealth of Nations, Non-Aligned Movement and the Organisation of Islamic Cooperation.

At 475,442 square kilometres (183,569 sq mi), Cameroon is the world's 53rd-largest country. Cameroon is divided into five major geographic zones distinguished by dominant physical, climatic, and vegetative features. The coastal plain, the South Cameroon Plateau, an irregular chain of mountains, hills, and plateaus known as the Cameroon range, the southern plateau, and the northern lowland region.

Cameroon is a lower-middle-income country endowed with rich natural resources, including oil and gas, mineral ores, high-value species of timber, and agricultural products, such as coffee, cotton, and cocoa. Its main agricultural products are timber, coffee, tea, bananas, cocoa, rubber, palm oil, pineapples, cotton. On the industrial side it engages in petroleum production and refining, aluminum production, food processing, light consumer goods, textiles, lumber and ship repair.

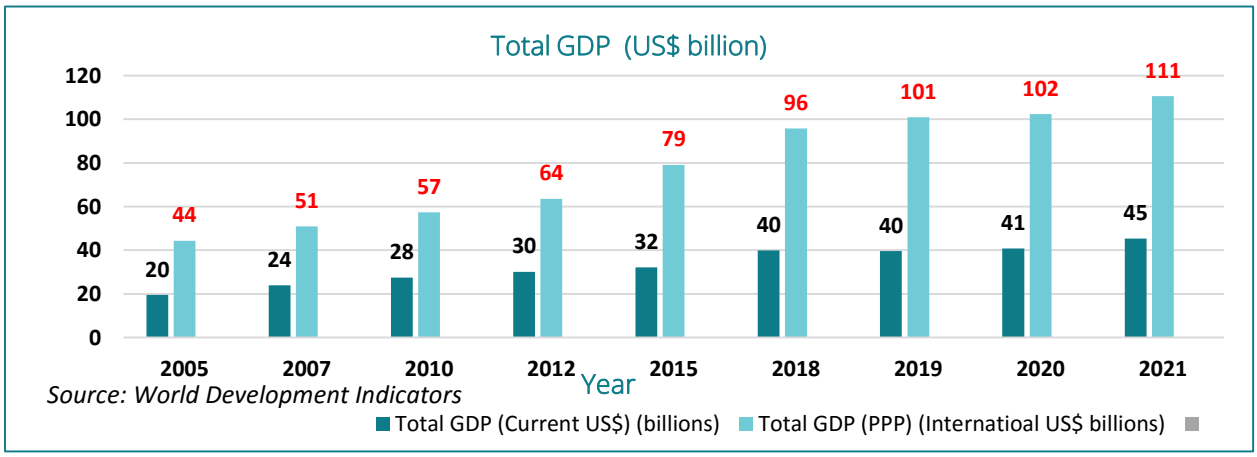
Its main exports are crude oil and petroleum products, lumber, cocoa beans, aluminum, coffee, and cotton.

Source: https://en.wikipedia.org/wiki/Cameroon

A. ECONOMIC OVERVIEW

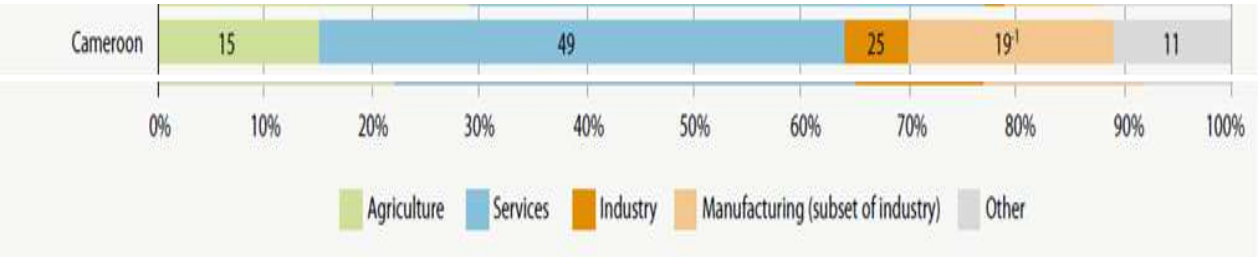
❖ Cameroon GDP

Cameroon's per capita GDP in current US$ was estimated in 2021 to be US$1,667. During the 2004–2008 period, public debt was reduced from over 60% of GDP to 10% and official reserves quadrupled to over US$3 billion. Its currency is the CFA franc.



Between 2010 and 2021 Cameroon's GDP has grown from US$28Billion to US$111 Billion (in current US$) displaying an average annual increase of about 5.5%. An estimated 70% of the population farms, and agriculture comprised an estimated 16.7% of GDP in 2017. Most agriculture is done at the subsistence scale by local farmers using simple tools. Cash crops include coffee, sugar, and tobacco. In the north, natural conditions favour crops such as cotton, groundnuts, and rice. Since 1990, Cameroon's forest sector has increased its logging activities, which now contributes around 6% of its GDP. As a result, Cameroon has become the leading exporter of timber products in Africa.

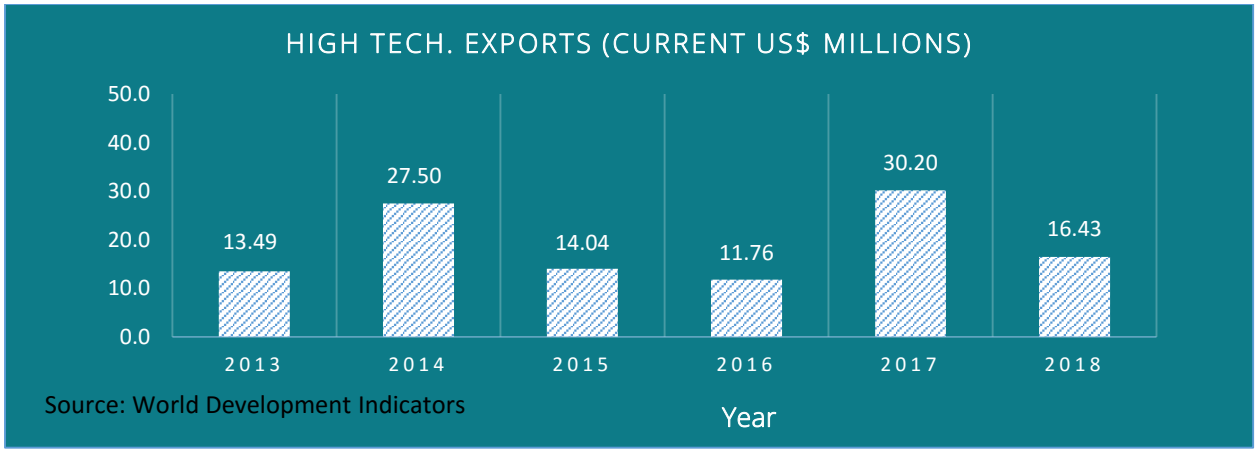
❖ Economic sectors' share in the GDP



Source: UNESCO Science Repot 2021

Currently, services, with 49% contribution to the GDP has the dominant share in the economy. Industry, comprises 25% share of the GDP, including 19% from manufacturing. Agriculture contributes 15% share to the economy.

❖ High Technology Exports



High-Technology Exports data was reported at 16.43 million US$ in 2018. This records a decrease from the previous number of 30.20 million US$ for 2017. High-Technology exports averaged at 15.232 million US$ from Dec 2013 to 2018, with 6 observations. The data reached an all-time high of 30.20 million US$ in 2017 and a record low of 11.760 million US$ million in 2016.

Source:https://www.ceicdata.com/en/cameroon/governance-technology-and-innovation

B. SOCIAL AND HUMAN DEVELOPMENT

Some of the key HD indicators for Cameroon are shown in the table below. The life expectancy is around 59 years and is low by modern standards. The literacy is over 77% according to latest available figures. The infant mortality has shown a small decline over recent years but is still high at 53 deaths per 1000 (male) and 43 deaths per 1000 (female). The usage of the internet has increased over the past few years but still is being used by about one thirds of the population.

Series Name	2016	2017	2018	2019	2020
Life expectancy at birth, total (years)	60.23	60.81	61.18	61.59	60.83
Literacy rate, adult total (% of people ages 15 and above)	..	..	77.07	..	78.23
Literacy rate, adult female (% of females ages 15 and above)	..	..	71.58	..	73.12
Literacy rate, adult male (% of males ages 15 and above)	..	..	82.63	..	83.40
Mortality rate, infant, male (per 1,000 live births)	60.7	58.5	56.5	55	53.2
Mortality rate, infant, female (per 1,000 live births)	49.4	47.5	45.9	44.6	43.1
Individuals using the Internet (% of population)	20.6	23.20	29.7	33.5	37.8
Mobile cellular subscriptions (per 100 people)	78.22	82.54	73.19	83.00	84.35
Mobile cellular subscriptions	18717503	20135388	18455836	21400736	22350310

Data from database: World Development Indicators

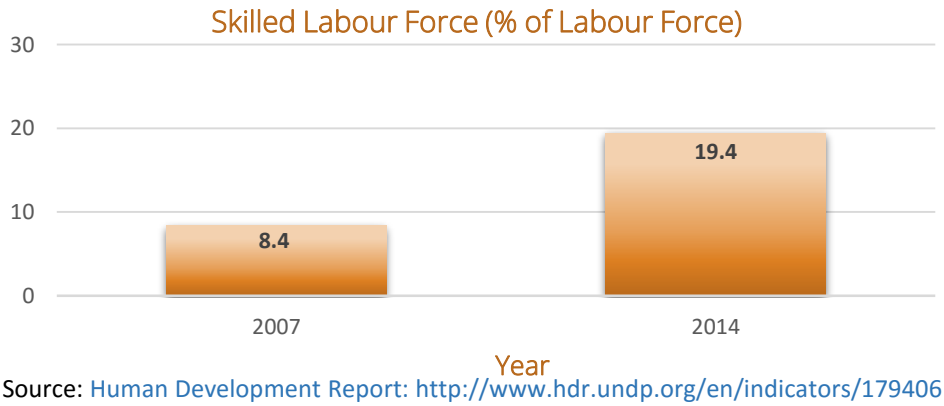
❖ Investment in public services, research and agriculture in Cameroon, 2018 or closest year

	Access to services			Health	Education		Agriculture		
	Share of population with electricity access, 2018 (%)	Share of population with access to basic drinking water services, 2017 (%)	Share of population with access to at least basic sanitation, 2017 (%)	Public health expenditure as a share of GDP, 2017 (%)	Public expenditure on education as a share of GDP, 2018 (%)	Public expenditure on higher education as a share of GDP, 2018 (%)	Total agricultural research spending as a share of Agricultural GDP, 2017 (%)	Growth rate of value-added agriculture, 2017 (%)	Agricultural land sustainably managed as a share of all agricultural land, 2017 (%)
Cameroon	62.7	60.4	39.1	4.7	3.1*	–	0.3	6.8	–

Source: *UNESCO Science Report 2021*

The above data illustrates Cameroon's public access and expenditure on some basic necessities.

❖ Skilled Labour Force



Source: Human Development Report: http://www.hdr.undp.org/en/indicators/179406

Between 2007 and 2014, Cameroon has significantly increased the percentage of its skilled labour force from 8.4 to 19.4% of the total labour force, suggesting an improvement in the education and training of its human resources.

❖ Health:

- In 2015, Economic Community of Central African States (ECCAS) governments and heads of state approved the creation of the **Central African Health Organization** with a watermark

Community Health Fund for Central Africa. This initiative complements the common pharmaceutical policy adopted in 2014 with the aim of improving access to health services by making safe, effective and low-cost pharmaceutical products available to the entire population.

- The strategic paper on the **Health Sector Strategy 2001–2015** had among its major objectives the decentralization of the health system, including empowerment of health districts while the central level gave direction in the areas of monitoring, control, regulation and standards. A gradual decrease in the number of vertical programmes was intended, while health districts developed expertise in providing integrated and comprehensive intervention packages to the population.
- **The Health Sector Strategy for 2017–2026** was adopted. The strategy is aligned with the Growth and employment strategic document 2010–2020, with the development of the health district as a strategic priority objective and with universal health coverage as the ultimate goal.
- **Primary health care (PHC)** is provided in line with the health district framework proposed by the World Health Organization (WHO) Regional Office for Africa, entailing a nurse-based, doctor-supported infrastructure of State-owned, denominational and private integrated health centres. It is supported by a diverse and fragmented system of community health workers recruited by priority public health vertical programmes. The 2016 evaluation of this sectoral strategy found that 7% of the 189 health districts were serviced. The PHC system has achieved high routine immunization coverage rates, high coverage of malaria-preventive technologies and high coverage of HIV screening.
- **The epidemiological profile** of the country is marked by a predominance of communicable diseases, including HIV/ AIDS, malaria and tuberculosis, which represent 23.66% of the overall disease burden, along with a remarkable increase in mortality due to noncommunicable diseases, including cardiovascular diseases, cancers, mental illnesses and trauma due to road accidents, accidents at work and occupational diseases.
- Among children aged under 5 years, lower respiratory tract infections, malaria, diarrhoeal diseases and nutritional deficiencies are the main

causes of morbidity and mortality. Maternal mortality has declined over the years but is still high at 529 deaths per 100 000 live births. Between 2004 and 2014, neonatal mortality slightly decreased from 29 per 1000 to 28 per 1000 live births; during the same period. The infant mortality rate decreased from 68.6 per 1000, to 48.3 per 1000 live births between 2010 and 2020.

- **Immunization Coverage**
  73% (rotavirus); 85% (pneumococcal)
  Source: UNICEF database (2015)
- **A monitoring and evaluation framework** was established to align with the 2012–2015 National Health Development Plan. Some significant results have been recorded by the National Institute of Statistics:

- Infant and juvenile mortality decreased from 144 per 1000 to 103 per 1000 between the periods 1999–2004 and 2010–2014 (though not reaching the target of 76 per 1000).
- Overall HIV prevalence decreased from 5.5% to 4.3% between 2004 and 2014, though with marked disparities between regions and certain social groups.
- Distribution campaigns for long-lasting insecticide treated nets achieved a 54.8% coverage rate amongst children aged under 5 years in 2014 against 0.9% in 2000.

- Free-of-charge care against malaria amongst children aged under 5 years has been effective since 2013.
- Full vaccination coverage for children aged 12–23 months increased from 48% to 75%, while immunization coverage against measles rose from 64% to 89% between 2004 and 2014.

Source: PRIMARY HEALTH CARE SYSTEMS (PRIMASYS). Case Study from Cameroon. WHO, 2017.

GiftedMom: digitizing health care in Cameroon

GiftedMom Co. is a start-up created in 2016 by young Cameroonians in order to increase antenatal care attendance and vaccination of babies and reduce the transmission of HIV from mother to child, by informing pregnant women and new mothers in rural areas, especially, about available resources.

Gifted Mom Co. has developed a smartphone application for Android users. An automated SMS and voice application sends notifications to pregnant women and nursing mothers reminding them when to go for their next antenatal care session or take their baby for vaccination.

Weekly SMS are sent to subscribers informing them of the available educative medical resources that the Ministry of Public Health and its partners have put in place.

Pregnant women or nursing mothers can subscribe to the GiftedMom SMS and Voice Reminder service at hospitals, or directly by sending the keyword MOM to 8566.

Registered as a non-governmental organization, GiftedMom Co. is currently operating in 34 communities across the country. So far, it has affected the lives of over 10 000 pregnant women and nursing mothers, as well as those of their partners and community healthworkers.

Source: *https://tinyurl.com/giftedmom*

C. KEY POLICIES AND GOVERNMENT ORGANISATIONS RELATED TO SCIENCE, TECHNOLOGY AND HIGHER EDUCATION

❖ Key STI Policies

➢ Development of a first national Research and Innovation strategy in Cameroon

The objective of the PSF (Policy Support Facility) service is to assist the Ministry of Scientific Research and Innovation (MINRESI) in elaborating a first national Research and Innovation strategy to develop an inclusive, knowledge-based economy.

The PSF aims to contribute to, among others:

- Creating a bridge between research and the business world by strengthening public-private partnerships.
- Promoting open science.
- Addressing societal challenges, related to food sovereignty, population health, climate change, and endogenous industrialization.
- Boosting international cooperation in the field of research.
- Valuing indigenous knowledge.
- Reducing the gender gap in STEM.
- Making research a lever for the employability of young graduates.
- The PSF service will be carried out by an international panel of experts who will actively collaborate with the national team of Cameroon and the PSF team (OACPS R&I Programme).

  Source: https://oacps-ri.eu/en/services/development-of-a-first-national-research-and-innovation-strategy-in-cameroon/

➢ Vision 2035 (2009)

- In February 2009, the Government of Cameroon (GOC) adopted an ambitious agenda for economic development and poverty reduction known as "Vision 2035." The strategy's overarching goal was to transform Cameroon into an industrialized, upper-middle-income country with low poverty rates, strong economic growth, and a functioning democracy. In this context, the Government is committed to supporting indigenous development of service industries and ICT products through programs to promote ICT companies and support Research and Development in the area.
- It projects partnerships between the research world and the professional world in Cameroon. Major projects envisaged include:
  - organizing a national forum on Internet and ICT governance
  - feasibility studies to put in place an ICT technopole in Cameroon
  - creation of a platform for R&D.
- At the industrial level, Cameroon's ambition is to transform from a primary phase to a secondary import substitution phase with the manufacturing industry accounting for more than 23 per cent of the GDP, as against the current 11 per cent and a secondary sector as a whole (including extractive industries) accounting for 40 per cent of the GDP.

  Sources: World Bank Report Cameroon Public Expenditure Revie: Aligning Public Expenditure with the Goals of Vision 2035; N. Shitang, Cameroons' vision 2035 plans, Master's Thesis 2020.
- *The Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024)* is one of a series of ten-year strategies planned to help realize the African Union's Agenda 2063 for *The Africa We Want*. To ensure effective implementation of STISA-2024, African countries agreed to establish an African Science, Technology and Innovation Fund (AAS, 2018) but this had not yet become a reality by late 2020.
- **STI policy.** There is no explicit STI policy document to date. However, there are related policies and policy instruments, e.g.
  - National Development Strategy 2020–2030
  - Digital Cameroon 2020 Strategic Plan (2017), implemented by Ministry of Posts and Telecommunications
  - National Strategic Plan for Information and Communication Technologies 2020 (2016)

❖ Ministries and/or other bodies responsible for STI and Higher Education

- **Ministry of Higher Education,**
- **Ministry of Scientific Research and Innovation**
- **Ministry of Mines, Industries and Technological Development**
- **Cameroon Academy of Sciences**

The 1974 and 1982 sessions of the National Council for Higher Education and Scientific and Technical Research called for the creation of professional associations and a National Academy of Sciences. This call materialized in 1990 when Cameroonian scientists and scholars met in Douala at the end of the Pan-African Conference on Agriculture and Agricultural Research in Africa, organized by the African Academy of Sciences (AAS), to discuss the possible creation of the Academy. On 5th January 1991, the constituent assembly of the Academy ratified the decision of the Douala group and adopted the draft statutes.

- The goal of the Academy is to promote the progress of science and technology for the economic, social, and cultural development of Cameroon.
- As a non-governmental organization, it is affiliated to both the Ministry of Scientific and Technical Research and the Ministry of Higher Education.
- The Academy is composed of three colleges, namely, the College of Biological Sciences, the College of Social Sciences, and the College of Mathematics and Physical Sciences.
- The Academy constitutes forums for convening activity to bring together stakeholders to prioritize themes of engagement for a given period. So far (2019) existing fora of the Academy include:
  - Forum on Food Security
  - Forum on Public Health
  - Forum on Climate Change
  - Forum on Science Education

Source: http://www.cascienc es.org/about

D. RESEARCH AND DEVELOPMENT

- As per latest available data (2008) the number of researchers per million inhabitants in Cameroon was 233.

❖ Research Institutes in Cameroon

There are several research institutes in Cameroon and many of the universities undertake research in various fields such as medical science, agriculture, social sciences and natural sciences. Research institutes include the Medical Research Institute for Medicinal Plants, the Research Institute for Agronomic Development, Institute for Geological and Mining Research and the International Relations Institute of Cameroon. The state universities at Yaoundé (two), Dschang, Ngaoundéré, Douala and Buéa all undertake varying levels of research. The research sector falls under the purview of the Ministry of Scientific Research and Innovation.

➢ AIMS-Cameroon Research Centre

The AIMS-Cameroon Research Centre is located in the campus of AIMS-Cameroon at Crystal Garden in Limbe, Cameroon. The Centre came into existence in 2017 with the initiation of the German Research Chair in Mathematics and its Applications, supported by Alexander von Humboldt and DAAD in collaboration with

universities in Cameroon and financed by the German Federal Ministry of Education and Research (BMBF).
Its mission is to conduct and foster exceptional research as well as national Lab, industry, continental, and international collaborations. The areas of research include Mathematical Analysis, Nonlinear Analysis, Partial Differential Equations, Climate Sciences, Shape Optimization, Control Theory, Deep Learning and Big Data, with a broad range of applications to real-world problems such as environmental pollution, coastal erosion, urban, networks and problems arising in some local companies.
The Research Centre welcomes visitors to summer schools, workshops, seminars, international conferences, short research visits (1-2 weeks), and long-term research visits (2-4 weeks).
Source: https://aims-cameroon.org/about-the-research-centre/

- **Centre for Research in Infectious Diseases (CRID).**

CRID is a research Centre providing an excellent environment to perform high quality and internationally approved research on vector–borne diseases in Cameroon and Africa and contributing to capacity building by training the next generations of African scientists.
Building on highly qualified scientists and technical staff with extensive local and international collaborations (UK, US, EU, and Africa), CRID is resolutely committed to the fight against major infectious diseases such as Malaria, sleeping sickness, Yellow fever and emerging vector-borne diseases like Zika or Dengue.
CRID Possesses an excellent technical platform to perform research in infectious diseases spanning form field, insectary and a state-of-the art laboratory.
Source:https://www.unesco.org/reports/science/2021/en/dataviz/researchers-million-habitants

- **The Centre Pasteur in Cameroon (CPC)** is a technical establishment of the Cameroonian Ministry of Public Health; endowed with financial autonomy and legal personality. The CPC was created in

1959 in Yaoundé and counts today with two additional establishments: in Garoua (CPC-AG) created in 1985, and an office in Douala since 2004. The CPC contributes to the fight against infectious diseases and promoting health through the diagnosis, prevention, monitoring of endemic and epidemic diseases, scientific research and training of academic students and health personne.

❖ Research Institutes and Organizations in Cameroon

- Association Camerounaise des Amis de l'UNESCO
- Compagnie Française pour le Développement des Fibres Textiles (CFDT)
- Direction de la Météorologie Nationale
- Humid Forest Ecoregional Center
- Institut de Formation et de Recherche Dèmographiques
- Institut de la Recherche Agronomique
- Institut de Recherche pour le Dèveloppement (IRD)
- Institut de Recherches Gèologiques et Minières
- Institut de Recherches Mèdicales et d'Etudes des Plantes Mèdicinales
- Institut de Recherches pour les Huiles et Olèagineux (IRHO)
- Institut des Recherches Zootechniques et Vètèrinaires (IRZV)
- Institut Gèographique National
- Institute for Geological and Mining Research
- Instituts du Ministère de l'Enseignement Supèrieur
- Medical Research Institute for Medicinal Plants
- Ministry of Scientific Research and Innovation

- Research for Enterprise, Industries, Technology and Development

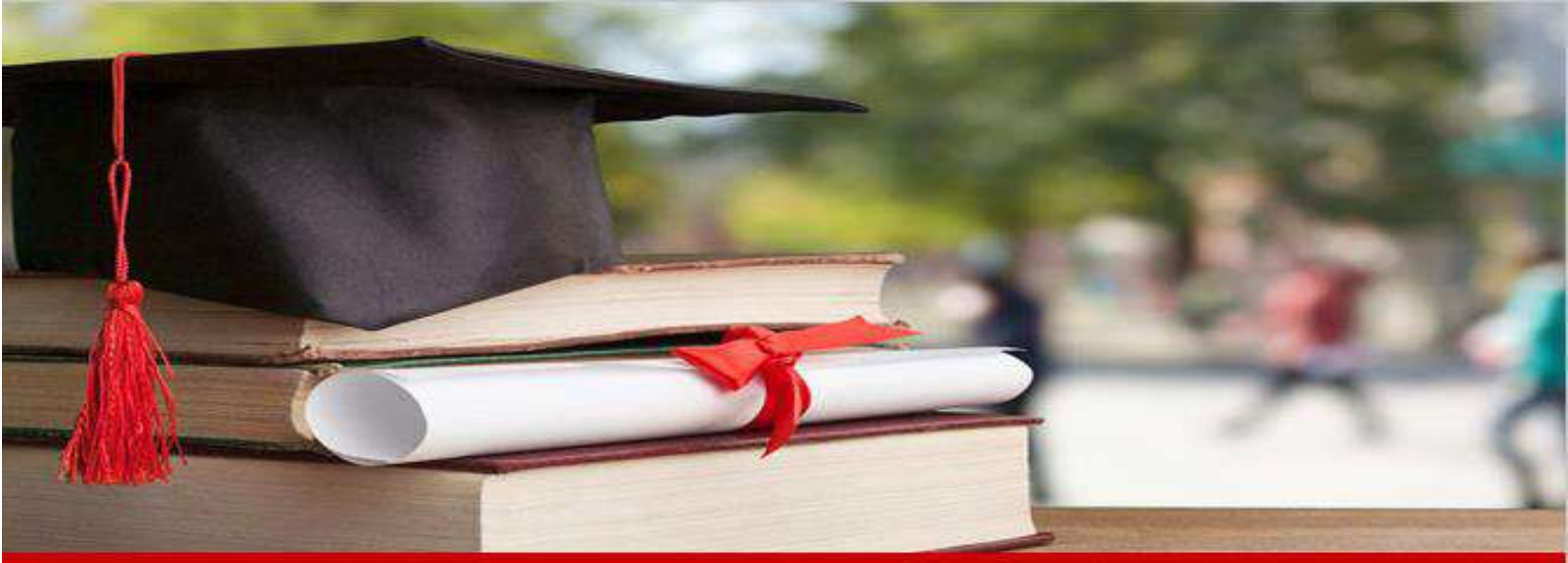
Source:https://www.commonwealthofnations.org/sectorscameroon/education/research_institutes/

❖ Investment in Research and Development in Cameroon's STI

In Cameroon, like in most African countries, research is relegated to the background with no substantial budget allocated to it. The country's Ministry in charge of research for example, was allocated only a small sum of FCFA 10.3 billion in 2018 with little over FCFA 3 billion devoted to investment and research activities. Cameroon's 2019 budget allocation is about 12 billion FCFA (i.e., 1 billion/month), or 0.25% of the annual budget. This is less than 0.1% of Cameroon's GDP (around $35 billion (CIA World Factbook, 2018) and is small when compared to the research budget of emerging economies.

Budget of Cameroon's Ministries Concerned with STI in 2019 - Allocation (in million FCFA)

Ministries	2018	2019	DF	Weight 2019	Rank 2019	Rank
Higher Education	61401	55952	-5449	0.91	1.15	19
Scientific Research and Innovation	10300	11916	1616	1.16	0.25	38
Mines, Industry and Technological development	10409	11255	846	1.08	0.23	39
Public Health	175240	207943	32703	1.19	4.29	10
Agriculture and Rural Development	86613	84980	-1633	0.98	1.75	15
Livestock, Fisheries and Animal Industries	35100	32343	-2757	0.92	0.67	25
Posts and Telecommunications	46845	48351	1506	1.03	1.00	22
Employment and Vocational Training	20723	20587	-136	0.99	0.42	29
Forests and Wildlife	18591	19179	588	1.03	0.40	30
Environment, Nature Protection and Sustainable Development	8042	8009	-33	1.00	0.17	48



E. HIGHER EDUCATION

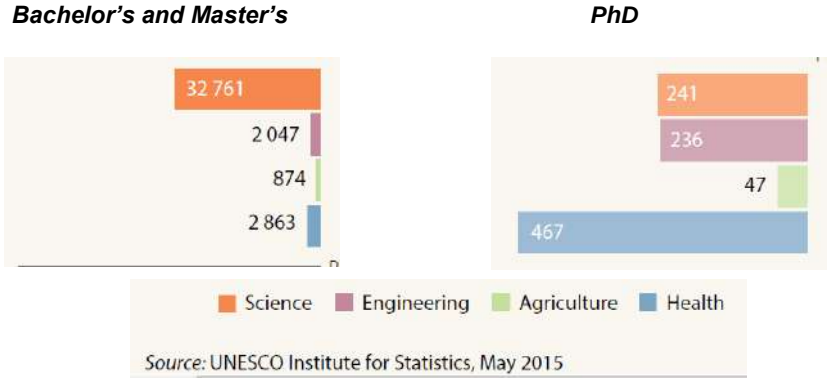
- **Tertiary enrolment in Cameroon for 2018 or closest year (all fields) was as follows:**

Bachelor's degree or equiv. Master's degree or equiv. PhD or equivalent

224 903 62 008 7 258

- **Science and engineering students in Cameroon**

The following data shows the relatively small number of students enrolled in science and engineering from amongst all those in tertiary programs. It is noticeable that amongst all the PhD students enrolled, the largest number are in various fields of health and medicine.



- **Female Enrolment:** Female students constituted almost 47% of all enrolled students at Cameroon universities in 2018.
- **Share of female tertiary graduates by field (%).**

As the data shown below indicates, female students constituted the majority (60.7%) of all students enrolled in the fields of health and

welfare. Natural sciences (36.3%), agriculture (29.1%) and engineering (25.2%) were the other main areas of female enrolment.

	Agriculture	Engineering	Health & welfare	Natural sciences	ICTs	Social sciences & journalism	Business, admin. & law	Arts & humanities
Cameroon[1]	29.1	25.2	60.7	36.3	-	-	54.4	53.8

Source: UNESCO Science Report 2021

❖ Leading Cameroon universities

University Name	National Ranking	Global Ranking
Université de Dschang	1	3186
Université de Yaounde I	2	3511
University of Buea	3	3596
Université de Ngaoundéré	4	4058
University of Maroua	5	4410
Université de Douala	6	6004
Université de Bamenda	7	6274
Université Catholique d'Afrique Centrale	8	8103
Université des Montagnes	9	8944
Université de Yaoundé II	10	9437
ICT University	11	18904
Université Protestante d'Afrique Centrale	12	19023

Source: https://www.webometrics.info/en/Africa/Cameroon%20

❖ New Universities

The Ministry of Higher Education says a total of about XFA65 billion (US$111.7 million) has been allocated to infrastructure development at three new universities, comprising of XFA22.46 billion for the University of Ebolowa, XFA20.4 billion for the University of Garoua and XFA21.8 billion for the University of Bertoua. The educational blocks of the three universities will be delivered in 2023 and the rest of the facilities by 2027.
Source:https://www.universityworldnews.com/post.php?story=20220302205022819

❖ Issues and Developments in Cameroon's Higher Education Sector

- In Cameroon's 2020 finance bill, the budget allocated to the Ministry of Higher Education is XAF65.2 billion. In this bill, the ministry's operating budget has increased by XAF13.4 billion to XAF50.7 billion while its investment budget decreased by more than XAF10.2 billion.
- In many HEIs in Cameroon there is lack of broadband internet, the electricity supply is not constant, there is poor road network and insufficient laboratory facilities. Among the public universities, the University of Yaounde1 and the University of Dschang have the highest number of laboratories.
- Tertiary education and TVET spending levels have not kept pace with rising enrollment rates. The share of education spending allocated to the secondary level is large and growing, but tertiary and TVET spending remains low despite steadily increasing enrollment. However, capital investment in tertiary education and TVET are particularly low.
- Investments in higher education: In recent years, both the private sector and the Government of Cameroon have made huge investments in the overall infrastructural development of educational institutions in Cameroon. Such developments include the establishment of new faculties within universities, the creation of new universities and other institutions of higher learning. Despite these investments, the number of State universities is still insufficient though there is a proliferation in private institutions of higher learning.

Source: Current statistics in Science, Technology and Innovation in higher education in Cameroon, T. R. KINGE et al, African Journal of Rural Development, Vol. 5 (3): July-September 2020: pp.105-142.

- At the institutional level, one success story has been the gradual but effective operationalization since October 2018 of the Cameroon–Congo interstate university based in Ouesso (Congo) and Sangmelima (Cameroon).
- The first of nine state-of-the-art digital university centres has opened in Sangmélima at the Cameroon-Congo Interstate University, or UIECC, with investment valued at FCFA2.5 billion (US$4.5 million). The Centre for University Digital Development of UIECC is being developed under the E-National Higher Education Network initiative of the government.

- Cameroon has launched programmes and initiatives to promote science, technology and innovation which benefitted universities. Cameroon's Vision 2035 embraces science and technology as 'key to global competitiveness' and turning the country into one of the top 20 economies in the world. In 2018, enrolment in higher education programs in agriculture, forestry, fisheries and veterinary programs increased in Cameroon while enrolment in health and welfare programs fell.
- Despite the existence of engineering institutions in Cameroon and sub-Saharan Africa that have been graduating hundreds of engineers annually, there has been little progress in the acquisition and effective utilization of technology for industrial development.
- From 2015 to 2018, private universities in Cameroon have been expanding rapidly, both in terms of number and size while the State universities have increased in size but not in numbers. Enrolments in higher education have increased significantly.
- Enrolments have increased since 2015 mainly in public tertiary education institutions but the allocation of students by discipline still suggests that there is a gap with the needs of Cameroon's economy. Enrolment in STI has increased from 2015 to 2018 in the classical scientific disciplines but much progress still needs to be made in Engineering and Agriculture.

❖ Technical and Vocational Education (TVET)

The Ministries of Employment and Vocational Training (MINEFOP), Secondary Education, and Higher Education are primarily responsible for providing public TVET programs, establishing TVET policies, and overseeing private and other public TVET providers.

A small share of the working-age population has a TVET certificate or diploma. Like general education, TVET has two cycles: the four-year Certificat d'Aptitude Professionnelle program and the three-year Baccalauréat de Technicien, Brevet de Technicien, and Brevet Professionnel programs. However, 2.8 percent, 2 percent, and 4.2 percent of the working-age population has a formal TVET qualification at the lower-secondary, upper-secondary, and tertiary levels, respectively.

Public structures, under the supervision of MINEFOP, responsible for the dissemination of TVET include:

- Vocational Training Centres of Excellence (Les Centres de Formation Professionnelle d'Excellence);
- Sector Vocational Training Centres (Les Centres Sectoriels de Formation Professionnelle);
- Centres for Training Professionals (Les Centres de Formation aux Métiers);
- Accelerated Public Vocational Training Centres (Les Centres Publics de Formation Professionnelle Rapide);
- Rural Artisans of Housekeeping (Les Sections Artisanales Rurales of Sections Ménagères).

Igeaf Vocational Training Center (metal construction)

Vocational Training Center for Marginalized Women

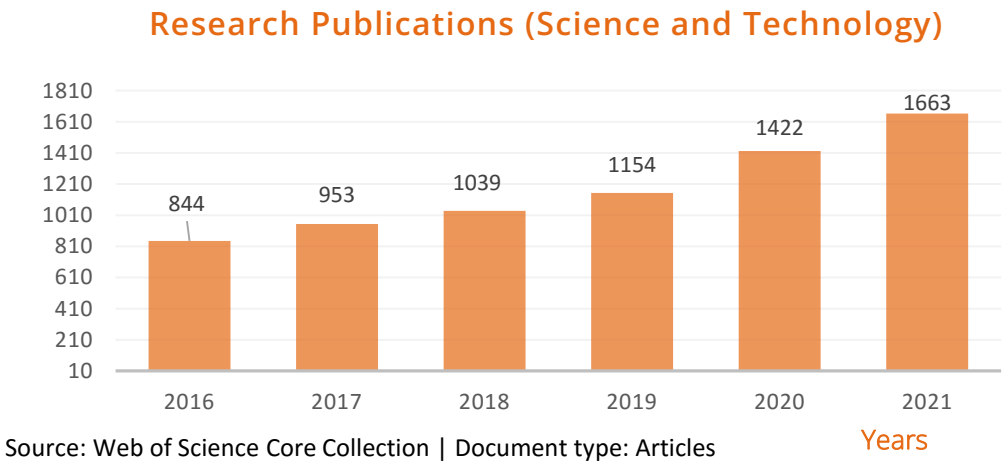
Source: World TVET Database, Cameroon. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training October, 2015.

❖ Innovation Spaces for Higher Education in Cameroon

There are a number of innovation spaces active around the country which higher education students and graduates utilize and these include: Centre for Entrepreneurship, Research and Innovation (CERI) hosted by Catholic University Institute of Buea, ActivSpaces found in Buea and Douala, ZixtechHub found in Limbe, Agro-Hub found in Buea and Silicon Mountain found in Buea. The primary focus of these innovation spaces are on supporting pre-Incubation, Incubation and Acceleration. The CUIB Centre for Entrepreneurship, Research and Innovation (CERI) was established in June 2011 as the business and research arm of the Catholic University Institute of Buea. The CERI focuses on Science, Technology, Engineering and Mathematics disciplines (STEM). The aim is that over time CERI will evolve into a Research Park.

F. RESEARCH PUBLICATIONS

❖ Research Publications in Cameroon



Source: Web of Science Core Collection | Document type: Articles

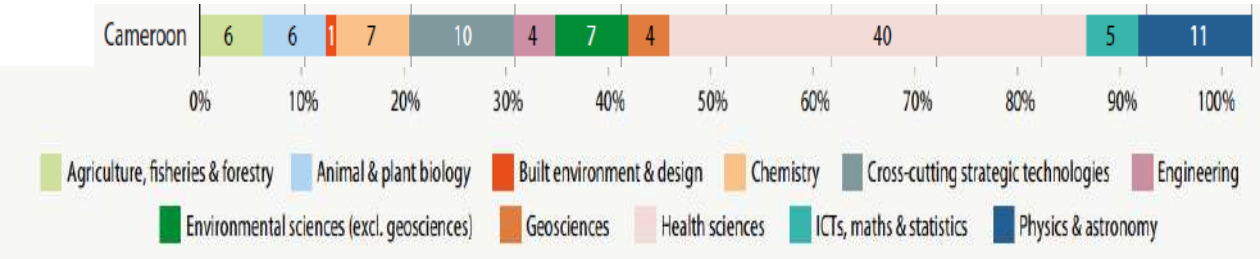
The number of Cameroon's research publications has grown slowly but steadily in the past five years as may be seen from the above graph. The latest number, though still small at 1663, has almost doubled since 2016 reflecting an increased research activity. Within the OIC member countries Cameroon ranks 20th in terms of the total number of publications.

Scientific publications in Cameroon by broad field of science, 2017–2019 (%)

Health sciences still dominate the research work in Cameroon as across the sub-Saharan Africa region. Some 11% of publications from

Cameroon between 2017 and 2019 concerned physics and astronomy and a further 10% cross-cutting technologies.

Figure:1



Source: UNESCO Science Report 2021

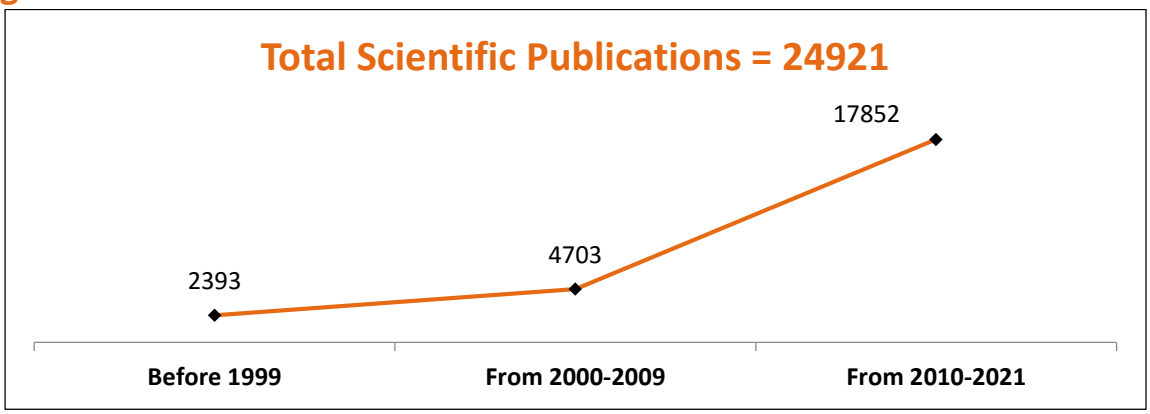
Cameroon has sub-Saharan Africa's highest publication intensity for energy research, as well as for AI and robotics, and the second-highest intensity for materials science. Cameroon's high output in energy research may be explained by the fact that oil companies are funding university research laboratories to help improve training in the field of petroleum geology. Although Cameroon's output on renewable sources of energy is growing, it remains modest: over the dual periods 2012–2015 and 2016–2019, publications doubled on hydropower (from 10 to 24 articles), wind-turbine technology (from 7 to 20) and on biofuels and biomass (from 13 to 29), and rose on photovoltaics (from 14 to 24).
Source: UNESCO Science Report 2021.

In this section, we highlighted the total research Scholarly Output of Cameroon. We focused on the last ten years (from 2012 to 2021) and presented the;

1. Per year publications.
2. Quality of publications (by the per year citations, citations per publications and field weighted citation impact).
3. Source or journal ranking as an indicator for the quality of publications.
4. Number of papers in different subject areas.
5. Top five most productive universities (on the basis of number of publications).
6. Percent (%) international collaboration and the top five collaborating countries (with Cameroon).

Based on Scopus database, Cameroon has published a total of 24921 items over the full period. They include articles, conference papers, reviews, and book chapters etc. The publications data is presented in Figure 3.

Figure:3



1. The per year data of the last ten years i.e. from 2012 to 2021 is presented in the table 1. It contains, the number of publications or scholarly output (SO), citations, and citations per publications (CPP) of 16144 documents (as shown in the table).
2. The total number of citations over the period was 288547, or the CPP was 17.9.
3. Article Field Weighted Citation Impact (FWCI) is another indicator which can be used to present the quality of papers. It "indicates how the number of citations received by an article compares to the average or expected number of citations received by other similar publications". The total FWCI was found to be 1.44 which indicates that the articles received 44 % higher citations as compared with global average.

Table:1

S #	Title	Overall	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Scholarly Output	16144	919	1087	1231	1258	1424	1680	1766	1875	2243	2661
2	Citations	288547	18157	22268	24617	30539	42997	45655	40693	24064	27560	11997
3	Citations per Publication	17.9	19.8	20.5	20	24.3	30.2	27.2	23	12.8	12.3	4.5
4	Field-Weighted Citation Impact	1.44	0.96	1.01	1.07	1.57	2.03	1.97	1.81	1.17	1.47	1.14

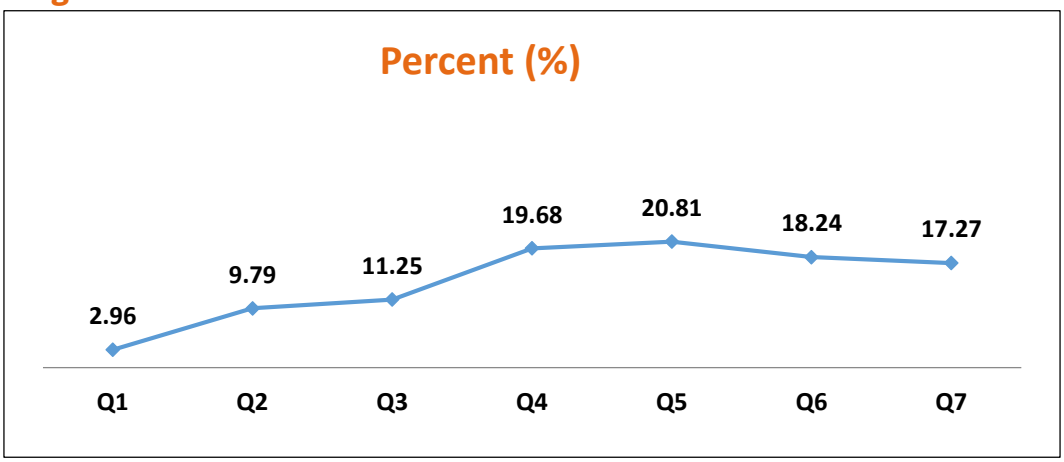
The quality of journals can be used as a metric for the quality of research. For the purpose, Scopus has categorized all journals in seven quartile (Q) groups (from Q1 to Q7). Q1 is occupied by the top 1%, and Q7 is occupied by journals in the 75 to 100% group. The per year publications details in different quartile groups are presented in the table. Its worthy to note that 1336 papers in the last ten years were published in those journals/sources, which do not have citescore data. While, the per year breakup for the remaining 14808 papers are presented in the table 2.

Table:2

S#	Title	Overall	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Pub in top 1% Sources (Q1)	360	16	14	28	22	27	33	43	45	49	83
2	Pub in top 5% Sources(Q2	1597	96	98	127	126	135	151	182	188	225	269
3	Pub in top 10% Sources(Q3)	3060	169	212	219	236	232	332	386	380	427	467
4	Pub in top 25% Sources(Q4)	6490	359	448	457	499	538	648	753	749	894	1145
5	Pub in top 50% Sources(Q5)	10932	569	658	760	799	946	1145	1229	1296	1560	1970
6	Pub in top 75% Sources(Q6)	13540	711	807	928	1001	1131	1383	1538	1627	2010	2404
7	Pub in top 100% Sources(Q7)	14808	806	965	1066	1156	1252	1482	1644	1752	2130	2555

In figure 4 the overall percentage of publications in Q-groups are described. The highest documents are published in Q5, followed by Q4 and Q6.

Figure:4



❖ Publications in top ten areas

Table:3

S#	Subject Area	SO	Citations	CPP	FWCI
1	Medicine	5272	152728	29	2.51
2	Agricultural and Biological Sciences	2824	37193	13.2	0.94
3	Biochemistry, Genetics and Molecular Biology	1878	32305	17.2	0.94
4	Physics and Astronomy	1624	16313	10	0.86
5	Environmental Science	1569	24280	15.5	1.06
6	Engineering	1523	16394	10.8	0.97
7	Social Sciences	1397	11775	8.4	0.88
8	Mathematics	1360	12322	9.1	0.99
9	Immunology and Microbiology	1106	17853	16.1	1
10	Chemistry	1103	14013	12.7	0.75

NOTE: *The total scholarly output (SO) may be different from the sum total of publications (sorted according to Journal classification) because the same publication may be appearing under various classifications, concurrently.*

For the period 2012-2021, we also described the number of publications in ten (n=10) major subject areas in the given table. The highest documents and citations were recorded for Medicine i.e. 5272 and 152728, respectively.

The number of authors, citations per paper (CPP) and Field Weighted Citation Impact (FWCI) for all 10 areas are described in the preceding table 4. The total publications of Cameroon are 16144. However, after distributing the papers in ten subject areas, the same paper may be classified by Scopus in multiple subjects and as such may have counted several times.

❖ Top Five Contributors

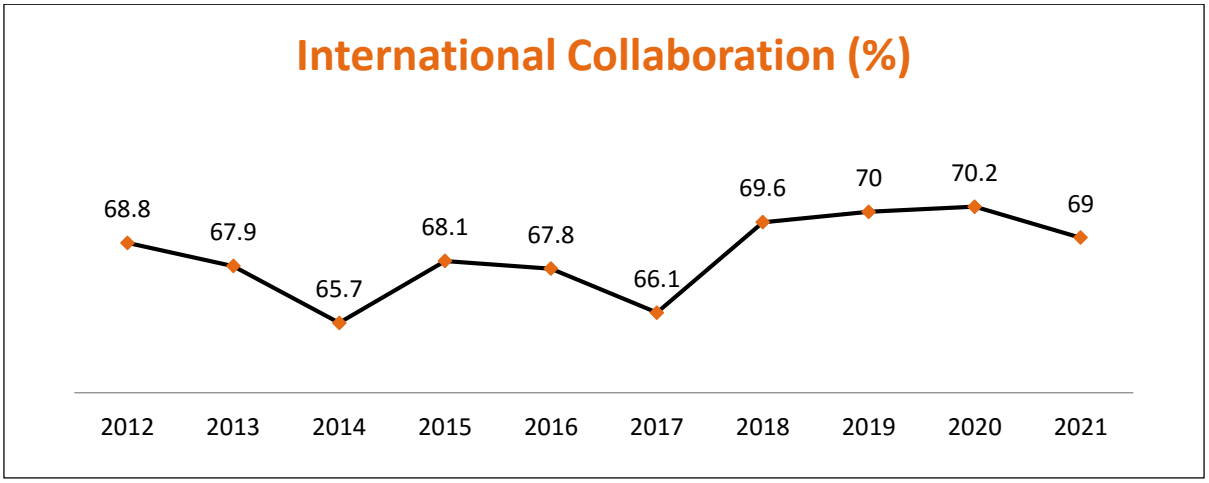
The list of top five most productive universities is provided in the table. For each university the total number of citations, CPP and FWCI are also provided in Table 4.

Table:4

S#	Institution	SO	Citations	CPP	FWCI
1	Université de Yaoundé I	7511	142417	19	1.43
2	Université de Dschang	2945	33740	11.5	0.99

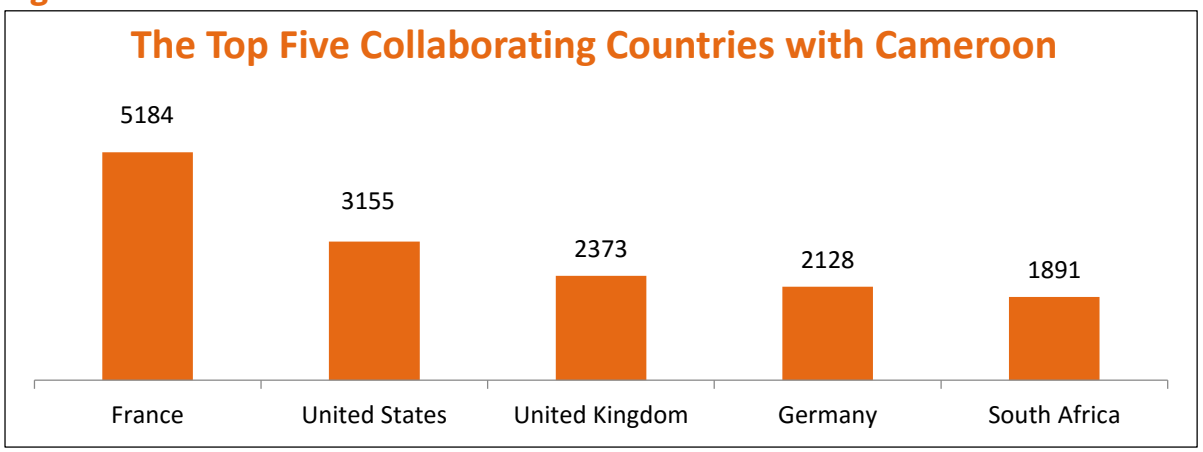
3	University of Buea	1948	24312	12.5	0.89
4	Université de Douala	1855	21825	11.8	0.98
5	Université de Ngaoundéré	1225	13255	10.8	0.86

Figure:5



- Cameroon has published 68.5 % documents with international collaboration. The rate of per year % collaboration (from 2012 to 2021) is presented in the figure 5.

Figure:6



- The data of the top five collaborating countries is presented in Figure 6. For example, the highest documents were published in collaboration with France (n=5184).

G. International Cooperation and Support Initiatives (selected)

➢ Cameroon-France Cooperation:

France has made support for academic and scientific cooperation one of its priorities in its relations with Cameroon. The Propulse Programme is financed as part of a public-private partnership with French companies to promote applications from candidates of excellence with modest resources for high-level training in France. Cameroon has also been selected as a "pilot" country for a new programme of cross-mobility scholarships and which aims to revitalise student mobility and university exchanges between the African continent and France. On the research support side, the FSPI project "*Pépinière doctorale et hub de recherche d'Afrique centrale au Cameroun*" (Doctoral Incubator and Research Hub of Central Africa in Camerron) aims to set up a French research hub in Cameroon. The project includes three levels: institutional support, research training support and research support.

➢ IST-AFRICA-INTERNATIONAL RESEARCH COLLABORATION FOR SOCIO-ECONOMIC IMPACT:

Cameroon is a part of the IST-Africa strategic collaboration for Innovation, Science and Technology research, policy, implementation and adoption in 17 African Member States. Founded in 2002, IST-Africa is supported by the European Commission and African Union Commission and co-

funded under the European Framework Programme since 2005. It is open to participation by all African Member States, it facilitates knowledge sharing, capacity building and skills. IST-Africa played a key role in helping African institutions secure over €100 million in European research and innovation grants under FP7, and provided the evidence to secure dedicated funding of c.€26 million for Research and Innovation Calls addressing African societal challenges under Horizon 2020 (ICT-39-2015, ICT-39-2017).

- **US-Cameroon Cooperation in Earth Sciences:**

The US Geological Survey of the Department of the Interior and the Institute for Geological and Mining Research of the Ministry of Scientific and Technical Research of the Republic of Cameroon entered into an agreement in 1966 via an MoU to pursue cooperation in the earth sciences.

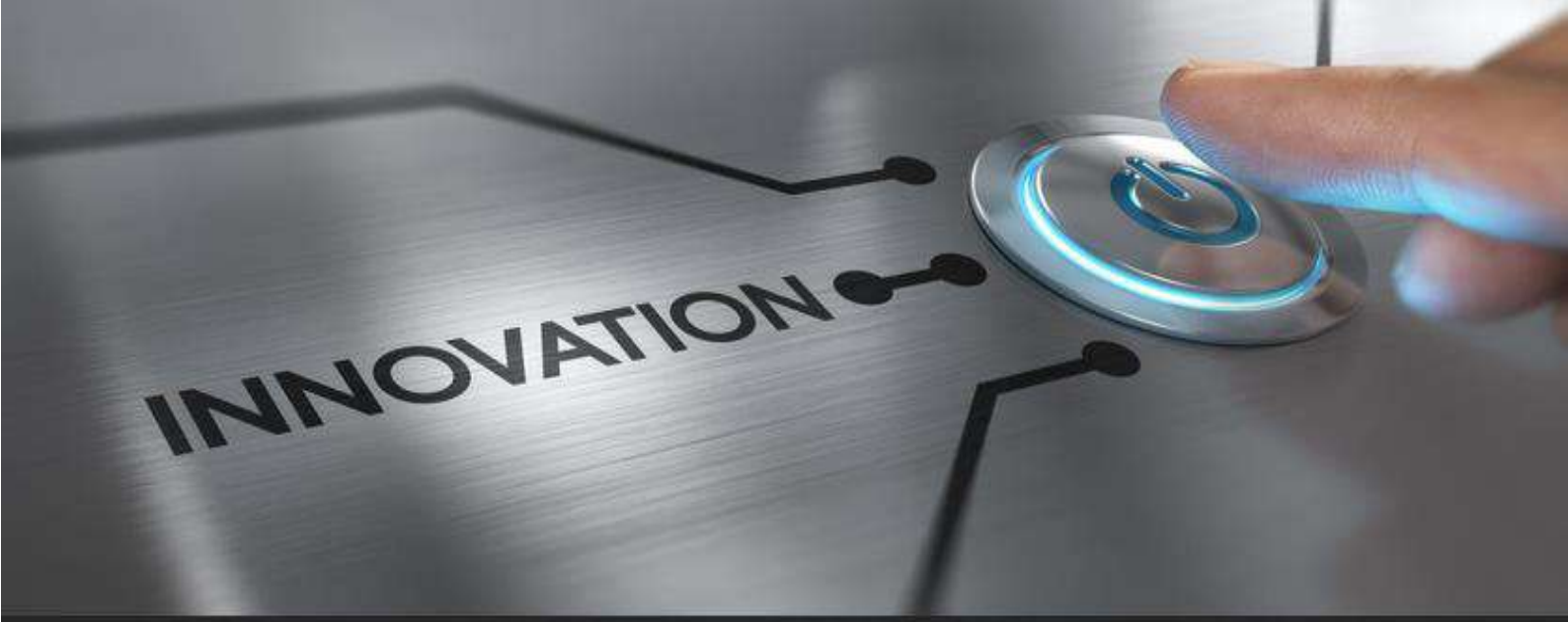
- **Cameroon-German Cooperation:**

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has been working in Cameroon since the early 1960s. Currently, the German-Cameroonian cooperation is focusing on the following key areas:

- Environmental, climate and forest policy
- Rural development
- Governance and decentralisation

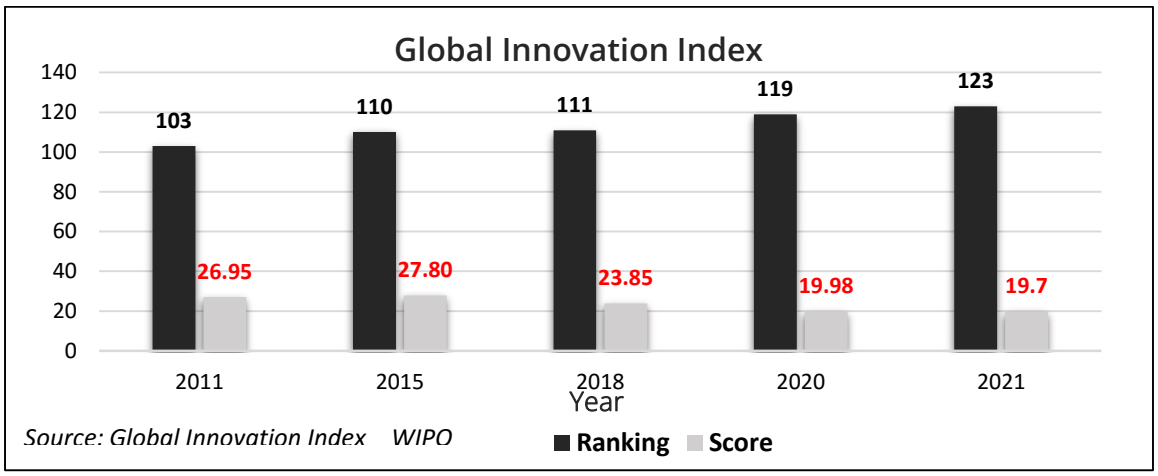
One of the goals of the development cooperation is the conservation of Cameroon's tropical forests and protected areas in harmonisation with the living environment for humans and animals which helps to avoid zoonoses like COVID 19. GIZ is promoting sustainable resource management and the protection of biodiversity in Cameroon

- Anderson University, South Carolina USA, signed an agreement for collaboration on educational programs with the Information and Communication Technology (ICT) University in Yaoundé, Cameroon.
- CY Cergy Paris University has maintained privileged relations with Cameroon's higher education institutions for over ten years. Relationships cover both science and technology, and Educational sciences as well.



H. INNOVATION, ENTREPRENEURSHIP & TECHNOLOGY PARKS

❖ Assessment of Cameroon's Global Innovation Profile:

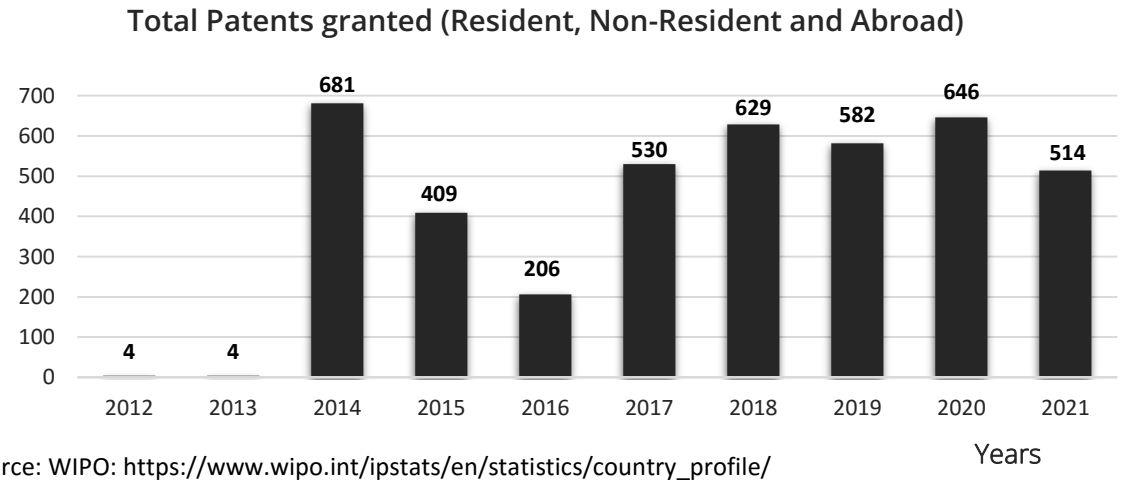


Source: Global Innovation Index WIPO

According to the Competitive Industrial Performance (CIP) index established by UNIDO, Cameroon ranks at the lower end of the scale, along with other low-income Sub-Saharan countries. Overall, Cameroon's STI-driven capacity development profile is weak. The WIPO report on Global Innovation Index indicated that Cameroon was ranked 123rd out of 132 countries in 2021 with a GII score of 19.7. It is also noticeable that Cameroon's GII ranking has progressively weakened over the past ten years from 103 in 2011 to 123 in 2021, while its score has also become lower. The data reflects a dire need to

address the apparent weakness in the various pillars of the innovation eco-system.

❖ Award of Patents



Source: WIPO: https://www.wipo.int/ipstats/en/statistics/country_profile/

The above graph displays data on patents granted to Cameroon including resident, non-resident and abroad categories, between 2012 and 2021. The total number does not show any upward trend between 2014 and the latest year 2021, varying generally between 500 and 600 patents awarded per year. However, as the detailed table below shows, almost entirely these patents were awarded to Cameroon citizens living abroad, while the contribution of local resident or non-resident sources is very small. This further confirms the dire picture regarding innovation that was discussed in the context of the GII data.

Total Patents granted (Resident and Abroad)

Year	Resident	Non-Resident	Abroad	TOTAL
2012	-	-	4	**4**
2013	-	-	4	**4**
2014	40	-	641	**681**
2015	24	-	385	**409**
2016	12	-	194	**206**
2017	31	-	499	**530**
2018	37	-	592	**629**
2019	34	-	548	**582**
2020	38	-	608	**646**
2021	30	-	484	**514**

Source:https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=CM

❖ Initiatives for Promoting Innovation

➢ Technoparks and Co-working Spaces

- **Agro-industrial Technological Park** The government is under taking a FCFA 120 billion ambitious project to construct a ready-made site for the production and industrial processing of agricultural products in the Ouassa-Baboute locality in the Haute Sanaga Division in the Centre Region.
- **Shawn-Nathan EPANG** The government of Cameroon through the Ministry of Mines, Industry and Technological Development, has launched international tenders inviting interested bidders (companies or group of companies) to support the State in the construction, development, equipment, operation and management of Ouassa-Baboute Industrial Reference Technology Park (Technopole). The lofty project is aimed at setting up an industrial site for the production and processing of raw materials especially in the agro-industry sector. In effect, the government and her partner(s) will construct, equip the site as well as provide all other facilities necessary for industrialization while enterprises will simply take up space and install their firms for business to begin. Studies for the construction of the site that is designed to contain 108 enterprises (One and a half hectare per enterprise) but could even go up to 300 enterprises depending on the sizes of the companies.
- **Ouassa Baboute Agro-industrial Technological Park.** It is basically the development of new and innovative products will also consist of training centres for on-the-spot human resource development, research centre to solve enterprises problems. Measuring some 405 hectares for technological infrastructure and 539,389 hectares of agricultural production basin, the agro-industrial park to cost FCFA 120 billion will involve the production and processing of cereals, tubers and plantains, fruits and vegetables, essential oil and aromatics, milk and derivatives and cocoa amongst others.

Source:https://cameroon-report.com/economie/agriculture/agro-industrial-technological-park-a-myriad-of-investment-opportunities-to-grab/

- **Innovation Spaces.**There are a number of Innovation Spaces active around the country including:
    - Centre for Entrepreneurship, Research & Innovation (CERI) hosted by Catholic University Institute of Buea,
    - ActivSpaces (Buea and Douala)
    - ZixtechHub (Limbe)
    - Agro-Hub (Buea), focused on agriculture.

  These Innovation Spaces are primarily focused on supporting pre-Incubation, Incubation and Acceleration, while CERI focuses on Science, Technology, Engineering and Maths disciplines.
- **Centre for Entrepreneurship, Research & Innovation (CERI)** The aim is that over time CERI will evolve into a Research Park, and support training and development of entrepreneurs, leaders and innovators within the science, technology, engineering and mathematics (STEM) disciplines. CERI is focused on fostering innovation and economic competitiveness through collaboration among national and international stakeholders from the education and research, public and private sectors.
- **Agro-Hub** was founded in 2009 based on a recognised gap of marketing and distribution infrastructure for agriculture. During 2015 it focused on inbound marketing for agriculture in Cameroon to provide content to person wishing to buy agricultural products or invest in agriculture in Cameroon. It works with small scale farmers and buyers to support resilient and sustainable supply chains.
- **ZIXTECH Hub** was set up in 2018 as a division within Zixtech Organisation in Limba. It provides co-working spaces, business support and proives a 6-month incubation program. It became a member of AfriLabs in September 2018.
- **ActivSpaces** has established two co-working spaces in Doula and Buea in the West of Cameroon, focused on web and mobile developers, designers, researchers and entrepreneurs. There are a number of business models being applied, including a monthly fee for co-working space offered to freelancers and entrepreneurs, free co-working space

for innovative tech start-ups, and revenue share for start-ups accepted in their six-month Activation Boot camp.

ActivSpaces and CiHub: giving start-ups a head-start in Cameroon

One important complementary scheme to government initiatives has been the creation of community technology and innovation hubs.

- A pioneer in this field is **ActivSpaces**; it provides facilities for web and mobile programmers, designers, researchers and entrepreneurs at co-working spaces in two Cameroonian cities, Douala and Buea. The hub aims to promote African-made technology, innovation and entrepreneurship, especially among youth and women. Since 2015, ActivSpaces has been offering a six-month incubator or accelerator programme called Activation Bootcamp, which provides entrepreneurs with legal advice, mentorship, assistance in registering a start-up company and financial seeding, in return for a 5% share of equity in the venture.
- Another innovation hub and incubator, the **Cameroon Innovation Hub (CiHub),** provides a launchpad for young tech entrepreneurs to develop start-ups based on internet and mobile technology to help address the country's social challenges. CiHub facilitates interactions among developers, entrepreneurs, companies and universities.

Source: UNESCO Science Report 2015

- **Silicon Mountain** Another innovation space is the *Silicon Mountain* found in Buea. This is a privately run center for high technology, innovation and social media that has produced groundbreaking innovations. The aim of Silicon Mountain is to assist students connect to the cyberspace to tap the latest knowledge and enhance their studies and assure success, as well as drive the country's digital economy. The Silicon Mountain is serving as home for techies, designers, tech enthusiasts and techpreneurs from around Cameroon.
- **Silicon River** is another innovation space which the Government of Cameroon plans to open in Yaounde in 2030. This is in their effort in scaling up the digital economy and spurring innovations. The new tech hub will be modeled after the U.S. Silicon Valley and will take up a sizeable portion of the country's budget, officials have said.
- The **Boris Bison Youth Empowerment Business Incubator** ('BB Incubator' for short) provides office facilities, computer equipment services, internet connectivity, entrepreneurial training and business advisory services to promising local startup companies and young entrepreneurs. BB Incubator is the first of its kind in Africa to adopt the 5G Mokki Tech Spaces, a high-tech learning and communication environment in the shape

of a small cottage. 'Mokki' is derived from the Finnish word 'mökki', meaning 'cottage'. In the case of the incubator and its startups, it can be used, among other things, to develop software applications that require ultra-fast internet connections, to render immersive, three-dimensional (3D), virtual-reality (VR) and augmented-reality (AR) learning experiences, as well as to deliver innovation services and remote work to corporations around the globe.

Source:https://appsaf.apieproject.com/news/2022/05/30/new-cameroon-business-incubator-signs-up-with-pan-african-tech-firm-and-finnish-education-technology-network-to-spread-5g-tech-spaces-across-the-african-continent/

❖ **Promoting Digitization of economy**

- The development of the digital economy is a priority axis for the government. Since 2018, the Ministry of Posts and Telecommunications (MINPOSTEL) has organized a biennial forum on the digital economy to identify and support the most promising ideas for the creation of start-ups. This is part of MINPOSTEL's Digital Cameroon 2020 Strategic Plan (2017), which focuses on the digital economy.
- The National Strategic Plan for Information and Communication Technologies 2020 (2016) has contributed to a surge in investment in related infrastructure across the country. By 2017, almost one in five citizens had Internet access and four-fifths had a mobile phone subscription.
- In order to strengthen national capacities in digital engineering, the government has put in place a number of initiatives. In 2014, the University of Yaoundé became the first in Central and East Africa to host a centre of excellence financed by the World Bank. It specialized in ICTs. A second centre of excellence specializing in health was designated in 2017 at the University of Buea. However, in 2019, the World Bank decided to withdraw Cameroon from the programme.
- The government founded the National School of Posts, Telecommunications and Information and Communication Technologies in 2016. It has also set up a high-tech centre specializing in robotics, digital manufacturing and computer aided vision, as well as a three-dimensional (3D) printing centre that is unique in sub-Saharan Africa. A training centre for various computer-aided design and drawing tools has also been operational since 2017.

❖ ICT Infrastructure Development

- The Government is committed to develop the electronic communications infrastructure development program. The following projects were undertaken to develop communications infrastructure:
  - National backbone infrastructure. Densify the telecommunications network and Internet development through the implementation of Optical Fibre cable.
  - Extension of government intranet, establishing an Internet Exchange Point (IXP), Wimax telecommunications infrastructure network and equipped multimedia centers.
  - The Public Key Infrastructure (PKI) Centre is operational since October 2012 hosting two authorities namely: Cameroon's Root Certification Authority and Government Certification Authority. ANTIC has intensified the process of securing the Cameroon's cyberspace with PKI by planning key government applications to be secured in 2015. Key national application secured with this system include: e-procurement (management of public contracts), e-Guce (management of the payment of importation/exportation dues at the sea port) and national social insurance system.

❖ Organizations Promoting Innovation

- Ministry of Mines, Industries and Technological Development
- Ministry of Scientific Research and Innovation
- MIPROMALO (Local Materials Promotion Authority)
- African Institutes for Mathematical Sciences (AIMS), Cameroon
- Higher Institute for Growth in Health Research for Women (HIGHER Women)
- Organization of Women in Science for the Developing World, OWSD
- Cameroon Academy of Sciences (CAS)
- Cameroon Academy of Young Scientists (CAYS)

I. COMBATING THE COVID-19 PANDEMIC

➢ Young Cameroonian researchers propose the use of Drones to combat COVID-19

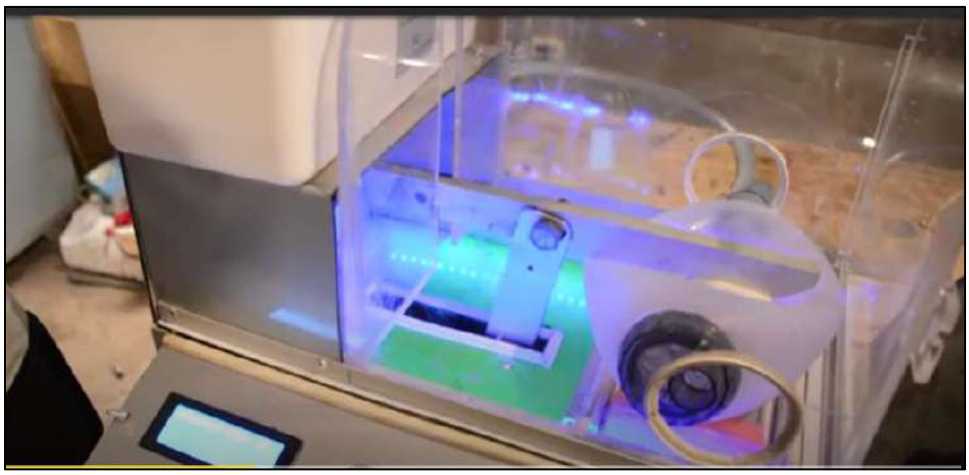
The Ministry of Scientific Research and Innovation has welcomed the proposal of some young Cameroonians suggesting the use of drones to limit and consequently eradicate the coronavirus. The researchers from the Global Map Lumia & Co explained that the master plan consists of urgently mapping the areas infected or with high infection potential and carry out a disinfection campaign in public spaces and large gathering areas (such as aerial spraying of markets) in order to limit the possibilities of the virus due to human-interactions.

They also say that, potential carriers of Covid 19 can be detected through aerial and terrestrial thermograph techniques and if necessary the drones could be used to deliver survival kits and other materials to needy zones.

Source: https://cemac-eco.finance/young-cameroonian-researchers-propose-the-use-of-drones-to-combat-covid-19/

➢ COVID-19: Cameroon engineers develop ventilator prototype

In Cameroon's Bafoussam, the chief regional city in the western part of the country, engineers of L'Agence Universitaire pour L'innovation have produced prototypes of the much needed ventilator and a vaporized sanitizing door.



The initiative has been in collaboration with a local who supervised previous productions as the clinic served as a platform to test prototypes. Authorities in the town have also lauded the initiative as life saving.

The government is expected to evaluate and support the mass production of these products made in Cameroon so as to curb the increasing threats of the pandemic.

Source: https://www.africanews.com/2020/04/17/covid-19-cameroon-engineers-develop-ventilator-prototype//

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