



# Results of Research & Development Survey

## State of Qatar 2021





جهاز التخطيط والإحصاء  
Planning and Statistics Authority  
State of Qatar • دولة قطر



# Results of Research & Development Survey State of Qatar 2021

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His Highness  
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Amir of the State of Qatar

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## Preface



The Planning and Statistics Authority is pleased to present the Results of R&D Survey 2021 to researchers, interested professionals and decision makers. R&D is an essential component of the Second National Development Strategy (2018-2022) and a strong starting point for the development of the Third National Development Strategy which seeks to transform Qatar's economy into a knowledge-based economy as it is more sustainable and less vulnerable to the volatility of global markets. The state's commitment to the development of this field is reflected in the allocation of 2.8% of its revenues to support R&D projects (under the Amiri Decree No. 24 of 2008). In light of the importance of R&D, Qatar has developed a national strategy for R&D sector aimed at "becoming a major force in scientific and technological discoveries and in translating knowledge into creative applications that have a significant social, economic and environmental impact that contributes to the transformation of Qatari economy into a knowledge-based economy to support Qatar National Vision and the 2030 Agenda for Sustainable Development". Furthermore, the significant contribution of experimental R&D mirrors the vitality of the innovation ecosystem as it is important on its own, as well as in the way it adapts and absorbs technology.

In implementing this survey, the international methodologies and standards of the Organization for Economic Cooperation and Development (OECD), have been adopted in measuring R&D, in addition to administrative records data on patents, were relied upon to provide accurate data that enable their results to be able to make sound decisions, and to produce many indicators in the field of research and development, allowing for benchmarking with other countries. The survey also aims to identify the size and characteristics of human resources working in R&D and the volume of expenditure.

On this occasion, I would like to thank all institutions, research centers, universities, ministries, government agencies and the private sector for their cooperation with us and for providing us with the necessary data to complete this survey. We are pleased to receive feedback regarding the results of this survey and hope that we have achieved the desired benefit.

May Allah help us serve our beloved country.

**Dr. Saleh M. Al Nabit**  
**President of Planning and Statistics Authority**

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## Acronyms

|        |   |
|--------|---|
| BERD   | Business Expenditure on R&D   |
| DBRI   | Department-Based Research Institute   |
| FIFA   | FIFA World Cup  |
| FOS    | Fields of Science   |
| FTE    | Full Time Equivalent  |
| GCI    | Global Competitiveness Index  |
| GDP    | Gross Domestic Product  |
| GERD   | Gross Domestic Expenditure on R&D   |
| GII    | Global Innovation Index   |
| GOVERD | Government Expenditure on R&D   |
| HC     | Head Count  |
| HERD   | Higher Education Expenditure on R&D   |
| ISCED  | International Standard Classification of Education                          |
| ISIC   | International Standard Industrial Classification of All Economic Activities |
| NPO    | Non-Profit Organization   |
| OECD   | Organization for Economic Co-operation and Development                      |
| PPP    | Purchasing Power Parity   |
| PRI    | Public Research Institute   |
| PSA    | Planning and Statistics Authority   |
| R&D    | R&D (experimental)  |
| S&T    | Science and Technology  |
| SEO    | Socio-Economic Objectives   |
| SSH    | Social Sciences and Humanities  |
| STA    | Scientific and Technological Activities                                     |
| STET   | Scientific and Technological Education and Training                         |
| STI    | Science, Technology and Innovation  |
| STS    | Scientific and Technological Services                                       |
| UIS    | UNESCO Institute for Statistics   |



## Executive Summary

In 2008, the State of Qatar adopted the Qatar National Vision 2030, whose goals include transforming Qatar's economy into a knowledge-based economy being the most sustainable guarantee of national development results in their human, social, economic and environmental dimensions, and the least vulnerable to the fluctuations of global markets. In this context, R&D has been and continues to be an essential component of the first (2011-2016), second (2018-2022) and third (2023-2030) National Development Strategies. This is the fourth report following the 2012, 2015, and 2018 reports. A total of 178 research entities have participated in the survey from three research sectors: business, government and higher education. The report includes the following chapters: (1) innovation and invention patents and comparison of the State of Qatar with selected countries in the field of research and development; (2) GERD, its types, funding sources and fields of research; and (3) R&D workforce.

The survey detailed capital expenditures to include software separately in 2015, 2018, and 2021. In addition, the survey categorized R&D personnel in terms of their educational level, occupation and distribution by nationality and gender. The survey also tackled the FTEs, comparing them with R&D status in the four surveys carried out during the period (2012-2021).

The survey also included the research outputs of the participating institutions. Among the most important results of the survey are the following:

- 1 The number of patents granted by the U.S. Patent and Trademark Office has increased by more than 25 times - compared to the base year (2011) during the last three years, representing approximately 58% of patents granted by the US Patent Office during the period (2011-2020). Most of the patents granted were in electronics, communications, chemistry, metallurgy and health sciences. This reflects the focus of patents on these important fields of science.
- 2 R&D surveys showed that the number of entities participating in the survey increased steadily, which gained greater importance in the last survey in 2021, leading to comprehensive and improved quality data thanks to the experience gained from conducting previous surveys.
- 3 The Gross domestic expenditure on R&D (GERD) increased from QR 3,055 million in 2015 to QR 3,546 million in 2018, and then to QR 4,452 million in 2021 achieving 25.6%, which was the highest growth rate that year compared to 16.1% in 2018.
- 4 The GERD in Qatar accounted for 0.68% of GDP, placing Qatar seventh among the 12 compared countries and second among the five GCC countries. The Chinese Taipei topped of the list by 3.40%.
- 5 The consistency between the volume of GERD in Qatar and the advanced position of the State of Qatar according to the Global Innovation Index (GII).
- 6 The share of expenditure on higher education decreased by 10%, while the share of the business sector increased by 6.5%, and the government sector increased by more than 38% in 2021 compared to 2018.
- 7 The expenditure on basic research decreased by 10.4%, while expenditure on applied research increased by 49.1% and experimental development increased by 85.3% in 2021 compared to 2018.
- 8 The workforce cost expenditure decreased by 10.7% in 2021, compared to 2018, and the capital expenditure decreased by 48.9%, while expenditure on other current expenses significantly increased by 60.5% during the same period.
- 9 The sources of self-funding for research institutions in Qatar came in first, as they funded a percentage of 79.9% of R&D in 2021, while the government funded 13.9% (of which 7% were supported grants for experimental R&D and 6.9% for contracts to conduct direct R&D). The foreign funding, however, did not even reach 1%.
- 10 Collectively, national sources covered R&D funding expenses in Qatar by 99.1%. Although foreign funding increased by 85.5% in 2021, it covered only 0.9% of R&D funding sources.

- 11 The results by field of research indicate that social science had the highest share of R&D expenditure at 32.9% in 2021, followed by engineering, technology and natural science at 18.5% each, then medical and health science at 15.5%, humanities at about 12.2%, and finally agricultural science at about 2.2%.
- 12 In terms of economic and social goals, expenditure on eight goals increased in varying proportions: "Political and social systems, structures and processes" (97.8%), "Agriculture" (79.9%), "Land exploration and exploitation" (76.2%), "Industrial production and technology" (58.5%), "Energy" (25.9%), "General advancement of knowledge" (24.3%), "Environment" (7.8%) and "Health" (5.2%). On the other hand, expenditure on the other goals declined in 2021 compared to 2018.
- 13 The number of R&D personnel increased from 3,038 in 2012 to 5,628 in 2021. The results indicate that the personnel were distributed by occupation in varying proportions in 2021, with researchers representing 61.8%, technicians 22.6%, and support staff 15.6%. The number of researchers increased by 1.8%, while the number of technicians and support staff slightly decreased by 0.3% and 6.1%, respectively in 2021 compared to 2018.
- 14 Researchers, technicians and support staff accounted for 69.4%, 14.7% and 16%, respectively of total Qatari R&D personnel in 2021.
- 15 The number of Qatari researchers increased by 13.1%, while technicians and support staff decreased by 9% and 29.2%, respectively in 2021 compared to 2018.
- 16 In terms of non-Qataris, researchers, technicians and support staff accounted for 60%, 24.5% and 15.5%, respectively of total non-Qatari R&D personnel in 2021. Support staff and technicians increased by 1.9% and 1.5%, respectively, while researchers declined by 1.1% in 2021 compared to 2018.
- 17 At the level of academic qualifications, PhD holders represented about two fifths (39.6%), master's holders about one seventh (15.2%) and higher diploma holders about 1 in 14 personnel (1.2%), while more than two fifths of them were bachelor degree holders and below (44%). As for gender, the difference between males and females at the doctoral level was about 22 percentage points in favor of males, whereas, it was in favor of females at the master's and bachelor's levels and below, with a difference of about 9 and 13 percentage points, respectively.

R&D continues to be of great importance in the country's development policies, as it has allocated 2.8% of its revenues in support of R&D projects. This percentage may increase for Qatar to take its rightful place among the countries moving towards knowledge-based economies in a world where the role of natural resources is declining in the face of human capital and investment. The State of Qatar's dependence on its own resources in funding R&D activities is a challenge not to be underestimated in light of the fluctuations that the energy and oil market has been witnessing for years exacerbated by the looming crisis caused by the "Corona virus" pandemic.

Overall, progress has been made in the field of R&D in Qatar, which is reflected in the level of investigation of the performance of R&D institutions in various sectors, especially in the business sector and its services sub-sector. Nevertheless, more needs to be done to expand the business record, and the transition from e-scanning system to a faster platform can be considered.

# Survey Methodology

## Definition of R&D

Research and development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge. (Frascati Manual, section 63), whether on improved materials, products, devices, processes or services.

R&D covers three types: Basic Research, Applied Research and Experimental Development (Frascati Manual, section 64):

1. **Basic research:** It is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.
2. **Applied research:** It is an original investigation that is conducted to acquire new knowledge. It is, however, directed primarily towards a specific, practical aim or objective.
3. **Experiential development:** It is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.

This survey follows the guidelines of Frascati Manual to conduct surveys on R&D inputs (OECD, 2015) and covers the fiscal year 2021.

## Survey Objectives

The survey aims to identify the inputs and indicators of experimental research and development in the State of Qatar for the fiscal year 2021 regarding the volume and characteristics of working human resources and the volume of expenditure on research and development by type of expenditure and sources of funding.

## Time period for implementation

The time period for conducting the R&D field survey was from 03 March to 31 May 2021. The R&D Survey 2021 covers a unique period in world history, which is the beginning of the COVID-19 pandemic which started in early 2020 and lasted until 2022. During this period, remote training courses were held for coordinators of research entities in the presence of the Technical Office, field researchers and communication staff to benefit from expert explanations and get acquainted with the inquiries of the concerned authorities. In these training courses, the objectives of the survey were identified, as well as the mechanism for collecting data via an electronic form (R&D Questionnaire) that was posted on the Planning and Statistics Authority website.

Two training courses were also held for communication staff and field researchers in the presence of the Technical Office, where required explanations regarding the procedure of communications and responses to inquiries were provided. There was also explanation on the UNESCO manual and how to fill out the questionnaire, and ensure that field researchers and communication staff have absorbed the information while evaluating their performance with field follow-up.

## R&D Survey Scope

R&D surveys identify the inputs of financial and human resources sources for conducting R&D surveys within the organization. The organization conducting the survey must prepare a report on this activity. An item was added in the questionnaire about R&D activity abroad, noting that R&D surveys conducted abroad are not accounted for in standard R&D surveys. The OECD Working Group and the Expert Group on Science and Technology Indicators have examined these issues in special deliberations for this purpose in order to print the seventh edition " Frascati Manual", which was published in 2015. A total of 185 representatives from research institutions, belonging to three sectors (the business sector, the government sector and the higher education sector), participated in the survey.

R&D personnel are classified into researchers, technicians and support staff, while doctoral students and holders of doctoral degrees are classified as researchers.

Expenditure on R&D is calculated as the sum of the cost of workforce, other current expenditures and capital expenditures. It was agreed that expenditure on R&D would be calculated based on the expenditures spent in the fiscal year of the survey.

The total expenditure on R&D can then be classified by R&D type, field of science and socio-economic objective pursued by R&D. Expenditure on issues of particular interest may also be considered, and R&D expenditure must match the financial sources. As for the accounting systems of the R&D institutions, they are usually not designed to collect data as per the categories mentioned above. Therefore, there may be a need to estimate them, noting that the data is basically quantitative variables in the estimation and classification processes.

In this context, the researchers visited the concerned R&D entities to explain the questionnaire and how to fill it out, and to emphasize the importance of accuracy of the required data and its confidentiality, and that it will only be used for research purposes only.

### **The R&D inputs survey measures three Key Sectors:**

#### **1. Business Sector:**

- Companies, organizations and enterprises that are mainly active in marketing the production of goods and services (except for higher educational institutions).
- Private and public companies and non-profit organizations producing goods and services (except for higher educational institutions).
- The surveyed unit is classified based on the dominance of its activity, in accordance with ISIC, Rev. 4.

#### **2. Government Sector:**

- Sections of Research Departments.
- Department-Based Research Institutes (DBRIs).
- Public Research Institutes.

It is important to note that the non-profit private sector is included in the government sector.

#### **3. Higher Education Sector:**

- All universities, institutes of technology and other institutions that provide higher education, regardless of the source of their funding or legal status.
- All research institutes, experimental centers and clinics operating under the direct supervision/management of higher education institutions or in cooperation with them (OECD, 2015).

### **R&D Inputs:**

#### **R&D Personnel:**

R&D personnel data measures the size of human resources involved in R&D activities: "This includes all persons directly involved in R&D, as well as those who provide direct services, such as R&D managers, administrators and employees" (OECD, 2015).

R&D personnel are measured in terms of their number and Full Time Equivalent (FTE), and are classified according to job and qualifications and are:

- **Researchers:**

They are professionals involved in designing and innovating new knowledge, products, processes and methods and in managing the projects concerned.

- **Technicians and equivalents:**

They are the persons involved in R&D to carry out scientific and technical tasks that require the application of operational concepts and methods, and are usually conducted under the supervision of researchers.

- **Support staff:**

They are qualified and unqualified craftsmen, secretariat and general services staff involved in or directly associated with R&D projects.

- **Doctoral students and post-doctoral fellows:**

In higher educational institutions, doctoral students and post-doctoral fellows are considered as a sub-category of researchers.

### **Expenditure on R&D:**

It refers to actual expenditures by those involved in R&D, and not the budgeted amounts. The survey should include only 'internal' expenditures, and other expenditures should be reported when fully outsourced to R&D activities.

#### **Expenditure includes the following:**

1. **Current expenditures, including:**

- R&D workforce cost.
- Other current costs.
- Indirectly paid current costs.

- **Capital expenditures**

They are those amounts spent by the organization during the survey year that should not be registered as an asset depreciation factor. This approach differs from accounting procedures that distribute the cost of capital expenditure over a number of years, e.g., buildings often depreciate over twenty years.

**The (buildings, vehicles, machinery and equipment) are categorized as follows:**

- Land and buildings.
- Machinery & equipment.
- Software.

- **Expenditure by field of science**

It is a standard work to verify expenditure on R&D by field of science. The main fields of science are natural science, engineering and technology, medical and health science, agricultural science, social science and humanities.

- **Expenditure by socio-economic objectives (SEOs)**

It refers to functional analysis of primary socio-economic objectives within the scope of R&D, for which these activities in the Frascati Manual 2015 are completed.

- **Current expenditures:** Expenditures on items that generally recur within a short period. Current expenditure on R&D activities consists of labor costs and other current expenditures.
- **Gross Domestic Product (GDP):** It is the total market value of all final goods and services produced in a country in a given year, equal to the total consumer, investment and government expenditures, plus the value of exports minus the value of imports.
- **Gross R&D Expenditure (GERD):** It comprises all R&D expenditure on national territory during a given year. Thus, it includes the intramural R&D financed by external sources, but excludes R&D funds paid abroad, in particular to international agencies.
- **Headcount:** It refers to the number of persons directly involved in or supporting R&D (i.e., the total number of R&D personnel within a given category).
- **Intramural R&D:** It refers to the R&D conducted within a statistical unit/sector during a given period, regardless of the source of funding, in support of intramural R&D.
- **Extramural R&D:** It comprises:
  - External expenditures, which are amounts paid or pledged by the authorizing unit to another organization to perform R&D over a given period.
  - The acquisition of R&D works conducted by other units and/or the financial assistance granted to other organizations to conduct R&D (Frascati Manual, section 408).
- **Labor costs:** They comprise annual wages, salaries and all associated costs or benefits, such as bonuses, leave pay, contributions to pension funds, other social security payments, etc. the labor costs for persons who provide indirect services (such as security and maintenance personnel and central libraries, computer departments, or office personnel) are not included in personnel data.
- **R&D Intensity:** It is calculated as a percentage of GDP. It is the GERD that is conducted in a country in a given year against GDP.
- **Innovation and Creativity:** two interrelated but separate concepts, each is required to succeed in business.
  - **Creativity:** It can be defined as ideas that are characterized as new, useful and related to optimal solution to certain issues, developing methods, deepening visions, or assembling or reconstructing known patterns in unique forms. The definition alone, however, does not achieve creativity unless translated into actions. Therefore, it can be said that real creativity is in actual work and not in thinking, although creative work is preceded by creative thinking.
  - **Innovation:** It is doing something new and different instead of the same thing. It can be said that innovation is part of creativity, as innovation is adding something physical from something theoretical in an appropriate way.

# **Chapter One**

## **Comparison of R&D in the State of Qatar with Selected Countries**

This chapter sheds light on three points: the objectives and importance of R&D from the perspective of Qatar National Vision 2030 and Qatar's Third National Development Strategy (2023-2030); innovation and patents; and comparison of R&D in the State of Qatar with selected countries.



## 1.1 R&D from the Perspective of QNV 2030

Pursuant to the ambitions and aspirations to achieve sustainable prosperity for the State of Qatar, QNV 2030 focuses on R&D and innovation, as it considers them one of the very important factors for achieving development and determining the success of a country in building its own knowledge society and economy.

Qatar's Third National Development Strategy (2023-2030) is being prepared to clearly define the need to focus on 'knowledge and innovation' as one of the key factors for economic diversification and prosperity for the Qatari people. The National Research Program relies on inclusiveness and intellectual merit to achieve the following objectives:

- Developing the capacities of the Qatari people and state institutions.
- Building and maintaining a diversified competitive economy.
- Developing the health aspect and achieving social welfare for the population of Qatar.
- Supporting a culture that characterizes the State of Qatar and ensures the security of its people.
- Preserving and developing the natural and urban environment.

Although many public and private sector organizations are involved in achieving these objectives and making this program a success, the national RDI strategy has been mandated to QRDI Council, an affiliate of Qatar Foundation. QRDI Council has adopted the national framework of QNV 2030 to prepare a national strategy that adopts a holistic view of the RDI system, and draws the roadmap towards building a national, vibrant and integrated system.

The State of Qatar is preparing its National Development Strategy (2023-2030) to achieve QNV 2030, and to embody the aphorism of HH Sheikh Tamim bin Hamad Al Thani, the Emir of the State of Qatar on 21 June 2017: "We need diligence, creativity, independent thinking, constructive initiatives, attention to educational attainment in all disciplines, and fighting laziness and dependency. These are not just wishes and dreams, as our goals are realistic and practical." Qatar University's National Strategy (2018-2022), similar to the Third National Development Strategy (2023-2030), has been supportive of RDI so as to achieve the following objectives:

- Support RDI in selected research areas that are compatible with national research priorities and the future needs and aspirations of society at the socio-economic level.
- Establish RDI culture in the university community and provide a supportive environment.
- Diversify the sustainability of funding sources for research projects and programs.
- Excel in the graduate program for national research priorities, and qualify researchers who contribute to enriching the knowledge economy.

This strategy aims to build an educational system that keeps pace with modern international standards and best educational systems worldwide. It offers opportunities for citizens to develop their capabilities and provides them with the best training to be able to succeed in a changing world with increasing scientific requirements, encourages analytical and critical thinking, develops creativity and innovation, and promotes social cohesion and respect for the values and heritage of the Qatari society. It further calls for constructive interaction with the peoples of the world, and the establishment of an effective center for scientific research and intellectual activity.

In light of QNV 2030, the R&D process presents the proposed next steps towards implementing Qatar Research, Development and Innovation Strategy 2030 to build a new national legacy that outlines the next success story of the State of Qatar, entitled "Research, Development and Innovation". This comes after the success achieved by Qatar in the field of LNG technology development, and the subsequent achievement of hosting the FIFA World Cup 2022. The RDI sector will contribute to the creation of promising future opportunities.

## 1.2 Innovation and Patents

Achieving the goals of QNV 2030 depends critically on the state's capacity in science, technology and innovation. The RDI efforts are linked to its exigent national priorities, which adopt the best practices to establish and strengthen the role of the private sector in the field of RDI, and build bridges to enhance communication with all research institutions in order to monitor and evaluate capacities and capabilities, thus the continuous measurement of science, technology and innovation indicators is a priority. Accordingly, it is essential to build and maintain Qatar's Science, Technology and Innovation (STI) Indicators System. The system should also include the ability to conduct forward-looking interpretation of RDI.

Most sectoral strategies include goals and programs that serve STI. The achievement of innovations has become a key focus of many Qatari institutions such as Qatar Science and Technology Park, Qatar National Research Fund, Qatar Environment and Energy Research Institute, the Science Club, Qatar University Research Centers (14 centers), Hamad Bin Khalifa University, Doha Institute for Graduate Studies, Hamad Medical Corporation and other leading national institutions in this field.

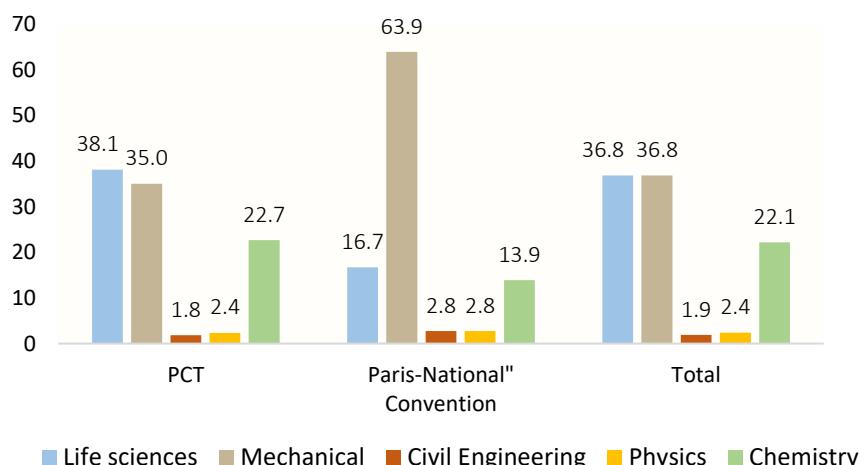
Within the framework of preparing an accurate and reliable statistical database, we note the importance of collecting data on innovation, based on the data of administrative records on patents registered in the State of Qatar, which will be addressed in the following section.

### 1.2.1 Patents Registered in Qatar

Patents are registered for the purpose of protecting intellectual property that refer to the creations of the mind, such as inventions, literary and artistic works, designs, etc., and are legally protected by rights, including copyrights, patents and trademarks, that enable persons to gain recognition or obtain financial gains from their innovations and inventions. Patents also provide an enabling environment conducive to prosperity, creativity and innovation. The Qatari Ministry of Commerce and Industry registers patents to protect the rights of inventors from infringement and to enable them to implement their patented inventions.

According to the data in Figure 1, which shows the relative distribution of patents and research papers registered in 2021, patents registered in the field of life sciences accounted for about 37% of patents registered that year, which is similar to the percentage of mechanical patents. Next comes chemical patents with about 22%, while patents in the field of physics and civil engineering represent only about 2.4% and 1.9%, respectively.

Figure 1: Percentage distribution (%) of patents and research papers submitted by the State of Qatar by field of invention and place of submission, 2021

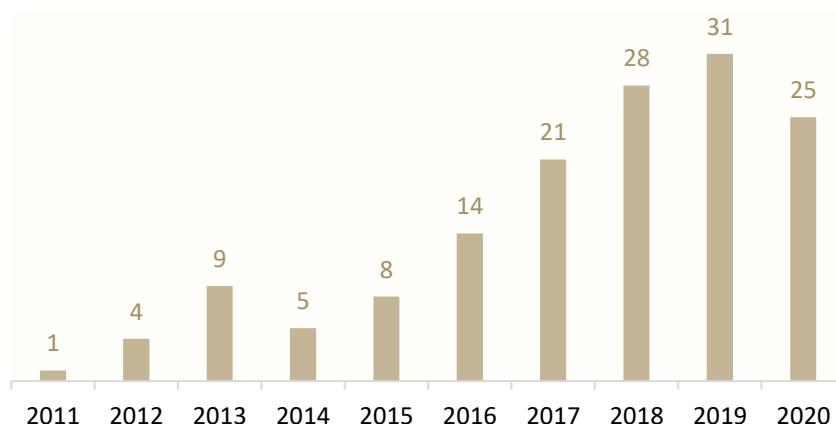


Source: Records of the Ministry of Commerce and Industry for multiple years.

As for the place of submission, about 38% of patents in the field of life sciences were submitted to the Patent Cooperation Treaty (PCT) and about 17% were submitted to "Paris-National" Convention, while 35% of patents in the field of "mechanics" were submitted to PCT compared to about 64% submitted to "Paris-National". The distribution of patents in the fields of civil engineering, physics and chemistry by place of submission between PCT and "Paris-National" Convention varied to a smaller extent, as shown in Figure 1 above.

With regard to the development of patents in Qatar, a steady increase in applications under the Patent Cooperation Treaty (PCT) has been observed. Figure 2 below shows the number of patents granted by the US Patent and Trademark Office and indicates that Qatari patents registered with the US Patent Office increased more than 25 times compared to the base year 2011 during the last three years, which represents approximately 58% of total patents granted during the period (2011-2020). For the U.S. Patent and Trademark Office, patent applicants received 31 grants in electronics, communications, chemistry, metallurgy and health sciences. This reflects that patents were focused on these important fields of science.

Figure 2: Number of patents granted to the State of Qatar by the US Patent and Trademark Office annually, (2011-2020)



Source: U.S. Patent and Trademark Office website: <https://fred.stlouisfed.org/series/PATENT4NQATOTAL>

The number of patents registered with the Ministry of Commerce and Industry (Table 1) during the period (2012-2021) increased from 443 patents in 2013 to 898 patents in 2015 and then decreased to 432 in 2019. However, it increased during the last two years to 587 patents in 2021. The relative distribution varies by patent domain as shown in Table 1.

Table 1: Evolution of the relative distribution (%) of patents and research papers submitted by the State of Qatar by patent domain, (2012-2021)

| Patent Domain     | Years       |      |      |      |      |      |      |      |      |
|-------------------|-------------|------|------|------|------|------|------|------|------|
|                   | 2012 - 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| Life Sciences     | 11.3        | 15.5 | 8.4  | 11.7 | 14.1 | 13.1 | 28.7 | 29.0 | 36.8 |
| Mechanics         | 37.0        | 35.2 | 56.2 | 38.5 | 35.0 | 31.7 | 24.3 | 32.9 | 36.8 |
| Civil Engineering | 16.7        | 10.5 | 9.0  | 11.0 | 10.0 | 10.5 | 10.0 | 7.8  | 1.9  |
| Physics           | 12.2        | 13.3 | 10.1 | 14.0 | 13.2 | 14.6 | 7.4  | 4.4  | 2.4  |
| Chemistry         | 22.8        | 25.4 | 16.3 | 24.8 | 27.8 | 30.1 | 29.6 | 26.0 | 22.1 |

| Patent Domain | Years       |       |       |       |       |       |       |       |       |
|---------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | 2012 - 2013 | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  |
| <b>Total</b>  | 100.0       | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| <b>Number</b> | 443         | 503   | 898   | 616   | 623   | 602   | 432   | 566   | 587   |

Source: Qatar Ministry of Commerce and Industry: Patent records for multiple years.

## 1.2.2 Patents and Intellectual Property at Qatar University

Many Qatari institutions are keen to support RDI and intellectual property protection, such as the Ministry of Commerce and Industry, Qatar Foundation for Education, Science and Community Development, Qatar Scientific Club, and Qatar University, which includes the Department of Planning and Research Development. In 2017, the Innovation and Intellectual Property Office (IIP) at Qatar University was launched to be the pivotal center for the protection of literary and artistic innovations and works for every member of Qatar University. The IIP Office aims to:

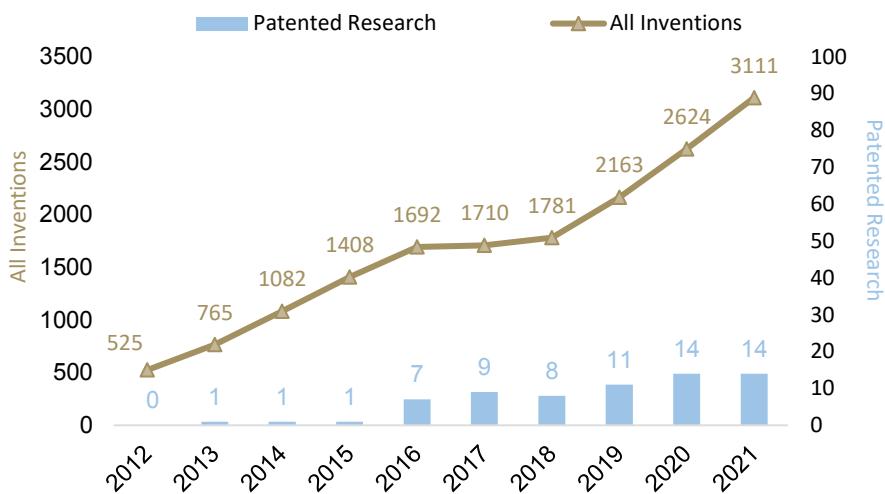
1. Establish a robust IP infrastructure and procedures at Qatar University that adapt to modern innovation requirements.
2. Promote a culture of innovation and integrate it into the fabric of Qatar University.
3. Encourage the use of innovations at the university and increase their societal impact.

The IIP Office performs many services and functions, mainly:

1. Increase awareness of IP rights within the university and in the Qatari society as a whole (through workshops, seminars, lectures, conferences, etc.).
2. Produce and disseminate materials (such as flyers, books, reports) to raise awareness of IP.
3. Support the registration of Qatar University's IP rights in collaboration and coordination with other stakeholders (e.g., Ministry of Commerce and Industry and Qatar Foundation).
4. Communicate with researchers in order to identify their problems and provide solutions in relation to IP rights and patents.
5. Maintain a register (database) of IP rights at Qatar University.
6. Market IP rights inside the university and abroad.
7. Negotiate IP licensing agreements between the university and the stakeholders.

Figure 3 below shows the number of patented and IP protected research papers submitted by Qatar University, indicating that the number of patents has increased steadily in the last decade from 525 in 2012 to 3,111 research papers in 2021, with an annual growth rate of 19.8%, which reflects an accelerated pace of research papers submitted in the last five years. As for the number of patent holders, the statistical results indicate a steady and accelerated increase in recent years, as the number for Qatar University alone increased from one patent holder in 2015 to 14 patent holders in 2021. If we compare the growth rate of patents obtained for this scientific institution, we find that the pace of patents at Qatar University is growing on an annual rate of 19.5%. This is a high growth rate that makes Qatar University a leading institution in the field of innovation and patents, which promises outstanding future results, especially since these patents cover fields of science such as medicine, engineering, chemistry and biochemistry.

Figure 3: Number of research papers submitted by Qatar University and number of patented research papers, 2012-2021



Source: QU administrative records for different years.

### 1.3 The State of Qatar Compared with Selected Countries

Comparing the R&D performance of the State of Qatar with selected countries, including advanced countries in the field of R&D, in addition to four GCC countries and other Arab countries, reflects its prominent status in R&D, which is related to many different economic concepts, such as entrepreneurship, creativity, innovation, production, economy, sustainability and others, in light of the great development witnessed in the fields of modern technology. It is noted that the State of Qatar has made great efforts in the higher education, health and industry sectors, most notably by Qatar University, Qatar Foundation for Education, Culture, Science and Community Development and its affiliates, such as Qatar Science and Technology Park and Qatar National Research Fund.

Table 2 below shows the ratio of R&D expenditure to GDP, the number of full-time researchers to one million workforce members, the innovation and development factor in the Global Competitiveness Index and other selected indices, including those related to science and technology.

The economies of the most diversified countries, such as Chinese Taipei, Luxembourg, Norway and Singapore, have the highest GERD to GDP.

The Gross Domestic Expenditure on R&D (GERD) is also high in Qatar, as it ranked fourth among the compared Arab countries, right after the United Arab Emirates, Tunisia and Jordan, and also ranked fourth right after Singapore for non-Arab countries (see Table 2 below) with a percentage of expenditure amounting to 0.68% of GDP in 2021. The GERD increased by 33.3% in 2021 compared to 2018, reflecting the solid structure of the Qatari economy, which enjoys the presence of large industries based on resources and joint investments with major international companies. The parent companies involved in investments with the Qatari side also conduct research and development in their headquarters in their home countries. This strong role of joint ventures is also present in Kuwait, Oman, Luxembourg and Singapore.

**Table 2: Comparative indicators for science, technology and innovation, 2021 (or nearest)**

| Country               | Oil & Gas | Ratio of GERD to GDP | Number of full-time researchers (millions) | Global Information Infrastructure (GII) | U.S. Patent and Trademark Office (USPTO) (Millions) | Publications (Millions) |
|-----------------------|-----------|----------------------|--|---|---|-------------------------|
| <b>Chinese Taipei</b> | No        | 3.40                 | 13800                                      | NA                                      | 550.6   | 1675.5                  |
| <b>Kuwait</b>         | Yes       | 0.19                 | 514  | 72                                      | 6.7   | 615.3                   |
| <b>Luxembourg</b>     | No        | 0.44                 | 5076,9                                     | 23                                      | 145   | 3646.7                  |
| <b>Norway</b>         | Yes       | 2.15                 | 6674                                       | 20                                      | 141.3   | 4635.7                  |
| <b>Oman</b>           | Yes       | 0.37                 | 281  | 76                                      | 0.4   | 523.9                   |
| <b>Qatar</b>          | Yes       | 0.68                 | 1470                                       | 68                                      | 8.6   | 1619.3                  |
| <b>Saudi Arabia</b>   | Yes       | 0.52                 | NA   | 66                                      | 28.2  | 1292.7                  |
| <b>Tunisia</b>        | No        | 0.75                 | 1660                                       | 71                                      | NA  | 4594                    |
| <b>Bahrain</b>        | Yes       | NA                   | NA   | 78                                      | NA  | 2733                    |
| <b>U.A.E</b>          | Yes       | 1.45                 | 2379                                       | 33                                      | 13.1  | 120.1                   |
| <b>Jordan</b>         | No        | 0.7                  | 596  | 81                                      | NA  | 4792                    |
| <b>Singapore</b>      | No        | 1.84                 | 6824,7                                     | 8                                       | 191.7   | 3595                    |

Sources: UNESCO Institute for Statistics (UIS) <http://uis.unesco.org>; Global Innovation Index 2021; Federal Reserve; and "Core Group" at Web of Science: OECD Key Science and Technology Indicators 2021.

The results of the 2021 R&D survey show consistency with Qatar's good position in the most accurate Global Innovation Index (GII), placing the State of Qatar in an advanced positions in the Arab world, coming ahead of Saudi Arabia and the UAE. This is reflected in the increase in patent applications in recent years, in addition to Qatar's advantage over neighboring countries in terms of scientific production outputs compared to the number of Population .

# **Chapter Two**

## **Gross Domestic Expenditure on R&D (GERD)**

This chapter deals with the expenditure of different sectors that conduct R&D in the State of Qatar, by type of sector, type of research, field of research, types of expenditure (current or capital), as well as according to the classification of economic and social objectives. This chapter also shows the different sources of financing expenditure and compares the results with previous surveys with a difference of three years between each survey during the period (2012-2021).

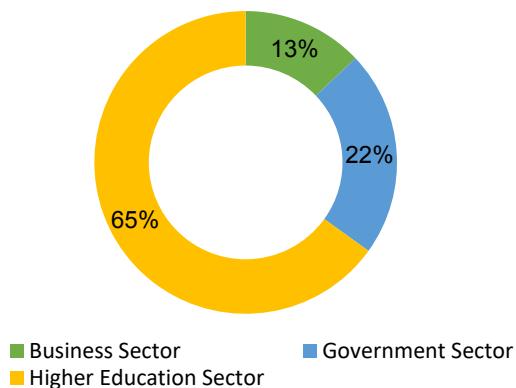


## 2.1 GERD by Sector and Type of Research

Figure 4 shows the statistical results of GERD by sector, which indicate that the higher education sector received 65% of GDP in 2021, while the share of the government sector was 22%, compared to 13% of GDP in the business sector. The share of expenditure on the government sector increased by more than 38%, and the business sector by about 6.5% in 2021, compared to 2018. The share of the higher education sector declined by about 10% of GDP during the same year.

Expenditure on the government sector increased by more than 38%, and on the business sector by 6.5% in 2021 compared to 2018, while it declined on the higher education by 10% in the same year.

Figure 4: GERD by Sector, 2021

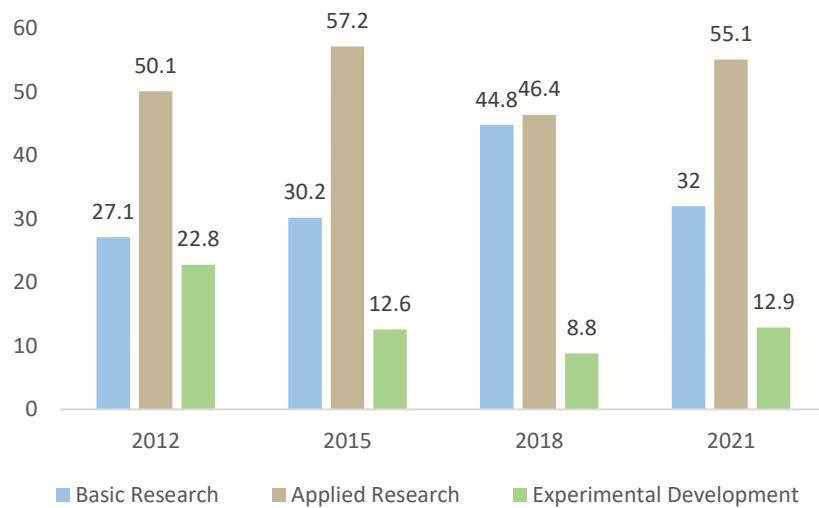


The GERD results by type of research (Figure 5) indicate that expenditure on basic research amounted to 32% of GDP, and expenditure on applied research reached 55.1%, while expenditure on experimental development reached 12.9% in 2021.

Expenditure on experimental development increased by 46.6% and on applied research by 18.8% in 2021 compared to 2018, while expenditure on basic research decreased by 28.6% in the same year.

The gross domestic expenditure on basic research increased by 65.1% during the period (2012-2018), after which it declined by 28.6% in 2021 compared to 2018. The gross domestic expenditure on applied research declined by 7.4% during the period (2012-2018), after which it recorded an increase of 18.8% in 2021 compared to 2018. On the other hand, Gross domestic expenditure on experimental development declined by 61.4% during the period (2012-2018), and then increased by 46.6% in 2021 compared to 2018.

Figure 5: Percentage of GERD by type of research  
(2012-2021)



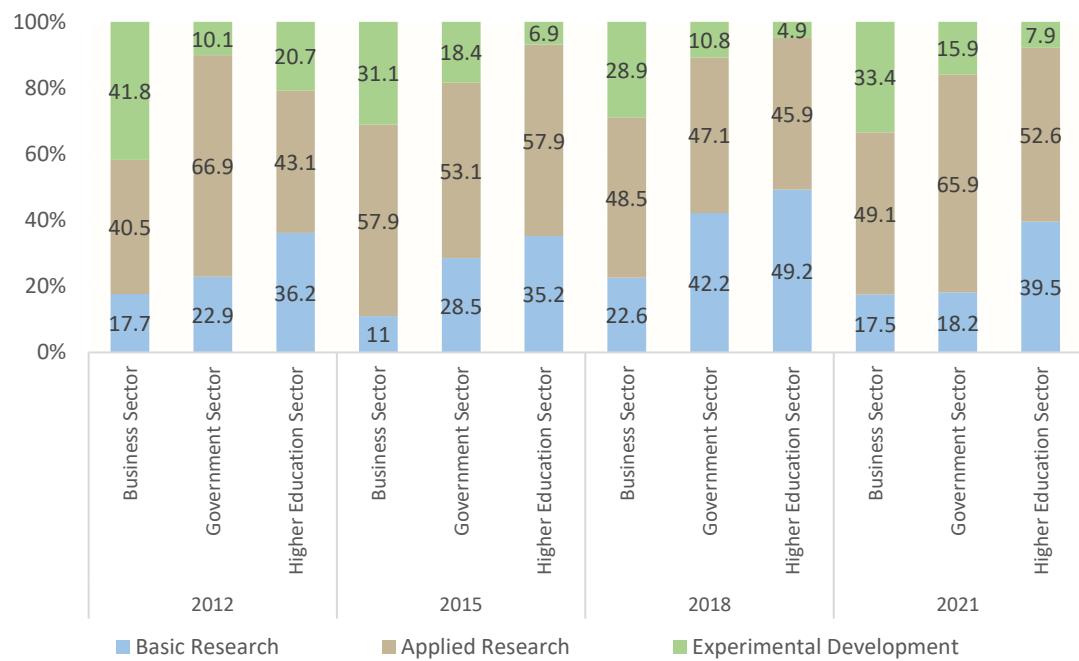
**Figure 6 below shows the relative distribution of GERD by sector and type of research. The results by business sector indicate that share of expenditure on basic research reached 17.5% versus 49.1% for applied research and 33.4% for experimental development in 2021.**

The expenditure on basic research in the business sector increased significantly during the period (2012-2018) by 27.3%. However, in 2021, it decreased by 22.7% compared to 2018. The expenditure on applied research continued to grow at a declining positive pace of 20% during the period (2012-2018), while it decreased by 1.2% in 2021 compared to 2018. On the other hand, expenditure on experimental development witnessed a decline of 30.9% during the period (2012-2018), but recorded an increase of 15.7% in 2021 compared to 2018.

**The government sector's expenditure** on basic research reached 18.2%, compared to 65.9% for applied research, and 15.9% for experimental development in 2021. The expenditure on basic research increased by 83.8% during the period (2012-2018) and sharply declined by 56.8% in 2021, compared to 2018. The government sector's expenditure on applied research declined by 29.7% during the period (2012-2018), and then witnessed an increase of 40% in 2021, compared to 2018. The government sector's expenditure on experimental development continued to grow steadily at 6.4% during the period (2012-2018) to escalate to 47.7% in 2021, compared to 2018.

**With regard to the higher education sector's expenditure** on basic research, it amounted to 39.5% of total expenditure on all types of research, and the share of applied research represented 52.6%, compared to 7.9% for expenditure on experimental development in 2021. The expenditure on basic research increased by 35.9% during the period (2012-2018) and then witnessed a decrease of 19.6% in 2021, compared to 2018. On the other hand, the expenditure on applied research witnessed a steady increase of 6.5% during the period (2012-2018) to reach 14.7% in 2021, compared to 2018. The expenditure on experimental development declined by 76.2% during the period (2012-2018), followed by a near-similar increase of 60% in 2021, compared to 2018.

**Figure 6: Percentage distribution (%) of GERD by sector and type of research, (2012-2021)**

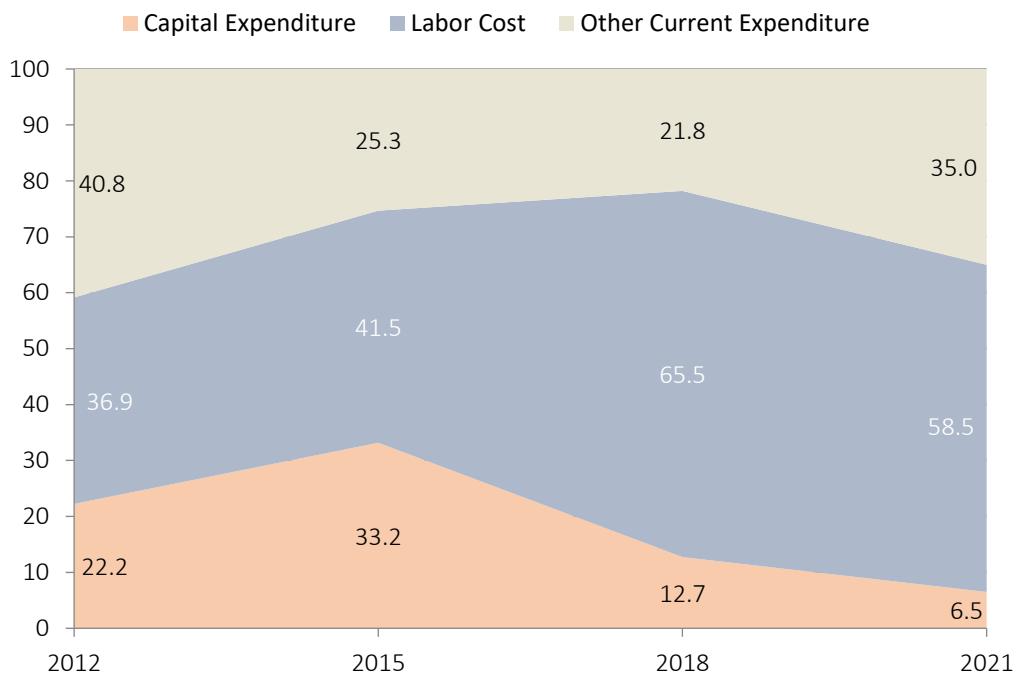


## 2.2 GERD by Sector and Type of Expenditure

The results of GERD by type of expenditure (Figure 7) show that the cost of workforce (including postgraduate students in the higher education sector) represented nearly three-fifths of expenditure (58.5%) in 2021, while capital expenditure represented only 6.5%. The share of other current expenditures was slightly more than one third of GERD (35%) in the same year.

The expenditure on the cost of workforce increased by 77.3% of total expenditure during the period (2012-2018), but then decreased by 10.7% in 2021, compared to 2018. The capital expenditure steadily decreased by 42.8% during the period (2012-2018), and then declined by 48.9% in 2021, compared to 2018. The expenditure on other current expenses decreased by 46.6% during the period (2012-2018), after which it recorded an increase of 60.5% in 2021, compared to 2018.

Figure 7: Percentage distribution (%) of GERD by type of expenditure,  
(2012-2021)



When looking at the types of expenditure by sector, as in Figure 8 below, we will find the following:

**In the business sector**, the expenditure on the cost of workforce reached 58%, compared to 7.2% on capital and 34.7% for other current expenditures of total expenditure in 2021.

The expenditure on the cost of workforce increased by 29.9% during the period (2012-2018), and again increased by 32% in 2021 compared to 2018. The capital expenditure recorded a significant increase of 113.8% during the period (2012-2018), after which it decreased by 77.7% in 2021, compared to 2018.

As for other current expenditures, they witnessed a significant decrease of 53.7% during the period (2012-2018), and then they increased by 47.3% in 2021, compared to 2018.

**At the level of the government sector**, the expenditure on the cost of workforce recorded 52.3%, compared to 16.4% on capital and 31.4% for other current expenditures of total expenditure in 2021.

The expenditure on the cost of workforce increased by 58.1% during the period (2012-2018), and again increased by 2.1% in 2021, compared to 2018. The capital expenditure declined by 42% during the period (2012-2018), and then declined by 18.8% in 2021, compared to 2018.

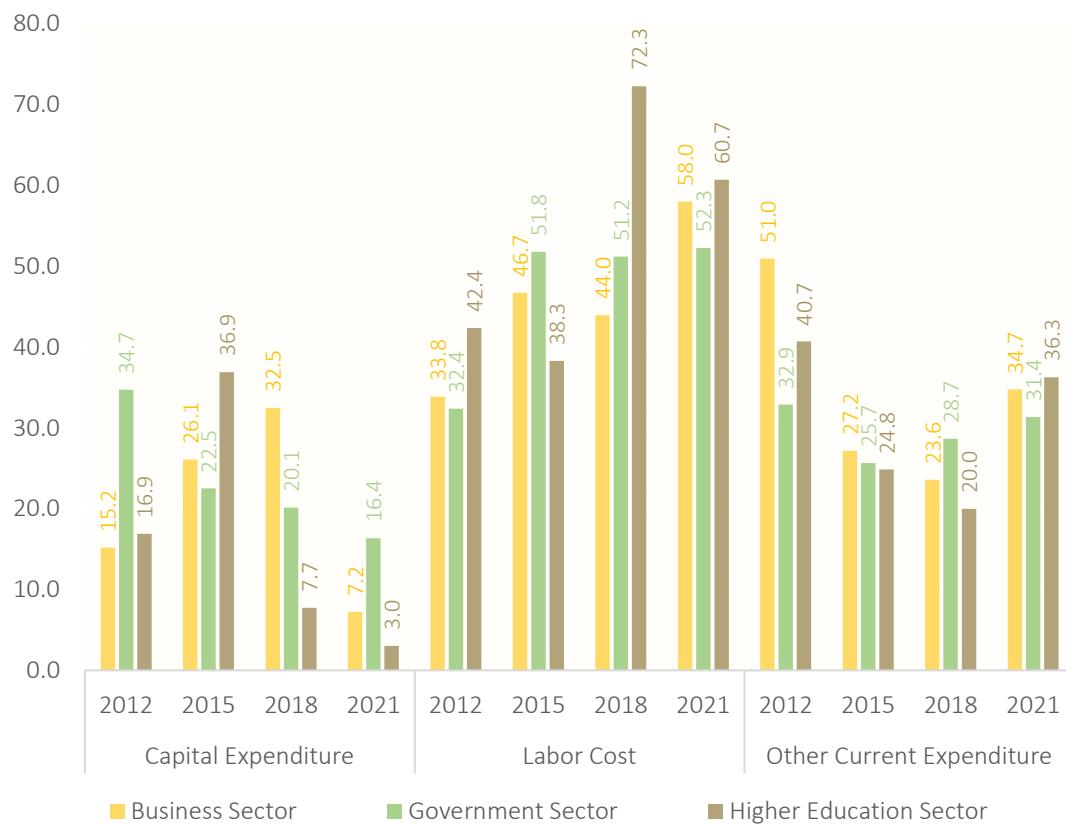
With regards to other current expenditures, they decreased by 12.8% during the period (2012-2018), and then increased by 9.3% in 2021, compared to 2018.

**As for the higher education sector**, expenditure on the cost of workforce amounted to 60.7%, compared to 3% on capital, and 36.4% for other current expenditures of total expenditure in 2021.

The expenditure on the cost of workforce increased by 70.6% during the period (2012-2018), but decreased by 16% in 2021, compared to 2018. The capital expenditure decreased by 54.2% during the period (2012-2018), and continued to decrease by 61% in 2021, compared to 2018.

As for other current expenditures, they decreased by 50.9% during the period (2012-2018), compared to an increase of 81.5% in 2021, compared to 2018.

Figure 8: Percentage distribution (%) of GERD by sector and type of expenditure, (2012-2021)



### 2.3 R&D Funding Sources by Sector and Type of Source

There are various R&D funding sources, including self-financing for institutions (research entities), the government, the local business sector and other national sources, in addition to foreign sources. The results indicate that self-financing for institutions represented 79.9% of R&D funding in 2021. The government funding represented 13.9% (of which 7% were subsidized grants for experimental research and development and 6.9% for contracts to conduct direct research and development). The local business sector was accounted for 1.9%, and other national funding sources 3.3%, versus about 1% for foreign funding (Figure 9).

Self-financing for institutions represented 79.9% of R&D funding sources. The government covered 13.9% versus 6.2% for other sources in 2021.

Figure 9: Percentage distribution (%) of R&D funding sources by type of source, 2021

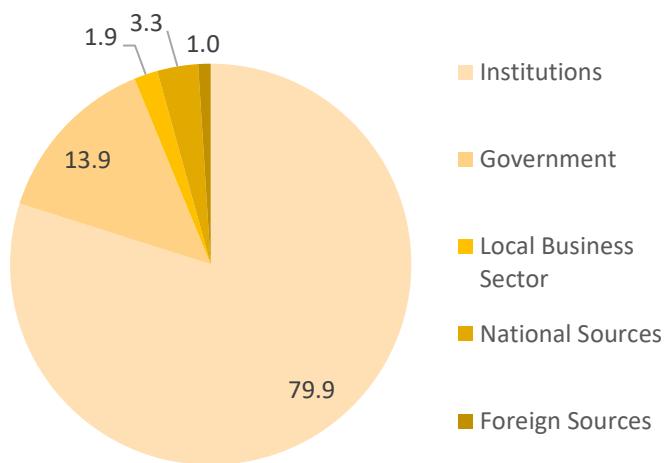
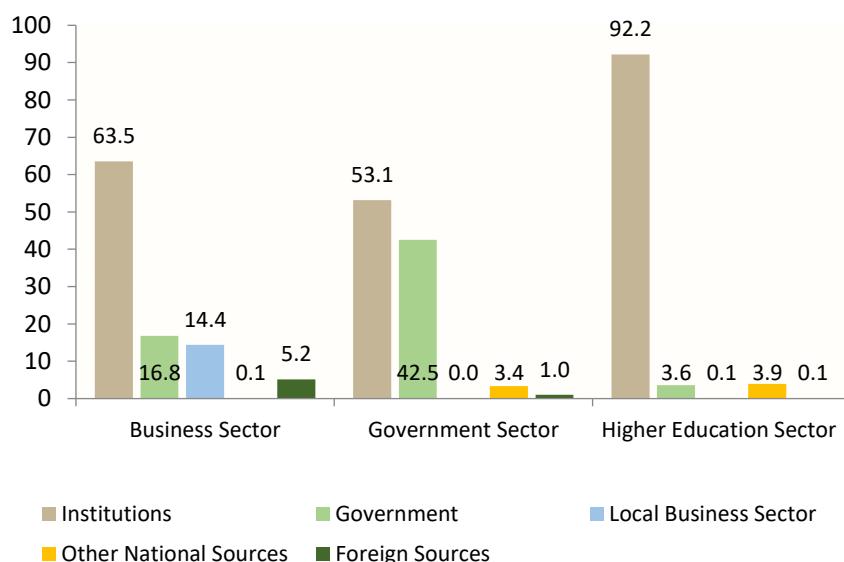


Figure 10 below shows the relative distribution of R&D funding sources by sector and type of source, in 2021. **With regard to the business sector**, self-financing for institutions contributed 63.5% of business sector funding, while 16.8% was funded by the government, and 14.4% by the local business sector. Other national sources accounted for 0.1%, and foreign financing sources accounted for 5.2%.

**At the government sector level**, self-financing for institutions contributed 53.1% of expenditure on R&D, while the government accounted for 42.5%, other national sources contributed 3.4%. The foreign funding provided approximately 1% of total expenditure, while financing the local business sector's share was 0.0%.

**At the level of the higher education sector**, self-financing for institutions contributed 92.2% of R&D funding sources, and the government funded 3.6%, while other national sources (non-profit organizations) contributed 3.9%. The foreign funding represented 0.1% of total expenditure in the higher education sector, while local business sector and foreign sources contributed about 0.2% (Figure 10).

Figure 10: Percentage distribution (%) of R&D funding sources by sector and type of source, 2021



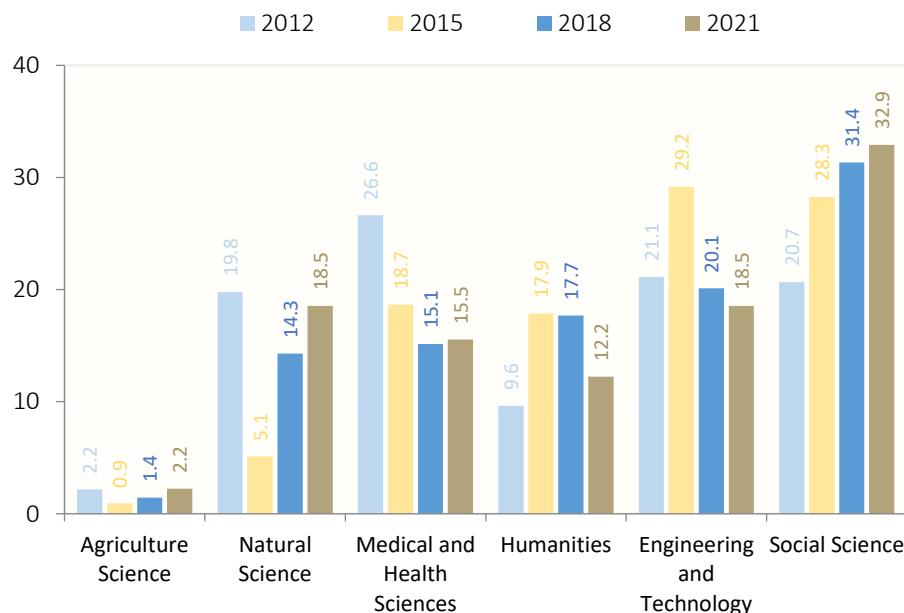
## 2.4 GERD by Sector and Field of Research

According to the results of R&D expenditure by field of research (Figure 11), social sciences accounted for the highest share of R&D expenditure by 32.9% in 2021, followed by engineering, technology and natural sciences with 18.5% each, and then medical and health sciences with 15.5%. Then came humanities with 12.2%, and finally agricultural science with about 2.2%.

Expenditure on agricultural science increased by 56.6%, and expenditure on natural science by 29.7% in 2021, compared to 2018.

The expenditure on agricultural science, natural science, and medical and health sciences witnessed a varying decrease during the period (2012-2018), followed by an increase of 56.6%, 29.7%, and 2.6%, respectively, in 2021, compared to 2018. The expenditure on humanities increased by 83.8% during the period (2012-2018), and then decreased by 30.9% in 2021, compared to 2018. As for expenditure on engineering and technology, it witnessed a continuous decline in all years, reaching 7.7% in 2021, compared to 2018. With regard to expenditure on R&D in the field of social science, it witnessed a fluctuating growth in all years, amounting to 51.7% during the period (2012-2018), and finally reached 5% in 2021, compared to 2018.

**Figure 11: Percentage distribution (%) of expenditure on R&D by field of research, (2012-2021)**



With respect to expenditure on R&D by sector, Figure 12 below shows the relative distribution of expenditure by sector for each field within the same sector. The results indicate the following:

**At the business level**, the highest share of expenditure was for engineering and technology at 58.9%, followed by natural science at 15.4%, compared to 14% for social science, 8.5% for agricultural science and 2.6% for medical and health sciences, while the lowest funding rate was for humanities at 0.6%.

The share of expenditure on agricultural science increased by 100% during the period (2012-2018) and again increased by 24.9% in 2021, compared to 2018. The expenditure on natural science and social science decreased during the period (2012-2018), and then increased by 37.3% and 29.2%, respectively in 2021, compared to 2018. The share of expenditure on engineering and technology increased by 51.4% and on humanities by 133.9% during the period (2012-2018), after which it decreased by 5% and 75%, respectively in 2021, compared to 2018. The expenditure on medical and health sciences continued to decline in all years to reach 61.2% in 2021.

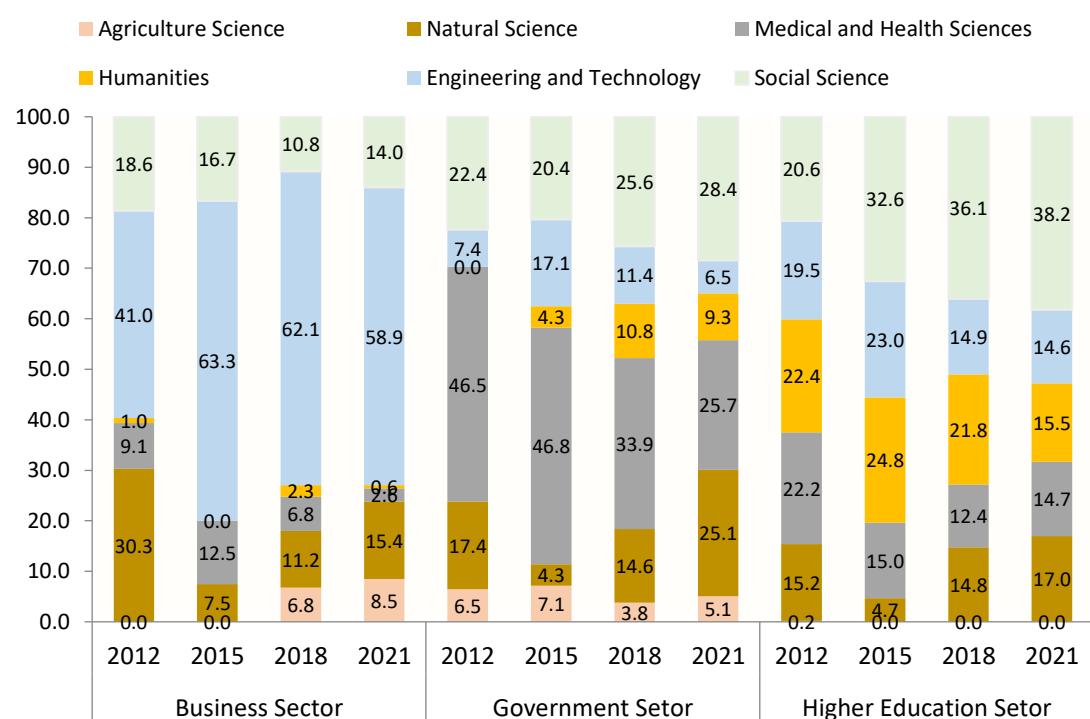
**As for the government sector**, the highest expenditure was on social sciences and medical and health sciences, accounting for 28.5% and 25.7%, respectively. The expenditure on natural science accounted for 25.1%, humanities for 9.3%, engineering and technology for 6.5% and agricultural science for 5.1%.

The share of expenditure on humanities, engineering and technology, and social science increased by 100%, 54.9% and 14.7%, respectively during the period (2012-2018). However, it witnessed a decrease in the humanities by 13.9%, in engineering and technology by 42.7%, while it increased in social science by 10.9% in 2021, compared to 2018. The expenditure on agricultural science, natural science, and medical and health sciences decreased by 41.3%, 16.1% and 27.1%, respectively during the period (2012-2018), after which it increased in agricultural science by 33.1% and in natural sciences by 72.1%, while it remained low in medical and health sciences by 24.1% in 2021, compared to 2018.

**With regards to the higher education sector**, the largest expenditure was on social science at 38.2%, followed by natural science at 17%, humanities at 15.5%, medical and health sciences at 14.7% and engineering and technology at 14.6%, while expenditure on agricultural science was zero in the higher education sector.

The share of expenditure on social science increased by 74.9% during the period (2012-2018), after which it increased at a slower pace of only 5.9% in 2021, compared to 2018. The share of expenditure on all other fields decreased during the period (2012-2018), after which it witnessed an increase in medical and health sciences and natural science by 18.2% and 15%, respectively in 2021, compared to 2018. However, it decreased in humanities, and engineering and technology by 28.8% and 2.5%, respectively in 2021, compared to 2018. No expenditure was recorded on agricultural science.

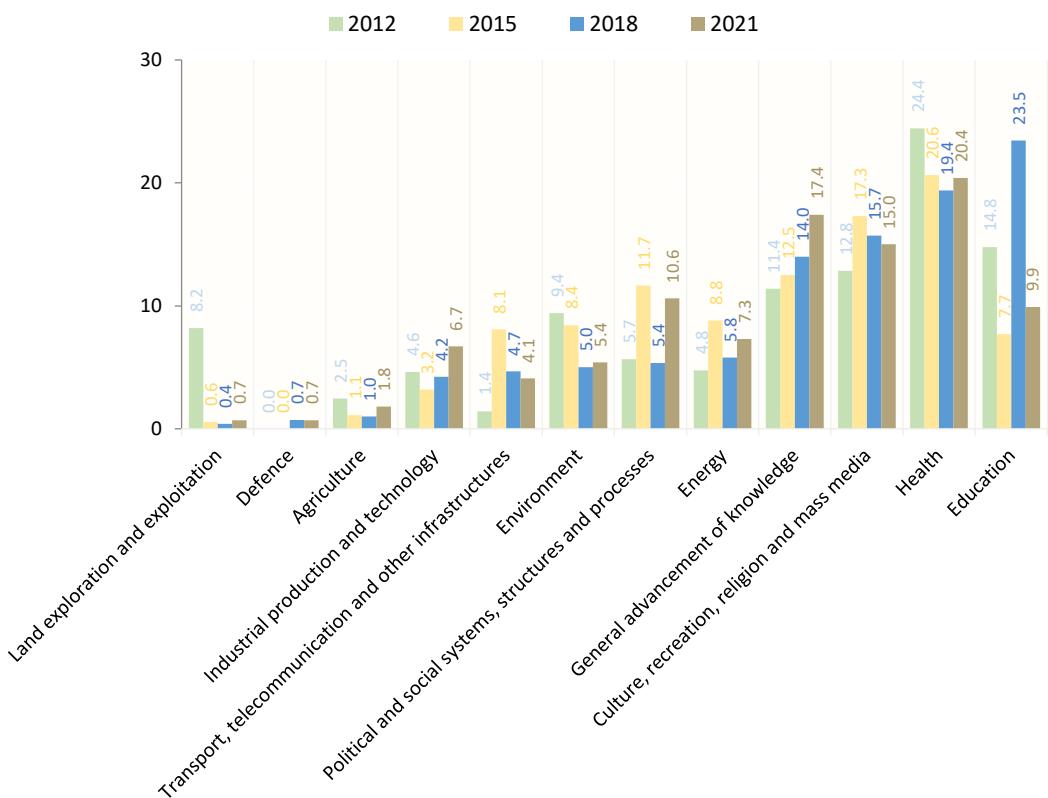
Figure 12: Percentage distribution (%) of R&D expenditure by sector and field of research, (2012-2021)



## 2.4 GERD by Socio-Economic Objectives

There are 12 socio-economic objectives for GERD. The results of GERD by socio-economic objectives (Figure 13) indicate that the highest percentage of expenditure was on “**health**” at 20.4% of total expenditure in 2021, followed by “**general advancement of knowledge**” at 17.4%. “**Culture, entertainment, religion and media**” came in third at 15%, followed by expenditure on “**political and social systems, structures and processes**” at 10.6%. “**Education**” ranked fifth at 9.9%, followed by “**energy**” at 7.3%, and then “**industrial production and technology**” at 6.7%, “**the environment**” at 5.4% and “**transport, communications and other infrastructure**” at 4.1%. At the bottom of the list came “**agriculture**”, “**defence**” and “**land exploration and exploitation**” at 1.8%, 0.7% and 0.7%, respectively in 2021.

Figure 13: Percentage distribution (%) of expenditure on R&D by socio-economic objectives in the State of Qatar, (2012-2021)



When comparing the results, we find that the expenditure increased on five objectives, where “**transport, communications and other infrastructure**” increased more than double by 229.9%, and “**education**”, “**general advancement of knowledge**”, “**culture, entertainment, religion and media**” and “**energy**” increased by 58.7%, 22.8 %, 22.2% and 21.7%, respectively during the period (2012-2018). However, expenditure on other objectives decreased during the same period (Figure 13).

The expenditure on eight objectives increased in varying proportions as follows: “**political and social systems, structures and processes**” (97.8%), “**agriculture**” (79.9%), “**land exploration and exploitation**” (76.2%), “**industrial production and technology**” (58.5%), “**energy**” (25.9%), “**general advancement of knowledge**” (24.3%), “**the environment**” (7.8%) and “**health**” (5.2%). However, the expenditure on other objectives decreased in 2021, compared to 2018 (Figure 13).

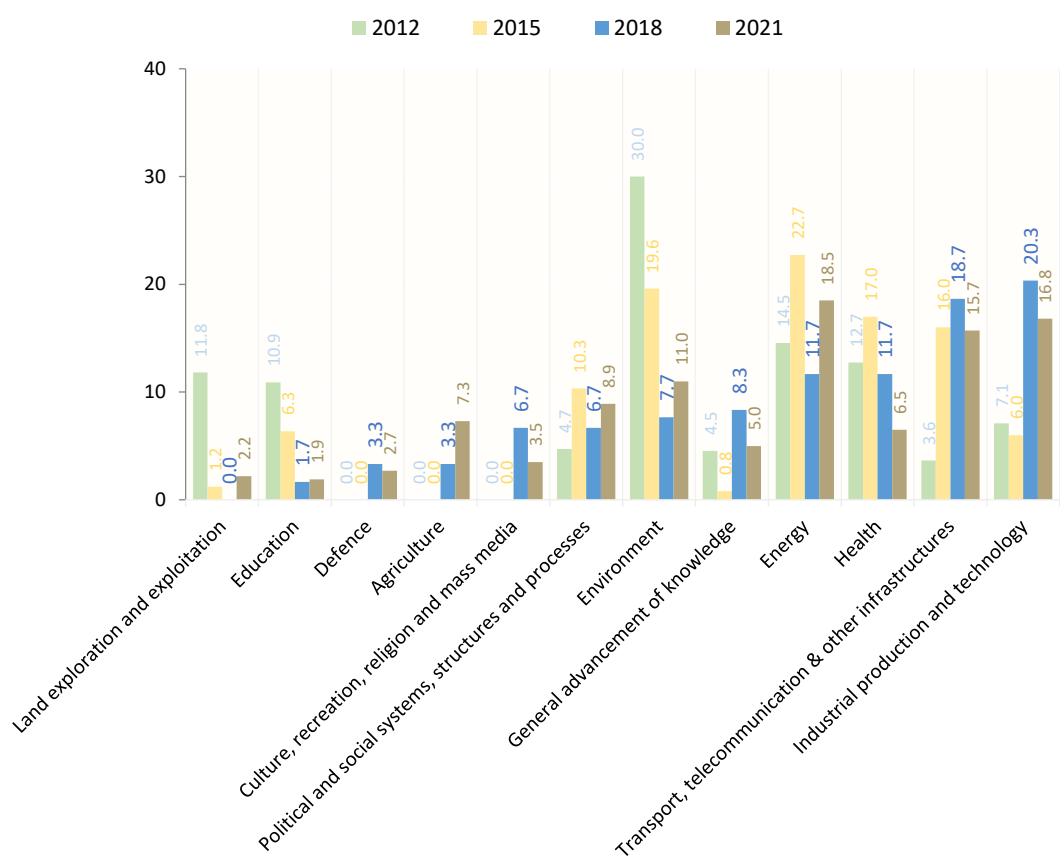
At the sectoral level, the results indicate that expenditure varied from one sector to another, due to the different attention and care to socio-economic objectives from one sector to another.

**For the business sector,** the GERD results by socio-economic objectives (Figure 14) indicate that the highest share of expenditure was on "**energy**" at 18.5% of total expenditure in 2021, followed by "**industrial production and technology**" at 16.8%, "**transport, communications and other infrastructures**" at 15.7% and "**the environment**" at 11%. "**Political and social systems, structures and processes**" ranked fifth with 8.9%, followed by "**agriculture**" in sixth place with 7.3%, "**health**" with 6.5%, "**general advancement of knowledge**" with 5% and "**culture, education, religion and media**" with 3.5%. At the bottom of the list came expenditure on "**defence**", "**land exploration and exploitation**" and "**education**" at 2.7%, 2.2%, and 1.9%, respectively.

During the period (2012-2018), the expenditure increased on seven objectives; namely: "**transport, communications and other infrastructure**" (413.3%), "**industrial production and technology**" (186.8%), "**culture, entertainment, religion and media**", "**defence**" and "**agriculture**" by 100% each (compared to zero expenditure in 2012), "**general advancement of knowledge**" (83.3%) and "**political and social systems, structures and processes**" (41%). However, the expenditure on other objectives declined during the same period, as shown in Figure 14.

The R&D expenditure by socio-economic objectives increased on six objectives in varying proportions; namely: "**agriculture**" (119%), "**land exploration and exploitation**" (100%), "**energy**" (58.6%), "**the environment**" (43.5%), "**political and social systems, structures and processes**" (33.5%) and "**education**" (14%). However, the expenditure on other objectives declined during the same period, as shown in Figure 14.

Figure 14: Percentage distribution (%) of business sector's R&D expenditure by socio-economic objectives, (2012-2021)

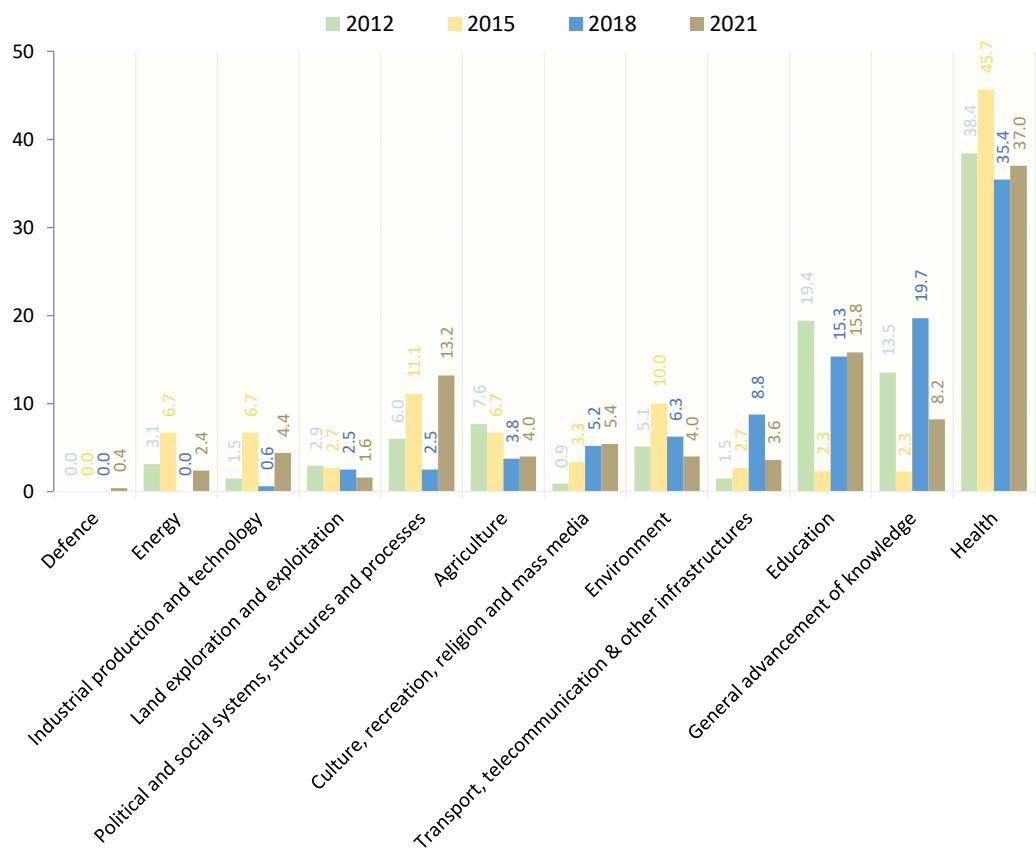


As for the government sector, the results of Figure 15 below indicate that the highest percentage of expenditure was on "health" with 37% of total expenditure in 2021, followed by "education" with 15.8%. "Political and social systems, structures, processes" came in third with 13.2%, followed by "general advancement of knowledge" with 8.2%. "Culture, education, religion and media" ranked fifth with 5.4 %, and "Industrial production and technology" ranked sixth with 4.4%, followed by "agriculture" and "the environment" with 4% each, and "transport, communications and other infrastructure" with 3.6%, and "energy" with 2.4%. "Land exploration and exploitation" and "defence" came in last with 1.6% and 0.4%, respectively.

During the period (2012-2018), the expenditure nearly quadrupled on "transport, communications and other infrastructure" by 495%, and on "culture, entertainment, religion and media" by 487.9%. It also increased on "general advancement of knowledge" and "the environment" by 45.5% and 22.1%, respectively. The expenditure on other objectives declined by varying percentages during the same period (Figure 15).

Subsequently, the expenditure on eight objectives increased significantly; namely: "Industrial production and technology" (631%), "political and social systems, structures and processes" (428%), "defence" and "energy" (100% each), "agriculture" (6.7%), "health" (4.4%), "culture, entertainment, religion and media" (4.1 %) and "education" (3%) in 2021, compared to 2018. The expenditure on other objectives declined by varying percentages during the same period (Figure 15).

**Figure 15: Percentage distribution (%) of the government sector's R&D expenditure by socio-economic objectives, (2012-2021)**

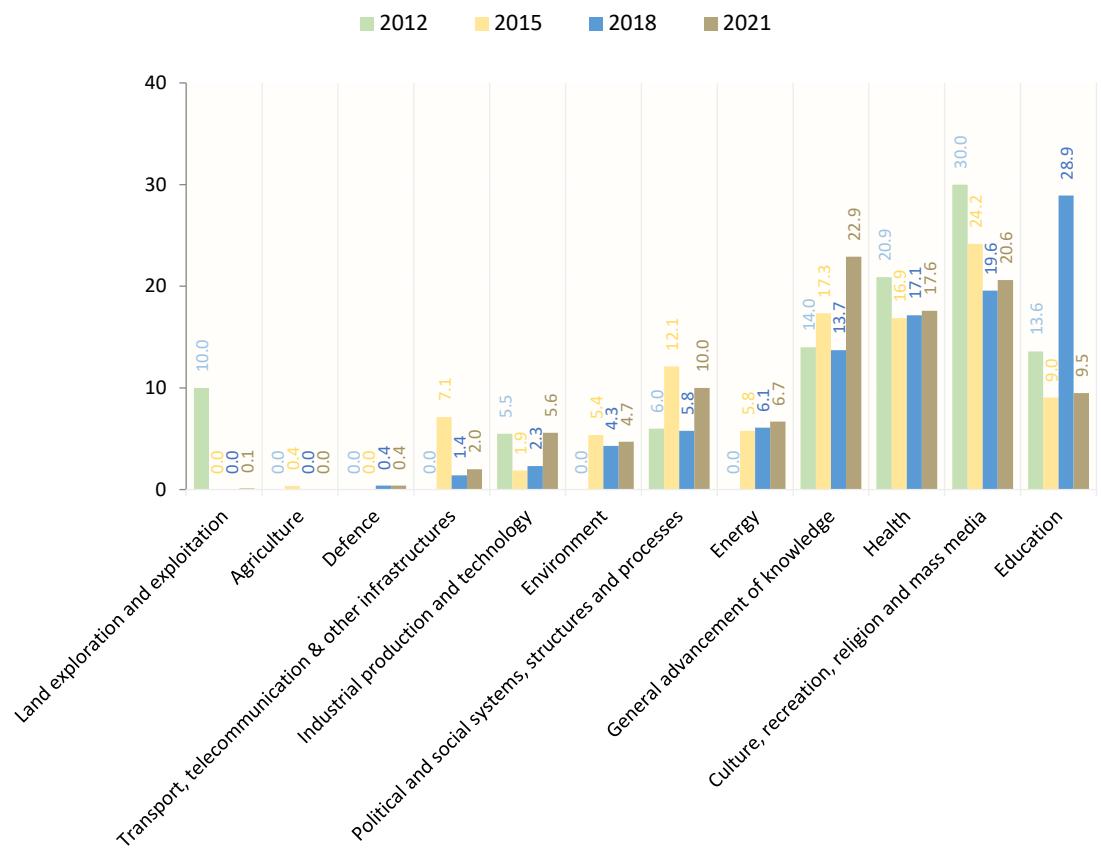


With regard to the higher education sector, the results of Figure 16 below indicate that the highest percentage of expenditure was on "general advancement of knowledge" with 22.9% of total expenditure in 2021, followed by "culture, education, religion and media" with 20.6%. "Health" came in third place with 17.6%, while "political and social systems, structures and processes" in fourth place with 10%, followed by "education" with 9.5%, "energy" with 6.7%, "industrial production and technology" with 5.6%, "the environment" with 4.7% and "transport, communications and other

**infrastructure**" with 2%. Other objectives ("land exploration and exploitation", "agriculture" and "defence") came in last with 0.5% each.

During the period (2012-2018), "education" increased by more than 112.6%, while four objectives increased by 100%; namely: "defence", "transport, communications and other infrastructure", "the environment" and "energy". However, expenditure on other objectives decreased by varying percentages during the same period (Figure 16).

Figure 16: Percentage distribution (%) of the higher education sector's R&D expenditure by socio-economic objectives in Qatar, (2012-2021)



The higher education sector's R&D expenditure increased on nine objectives with varying percentages; namely: "industrial production and technology" (142.8%), "land exploration and exploitation" (100%), "general advancement of knowledge" (67.1%), "transport, communications and other infrastructure" (42.9%), "energy" (10%), "the environment" (9.6%), "culture, entertainment, religion and media" (5.4%), "health" (2.6%) and "political and social systems, structures and processes" (73.4) in 2021, compared to 2018. There was no change in expenditure on "agriculture" and "defence", as the percentage change in expenditure was zero. On the other hand, the expenditure on "education" declined by 67.1% during the same period.

# **Chapter Three**

## **R&D Workforce**

This chapter addresses R&D personnel by sector in terms of their occupations, scientific qualifications, nationalities and gender, as well as showing the full-time equivalents by field of science, in addition to a comparison between sectors and the evolution of their workforce.

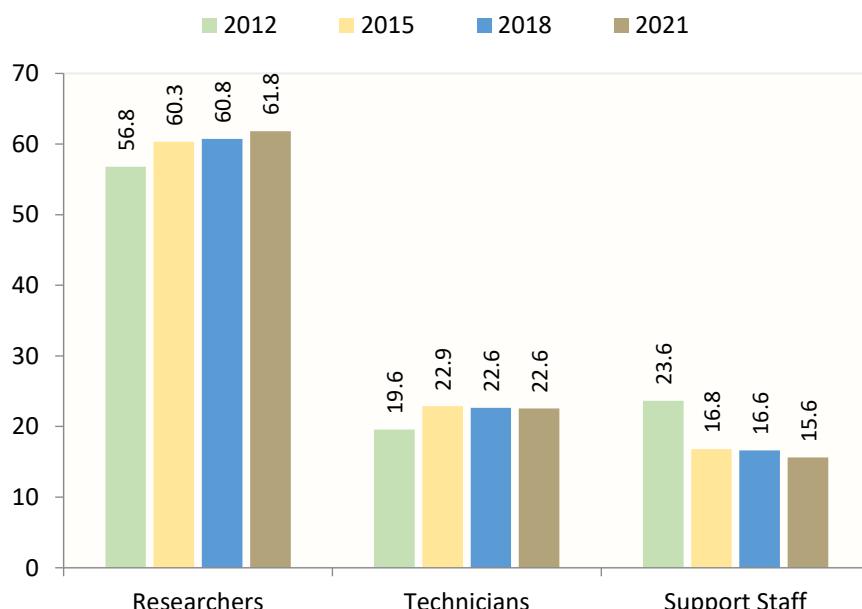


### 3.1 R&D Personnel by Occupation and Sector

The number of R&D personnel increased from 3,038 in 2012 to 4,720 in 2015, and again increased from 5,111 in 2018 to 5,628 in 2021. Figure 17 below shows the percentage distribution of R&D personnel by occupation and evolution of that distribution during the period of study (2012-2021). The results indicate that R&D personnel by occupation are distributed in varying proportions, where researchers represented 61.8%, technicians 22.6% and support staff 15.6% in 2021. The number of researchers and technicians increased by 7% and 15.6%, respectively during the period (2012-2018), whereas the number of support staff decreased by 29.7% in same period.

The number of researchers increased by 1.8% in 2021, compared to 2018, and the number of technicians and support staff decreased slightly by 0.3% and 6.1%, respectively in 2021 compared to 2018.

Figure 17: Percentage distribution (%) of R&D personnel by occupation, (2012-2021)



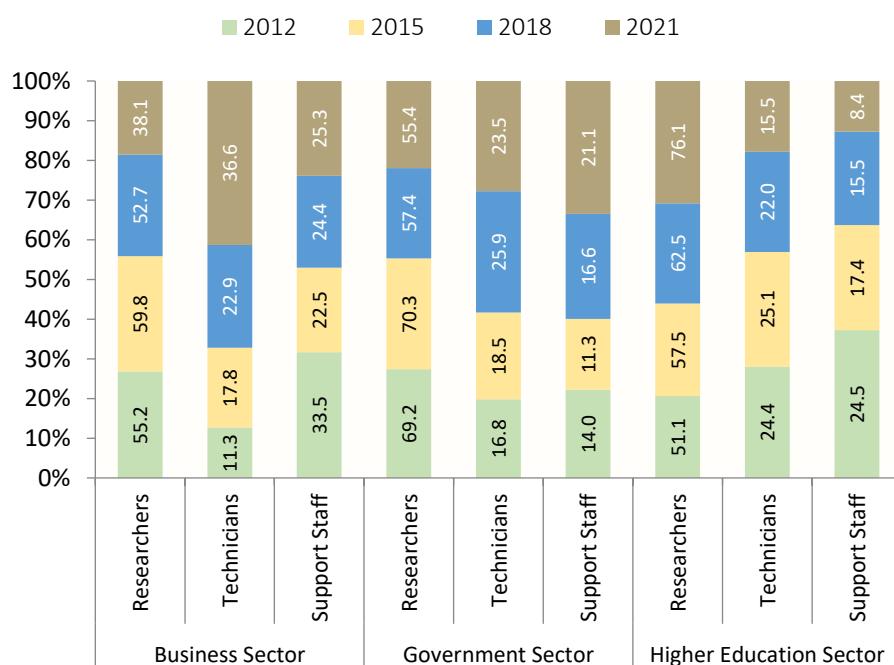
**At the level of sector**, Figure 18 below shows the percentage distribution of R&D personnel by sector, occupation and evolution.

**According to results at the level of business sector**, researchers made up 38.1% in 2021, compared to 36.6% for technicians and 25.3% for support staff. The number of technicians in this sector doubled reaching 103.1%, while the number of support staff decreased by 27.2% during the period (2012-2018). The number of technicians and support staff increased by 59.6%, and 3.5%, respectively in 2021, compared to 2018, while the number of researchers decreased by 27.6% in the same year.

**As for the government sector**, researchers constituted 55.4%, technicians 23.5% and support staff 21.1%. The number of technicians increased by 53.9% and the number of support staff increased by 19%, while the number of researchers decreased by 17% during the period (2012-2018). Subsequently, the number of researchers and technicians decreased by 3.6% and 9.2%, respectively in 2021, compared to 2018, while the number of support staff increased by 26.7% in the same year.

**At the level of the higher education sector**, researchers constituted 76.1%, technicians 15.5%, and support staff 8.4% in 2021 (excluding postgraduate students). The number of researchers increased by 22.3%, while the number of technicians and support staff decreased by 9.9% and 36.6%, respectively during the period (2012-2018). The number of postgraduate students increased by 132.5% during the same period. Later on, the number of researchers increased by 21.8% in 2021, compared to 2018, while the number of technicians and support staff decreased by 29.4% and 46.1%, respectively during the same period. The number of postgraduate students in the higher education sector increased by 25.7% during the same period.

Figure 18: Percentage distribution (%) of R&D personnel by sector and occupation, (2012-2021)



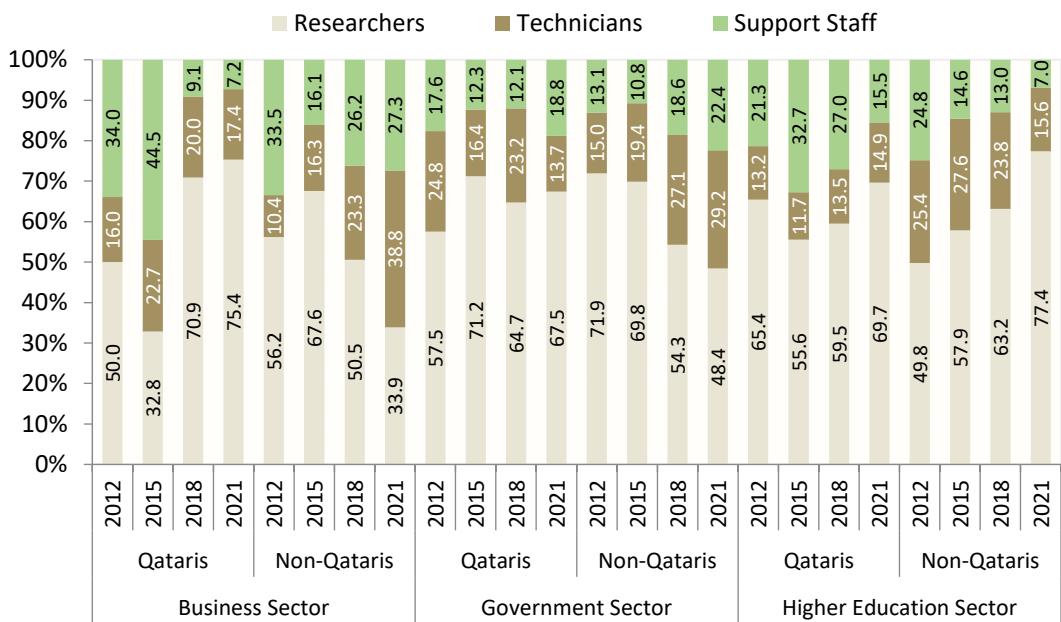
### 3.2 R&D Personnel by Sector, Occupation and Nationality

Figure 19 below shows the percentage distribution of R&D personnel by sector, occupation and nationality and the evolution of their distribution during the period of study. The personnel results by nationality indicate the following:

**For Qataris:** researchers, technicians and support staff accounted for 69.4%, 14.7% and 16%, respectively of total Qatari personnel in 2021. The number of Qatari researchers increased by 5.3%, while the number of technicians and support staff decreased by 12.9% and 3.1%, respectively during the period (2012-2018). Later on, the number of researchers increased by 13.1%, while the number of technicians and support staff decreased by 9% and 29.2%, respectively in 2021, compared to 2018.

**For non-Qataris:** researchers, technicians and support staff accounted for 60%, 24.5% and 15.5%, respectively of total non-Qatari personnel in 2021. The number of non-Qatari researchers and technicians increased by 7.2% and 22.4%, respectively, while the number of support staff decreased by 35.8% during the period (2012-2018). Later on, the number of support staff and technicians increased by 1.9% and 1.5%, respectively, while the number of researchers decreased by 1.1% in 2021, compared to 2018.

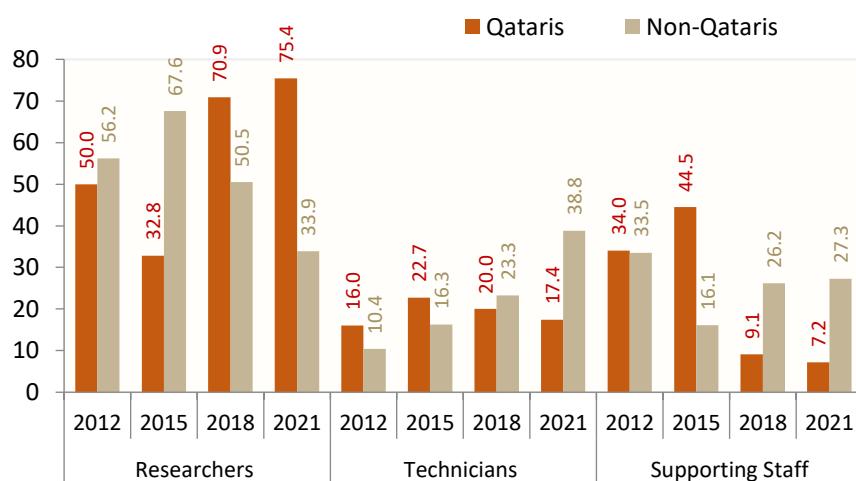
Figure 19: Percentage distribution (%) of R&D personnel by sector, nationality and occupation, (2012-2021)



**For the business sector:** Figure 19a shows the distribution of the number of R&D personnel by occupation and nationality, and the evolution of their distribution during the period (2012-2021). Qatari researchers constituted 75.4%, technicians 17.4% and support staff 7.2% of total Qatari personnel in 2021. The number of Qatari researchers and technicians increased by 41.8% and 24.7%, respectively, whereas the support staff decreased by 73.2% during the period (2012-2018). Later on, the number of Qatari researchers increased by 6.3%, while the number of technicians and support staff decreased by 13% and 20.3%, respectively in 2021, compared to 2018.

On the other hand, the number of non-Qatari technicians increased by 124.7%, versus a decrease in the number of researchers by 10.1%, and support staff by 21.6% during the period (2012-2018). Later on, the number of technicians increased by 66.6% and the number of support staff by 4.3%, while the number of researchers decreased by 32.9% in 2021, compared to 2018.

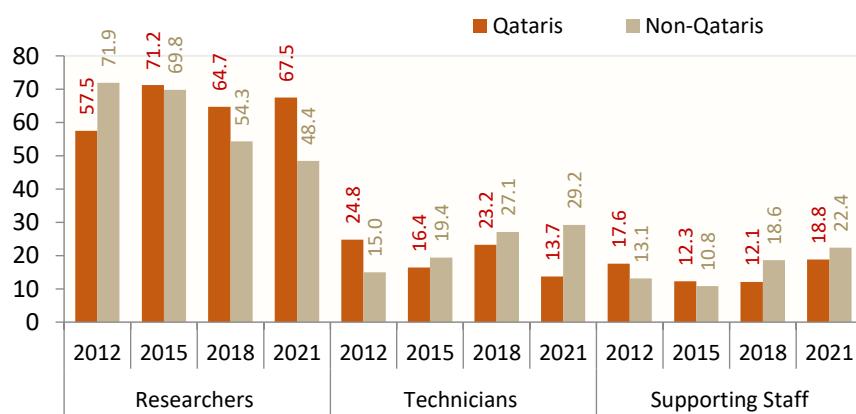
Figure 19a: Number of R&D personnel in the business sector by occupation and nationality (2012-2021)



**For the government sector:** Figure 19b shows the distribution of the number of R&D personnel by occupation and nationality, and the evolution of their distribution during the period (2012-2021). The researchers constituted 67.5%, technicians 13.7% and support staff 18.8% of total Qatari R&D personnel in 2021. The number of Qatari researchers increased by 12.5%, while the number of support staff decreased by 31.7%, and technicians by 6.5% during the period (2012-2018). Later on, the number of Qatari researchers increased by 4.2%, and the number of support staff by 56.2%, while the number of technicians decreased by 40.9%, in 2021, compared to 2018.

On the other hand, the number of non-Qatari technicians witnessed an increase by 80.9%, and support staff by 41.8%, versus a decrease in the number of researchers by 24.5% during the period (2012-2018). Later on, the number of technicians increased by 7.8% and support staff by 20.3%, while the number of researchers decreased by 10.9% in 2021, compared to 2018.

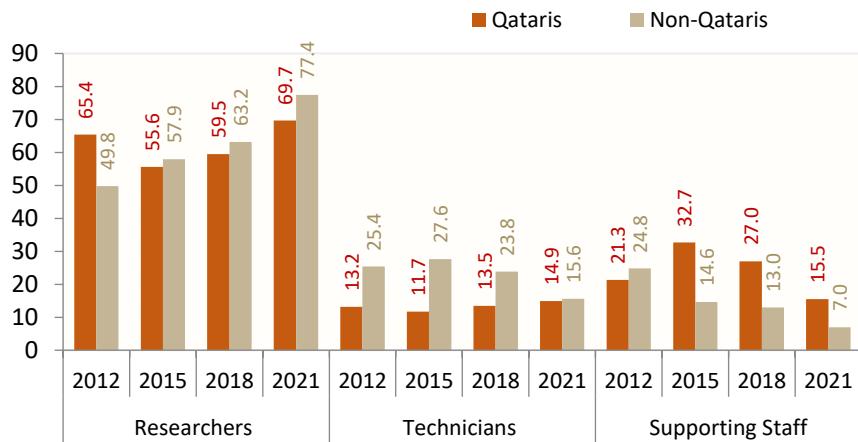
Figure 19b: Number of R&D personnel in the government sector by occupation and nationality, (2012-2021)



**For the higher education sector:** Figure 19c shows the distribution of the number of R&D personnel by occupation and nationality, and the evolution of their distribution during the period (2012-2021). The researchers accounted for 69.7%, technicians 14.9% and support staff 15.5% of total Qatari R&D personnel in 2021. The Qatari researchers decreased by 9.1%, while Qatari support staff increased by 26.7%, and Qatari technicians by 2% during the period (2012-2018). Later on, the number of Qatari researchers increased by 17.1% and Qatari technicians by 10%, while the number of support staff decreased by 42.7% in 2021, compared to 2018.

On the other hand, non-Qatari researchers increased by 27%, while technicians and support staff decreased by 6.3%, and 47.7%, respectively, during the period (2012-2018). Later on, researchers increased by 22.5%, while technicians and support staff decreased by 34.5% and 46.4% in 2021, compared to 2018.

Figure 19c: Number of R&D personnel in the higher education sector by occupation and nationality, (2012-2021)



### 3.3 R&D Personnel by Educational Qualification, Occupation and Nationality

**With regard to educational qualification:** Figure 20 below shows the relative distribution of R&D personnel by educational qualification, with Ph.D. holders representing nearly two fifths (39.6%) and master's degree holders about one seventh (15.2%), while higher diploma holders constituted one out of every 14 R&D personnel (1.2%), and more than two-fifths of them were holders of bachelor's degree or less (44%). As for gender, the differences were significant between males and females. At the doctoral level, it was 22 percentage points in favor of males at the expense of females, but at the master's and bachelor's degrees or less, it was in favor of females with a difference of about 9 and 13 percentage points, respectively.

Figure 20: Percentage distribution (%) of R&D personnel by educational qualification, 2021

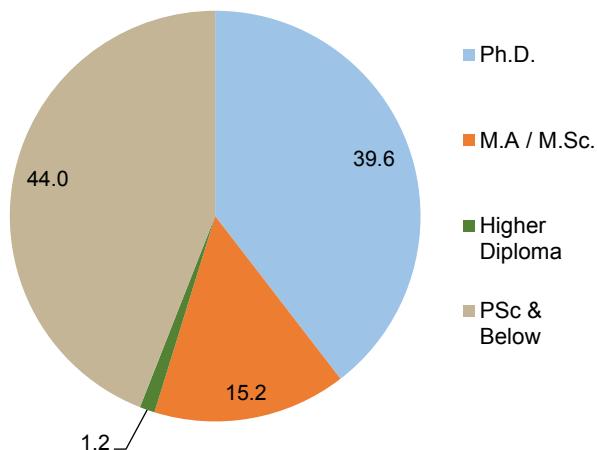
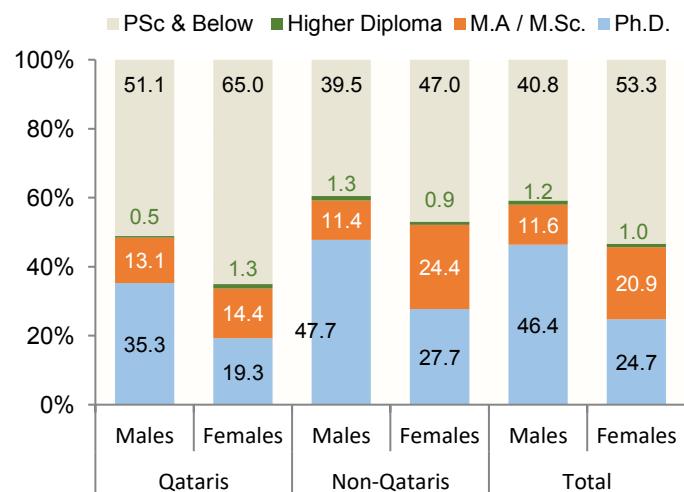


Figure 21 below shows the relative distribution of educational qualification by nationality and gender. **For Qataris**, PhD and master's holders represented 25.1% and 13.9% of total degree holders, respectively. Higher diploma holders constituted 1%, and holders of bachelor's degree or less represented about three-fifths (59.9%) of total Qatari degree holders. However, there were differences between Qatari graduates; mainly, a difference of about 16 percentage points in favor of male PhD holders at the expense of their female counterparts, and a difference of about 14 percentage points in favor of female holders of bachelor's degree or less at the expense of their male counterparts.

The number of holders of PhD and bachelor's degrees or less increased by 17.2% and 10.5%, respectively, while the number of master's and higher diploma holders decreased by 39.3% and 26.7%, respectively, of total Qataris in 2021 compared to 2018.

**For non-Qataris**, PhD holders represented 43.2%, master's degree holders 15.5%, higher diploma holders 1.2% and holders of bachelor's degree or less 40% of total degree holders. However, there were differences between non-Qatari graduates; mainly, about 20 percentage points in favor of male PhD holders at the expense of their female counterparts, a difference of 13 percentage points in favor of female master's degree holders, and a difference of 7.5 percentage points in favor of female bachelor's degree holders at the expense of their male counterparts. The number of holders of bachelor's degree or less and the number of PhD holders increased by 29.1% and 2%, respectively, while the number of non-Qatari holders of other degrees decreased in 2021, compared to 2018 (Figure 21).

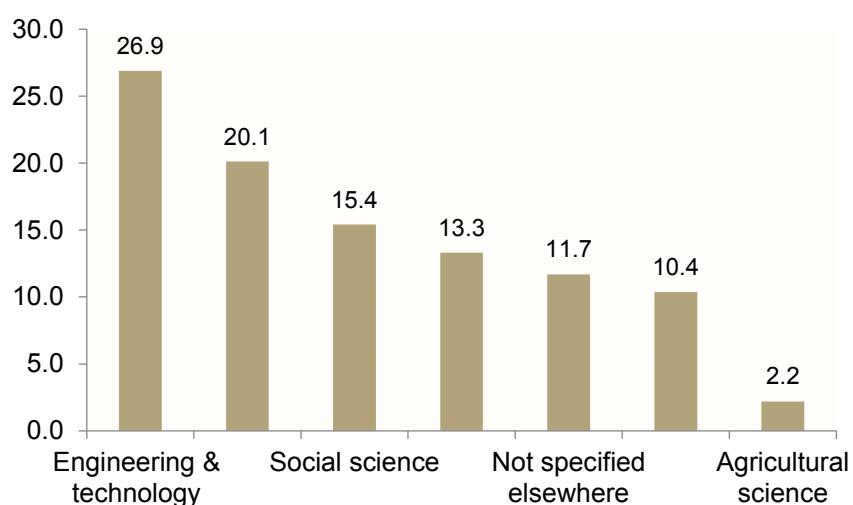
Figure 21: Percentage distribution (%) of R&D Personnel by nationality, gender and educational qualification, 2021



### 3.4 R&D Personnel by Field of Science, Nationality and Gender

Figure 22 below shows the relative distribution of R&D personnel by field of science (scientific disciplines). The results indicate that the most important scientific disciplines were engineering and technology by 26.9%, followed by social science by 20.1%, medical and health sciences by 15.4%, natural science by 13.3%, not specified elsewhere by 11.7%, humanities by 10.4%, and agricultural science by 2.2%.

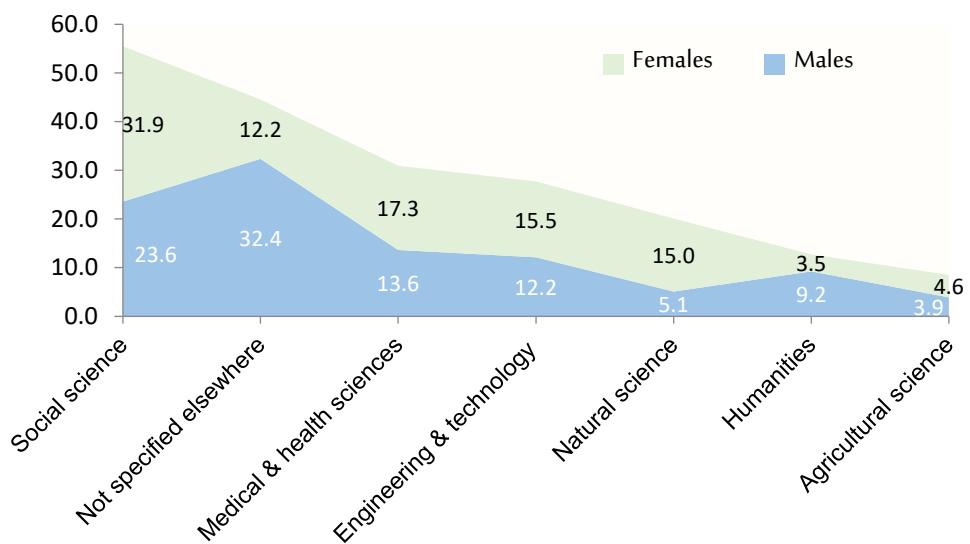
Figure 22: Percentage distribution (%) of R&D personnel by field of science, 2021



For R&D personnel by gender, Figure 22a below shows the distribution of Qataris by gender and field of science. The results indicate that R&D personnel were concentrated in the field of social sciences, with a percentage of 28.9%, followed by engineering and technology 19.5%, natural science 16%, humanities 14.3%, medical and health sciences 11.4%, agricultural science 4.4%, and finally the unspecified field of science 5.6%.

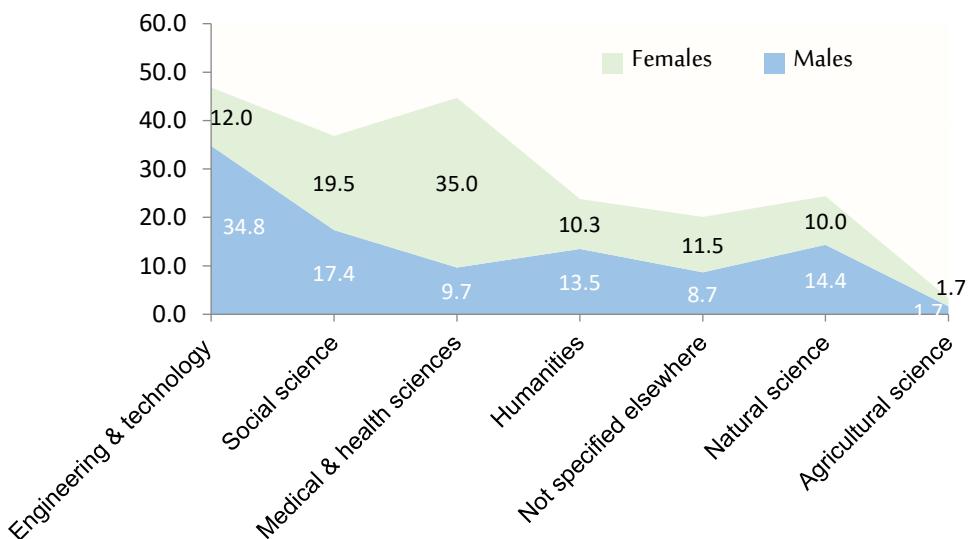
When comparing results by gender, there were significant differences between males and females by about 27 percentage points in favor of females at the expense of males. The proportion of females was higher than that of males in the following fields: social sciences and natural sciences, medical and health sciences, humanities and agricultural science. The proportion of males was higher than that of females in engineering and technology, and in fields not specified elsewhere.

Figure 22a: Percentage distribution (%) of Qatari R&D personnel by field of science and gender, 2021



**With regard to non-Qatari R&D personnel,** Figure 22b below shows their distribution by field of science and gender. The results indicate that R&D personnel were concentrated in the field of engineering and technology, with a percentage of 28.7%, followed by social sciences 17.9%, medical and health sciences 16.4%, natural sciences 12.6%, humanities 9.4%, agricultural science 1.7%, and finally the unspecified field of science 13.2%.

Figure 22b: Percentage distribution (%) of non-Qatari R&D personnel by field of science and gender, 2021



When comparing the results by gender, there were significant differences between males and females by about 47 percentage points in favor of males at the expense of females. The proportion of males was higher than that of females in three fields: engineering and technology, natural sciences, and in fields not specified elsewhere, as shown in Figure 22b above.

### 3.5 Full-Time Equivalent of R&D Personnel by Sector, Occupation and Nationality

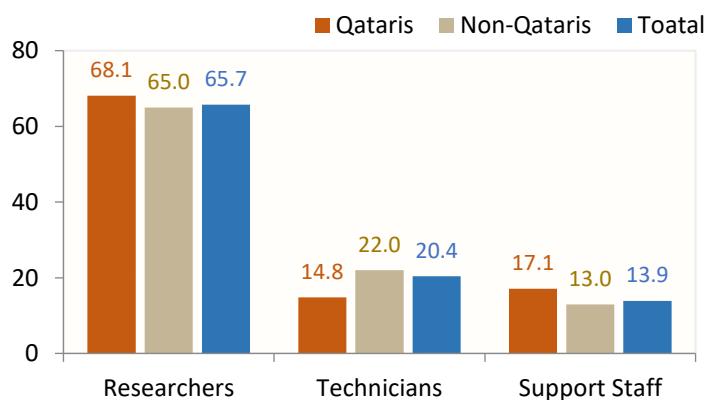
The results of Figure 23 below indicate that the full-time equivalent R&D personnel by occupation and nationality was distributed in varying proportions, where researchers represented 65.7% and technicians 20.4% versus 13.9% for support staff in 2021.

The full-time equivalent researchers increased significantly by 36.5%, while technicians and support staff decreased by 38.4% and 25.8%, respectively in 2021, compared to 2018.

For Qataris, researchers (68.1%) and support staff (17.1%) accounted for the highest share, while for non-Qataris, researchers (65%) and technicians (22%) accounted for the highest share in 2021.

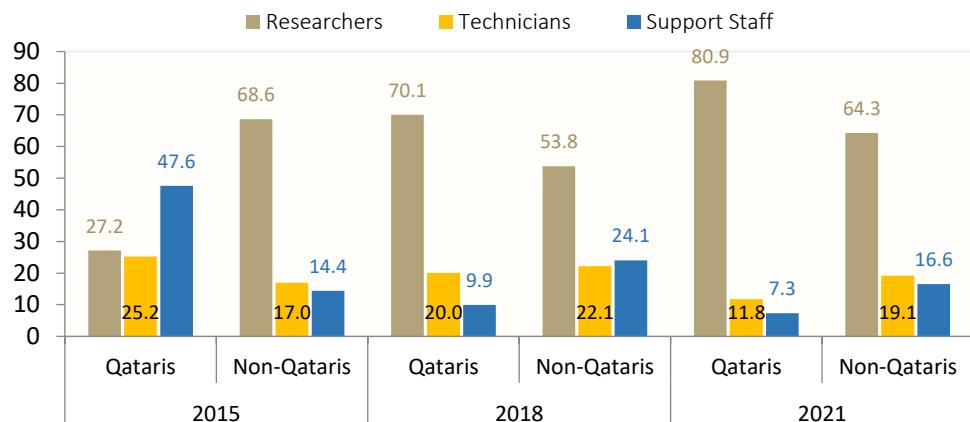
**At the nationality level,** researchers, technicians, and support staff accounted for 68.1%, 14.8% and 17.1%, respectively, of total Qataris, compared to 65%, 22%, and 13%, respectively for non-Qataris, with a higher percentage of Qatari researchers and support staff compared to their non-Qatari counterparts, with a difference of about 3 and 4 percentage points, respectively in favor of Qataris as shown in Figure 23 below.

Figure 23: : Percentage distribution (%) of FTE R&D personnel by occupation, 2021



**At the level of the business sector by nationality,** Figure 23a shows the distribution of full-time equivalents by nationality, and the results for Qataris indicate that researchers, technicians and support staff constituted 80.9%, 11.8% and 7.3%, respectively, of total Qataris, compared to 64.3%, 19.1%, and 16.6%, respectively of total non-Qataris, with an increase of 17 percentage points in favor of Qatari researchers, while the percentage of Qatari technicians and support staff compared to non-Qataris decreased by about 7 and 9 percentage points, respectively in favor of non-Qataris, as shown in Figure 23a below.

Figure 23a: Percentage distribution (%) of FTE R&D personnel in the business sector by nationality and occupation, (2015-2021)



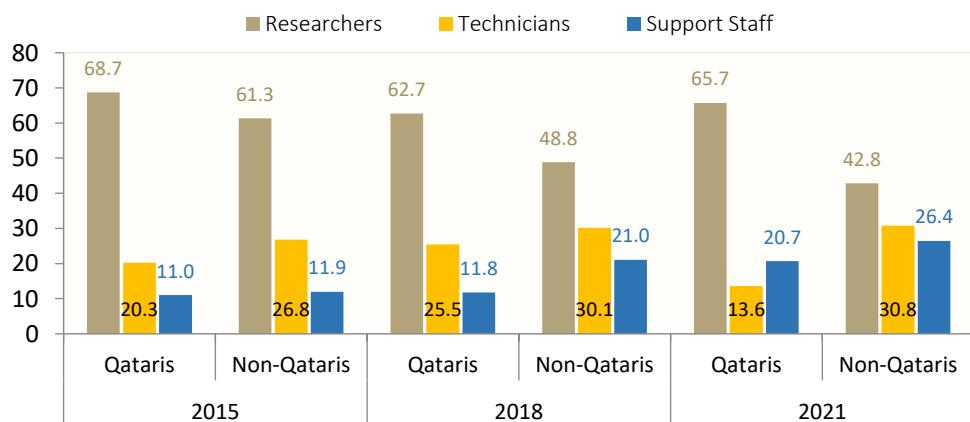
**For Qatarsis,** FTE researchers in the business sector increased by 158%, while FTE technicians and support staff decreased by 20.7% and 79.2%, respectively of total Qatarsis during the period (2015-2018). Later on, the number of researchers increased by 15.4% in 2021, compared to 2018. However, the proportion of Qatari technicians and support staff decreased by 41.2% and 25.9%, respectively in the same year.

**For non-Qatarsis,** FTE technicians and support staff increased by 30.6% and 66.9%, respectively, while FTE researchers decreased by 21.6% of total non-Qatarsis during the period (2015-2018). Later on, the number of researchers increased by 19.6%, while the number of technicians and support staff decreased by 13.7% and 31.1%, respectively in 2021, compared to 2018.

**At the government sector level by nationality,** the ratio of Qatari FTE researchers, technicians and support staff was 65.7%, 13.6% and 20.7%, respectively, compared to 42.8%, 30.8% and 26.4% for non-Qatarsis following the same order (Figure 23b).

The ratio of Qatari researchers compared to their non-Qatari counterparts increased by about 23 percentage points in favor of Qatarsis, while the ratio of Qatari technicians and support staff compared to their non-Qatari counterparts decreased by about 17 and 6 percentage points, respectively in favor of non-Qatarsis as shown in Figure 23b below.

Figure 23b: Percentage distribution (%) of FTE R&D personnel in the government sector by nationality and occupation, (2015-2021)

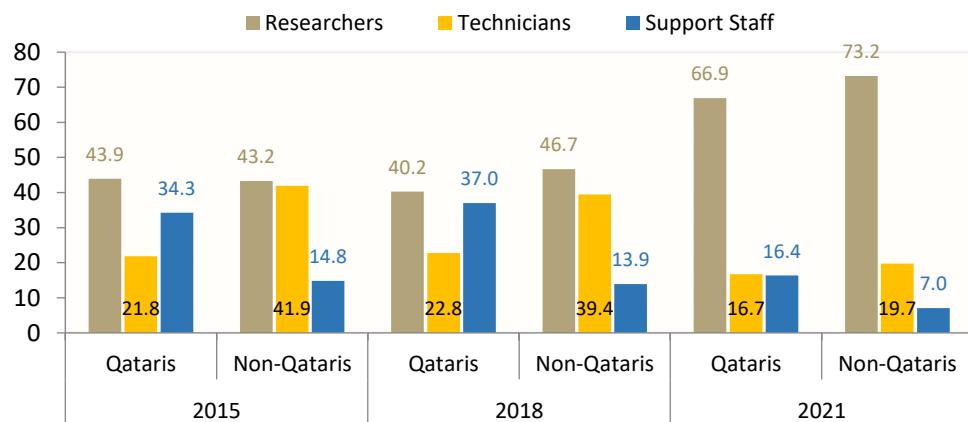


**For Qataris**, FTE technicians and support staff increased by 25.7% and 7.1%, respectively, while FTE researchers decreased by 8.7% of total Qataris during the period (2015-2018). Later on, researchers and support staff increased by 4.7% and 75.3%, respectively in 2021, compared to 2018, while technicians decreased by 46.6% in the same year.

**For non-Qataris**, FTE technicians and support staff increased by 12.6% and 76.4%, respectively, while FTE researchers decreased by 20.4% of total non-Qataris during the period (2015-2018). Later on, technicians and support staff maintained an increase at a slower pace by 2.1% and 25.5%, respectively in 2021, compared to 2018, versus a decline in researchers by 12.3% in the same year.

**At the level of the higher education sector by nationality**, Figure 23c shows the distribution of full-time equivalents by nationality. The results for Qataris indicate that researchers, technicians and support staff constituted 66.9%, 16.7% and 16.4%, respectively, of total Qataris, compared to 73.2%, 19.7%, and 7% of total non-Qataris following the same order, with an increase in the percentage of support staff among Qataris compared to non-Qataris by a difference of about 9 percentage points in favor of Qataris, while the percentage of researchers and technicians among Qataris compared to non-Qataris decreased by a difference of about 6 and 3 percentage points, respectively in favor of non-Qataris, as shown in Figure 23c below.

Figure 23C: Percentage distribution (%) of FTE R&D personnel in the higher education sector by nationality and occupation, (2015-2021)



**For Qataris**, FTE technicians and support staff increased by 4.5% and 7.8%, respectively, while FTE researchers decreased by 8.4% of total Qataris during the period (2015-2018). Later on, researchers increased significantly by 66.2%, while technicians and support staff decreased by 26.6% and 55.7%, respectively in 2021, compared to 2018.

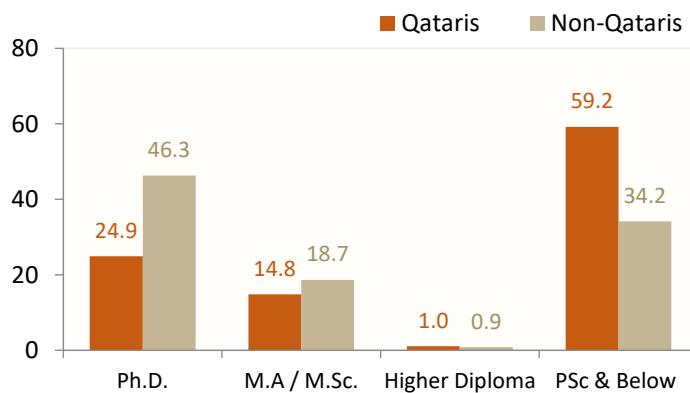
**For non-Qataris**, FTE researchers increased by 8%, while technicians and support staff decreased by 6% and 6.2%, respectively of total non-Qataris during the period (2015-2018). Later on, researchers maintained a significant increase of 56.8%, while technicians and support staff decreased by 49.9% and 49.3%, respectively in 2021, compared to 2018.

### 3.6 Full-Time Equivalent of R&D Personnel by Sector, Educational Qualification and Nationality

The results of Figure 24 below indicate that the full-time equivalent of R&D personnel by nationality and educational qualification is distributed in varying proportions, where PhD holders represented 41.5%, master's holders 17.8% and higher diploma holders 0.9%, compared to 39.8% for holders of a bachelor's degree or less in 2021.

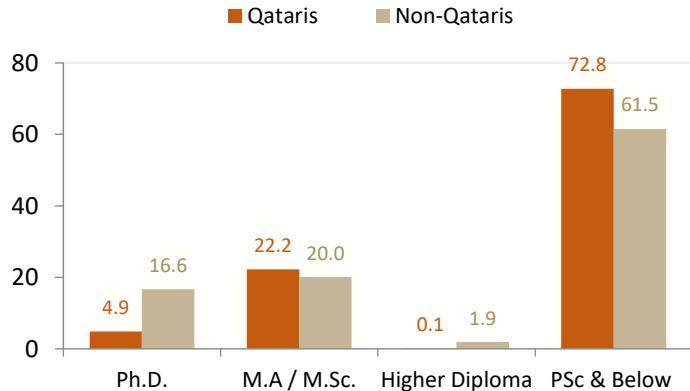
**At the nationality level,** Qataris holding PhD, master's, higher diploma and bachelor's degrees or less accounted for 24.9%, 14.8%, 1% and 59.2%, respectively. Whereas non-Qataris holding degrees following the same order were 46.3%, 18.7%, 0.9%, and 34.2%, respectively, with higher percentages for non-Qataris holding PhDs and masters compared to Qataris and significant differences in favor of non-Qataris (Figure 24).

Figure 24: Percentage distribution (%) of FTE R&D personnel by educational qualification and nationality, 2021



**At the level of the business sector,** the results of Figure 24a below indicate that holders of PhD, master's, higher diploma and bachelor's degree or less represented 4.9%, 22.2%, 0.1% and 72.8%, respectively for Qataris, compared to 16.6%, 20%, 1.9%, and 61.5% for non-Qataris, following the same order.

Figure 24a: Percentage distribution (%) of FTE R&D personnel in the business sector by educational qualification and nationality, 2021



**For Qataris,** the number of holders of bachelor's degree or less increased by 12.1%, while the number of PhD, master's and higher diploma holders decreased by 47.4%, 6.5%, and 95.2%, respectively in 2021, compared to 2018.

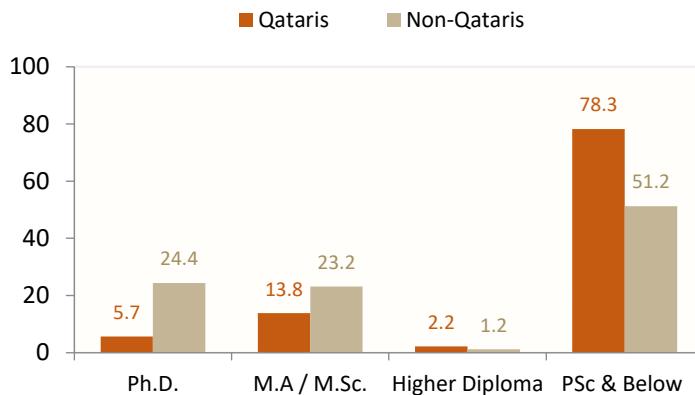
**For non-Qataris**, the number of PhD and master's degree holders increased by 25.7% and 8.8%, respectively in 2021, compared to 2018, while the number of holders of higher diploma and bachelor's degree or less decreased by 26.1% and 6.6%, respectively during the same period.

**At the level of the government sector**, the results of Figure 24b below indicate that holders of PhD, master's, higher diploma, bachelor's degree or less amounted to 5.7%, 13.8%, 2.2% and 78.3%, respectively for Qataris, compared to 24.4%, 23.2%, 1.2% and 51.2%, respectively for non-Qataris, following the same order.

**For Qataris**, the number of holders of higher diploma and bachelor's degree or less increased by 100% and 4.5%, respectively, while holders of PhD and master's degree decreased by 44.9% and 6.5%, respectively in 2021, compared to 2018.

**For non-Qataris**, holders of higher diploma and bachelor's degree or less increased by 28.5% and 38.1%, respectively in 2021 compared to 2018, while the number of PhD and master's degree holders decreased by 30.6% and 13.7%, respectively in the same year.

Figure 24b: Percentage distribution (%) of FTE R&D personnel in the government sector by educational qualification and nationality, 2021

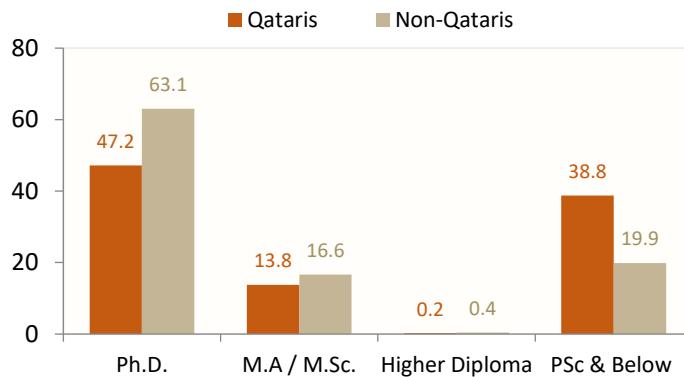


**At the level of the higher education sector**, the results of Figure 24c below indicate that the number of holders of PhD, master's, higher diploma and bachelor's degree or less reached 47.2%, 13.8%, 0.2% and 38.8% for Qataris, compared to 63.1%, 16.6%, 0.4% and 19.9% for non-Qataris, respectively.

**For Qataris**, the number of PhD holders increased by 138.1%, while the number of holders of master's, higher diploma and bachelor's degree or less decreased by 41.8%, 90.8% and 28%, respectively, in 2021 compared to 2018.

**For non-Qataris**, the number of PhD holders increased by 50.9%, while the number of holders of master's, higher diploma and bachelor's degree or less decreased by 37.4%, 80.3% and 32.6%, respectively in 2021, compared to 2018.

Figure 24c: Percentage distribution (%) of FTE R&D personnel in the higher education sector by educational qualification and nationality, 2021



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# Tables of Outputs



**المؤشرات الرئيسية لمسح البحث والتطوير**

**MAIN INDICATORS OF RESEARCH AND DEVELOPMENT SURVEY**  
2012, 2015, 2018 & 2021

TABLE No. (1)

جدول رقم (1)

| Indicator   | المؤشر                  |               |               |               |               |
|---|-------------------------|---------------|---------------|---------------|---------------|
|   | % التغير<br>٢٠٢١ - ٢٠١٨ | 2021          | 2018          | 2015          | 2012          |
| 1 Gross domestic expenditure on R&D (QR)  | ▲ 25.6                  | 4,452,494,482 | 3,545,524,257 | 3,054,536,835 | 3,254,836,183 |
| 2 Gross domestic expenditure on R&D (per capita QR)                                     | ▲ 26.1                  | 1,620         | 1,285         | 1,253         | 1,776         |
| 3 Gross domestic expenditure on R&D as a percentage of GDP at current prices            | ▲ 28.1                  | 0.68%         | 0.53%         | 0.52%         | 0.48%         |
| 4 Higher education sector's expenditure on R&D as a percentage of GDP at current prices | ▲ 15.9                  | 0.44%         | 0.38%         | 0.36%         | 0.20%         |
| 5 Government sector's expenditure on R&D as a percentage of GDP at current prices       | ▲ 77.2                  | 0.15%         | 0.08%         | 0.07%         | 0.15%         |
| 6 Business sector's expenditure on R&D as a percentage of GDP at current prices         | ▲ 36.5                  | 0.09%         | 0.06%         | 0.09%         | 0.12%         |
| <b>Expenditure on R&amp;D by Sector</b>   |                         |               |               |               |               |
| 7 Expenditure on higher education sector (QR)   | ▲ 13.6                  | 2,897,853,042 | 2,551,413,006 | 2,131,418,165 | 1,362,982,966 |
| 8 Percentage of expenditure by higher education sector                                  | ▼ -9.6                  | 65.08%        | 71.98%        | 69.78%        | 41.88%        |
| 9 Expenditure on government sector (QR)   | ▲ 73.7                  | 978,355,826   | 563,312,131   | 396,820,614   | 1,050,651,854 |
| 10 Percentage of expenditure by government sector                                       | ▲ 38.3                  | 21.97%        | 15.89%        | 12.99%        | 32.28%        |
| 11 Expenditure on business sector (QR)  | ▲ 33.8                  | 576,285,614   | 430,799,120   | 526,298,056   | 841,201,364   |
| 12 Percentage of expenditure by business sector   | ▲ 6.5                   | 12.94%        | 12.15%        | 17.23%        | 25.84%        |
| 13 Total expenditure on R&D   | ▲ 25.6                  | 4,452,494,482 | 3,545,524,257 | 3,054,536,835 | 3,254,836,184 |
| 14 Total percentages of expenditure on R&D  |                         | 100.00%       | 100.00%       | 100.00%       | 100.00%       |
| <b>Expenditure on R&amp;D by Type of Research</b>                                       |                         |               |               |               |               |
| 15 Expenditure on basic research  | ▼ -10.4                 | 1,423,993,232 | 1,589,773,449 | 921,342,738   | 883,305,974   |
| 16 Percentage of expenditure on basic research  | ▼ -28.7                 | 31.98%        | 44.84%        | 30.16%        | 27.14%        |
| 17 Expenditure on applied research  | ▲ 49.1                  | 2,452,159,097 | 1,644,629,951 | 1,749,038,971 | 1,633,944,650 |
| 18 Percentage of expenditure on applied research  | ▲ 18.7                  | 55.07%        | 46.39%        | 57.26%        | 50.11%        |
| 19 Expenditure on experimental development  | ▲ 85.3                  | 576,342,153   | 311,115,857   | 384,155,127   | 740,585,559   |
| 20 Percentage of expenditure on experimental development                                | ▲ 47.5                  | 12.94%        | 8.77%         | 12.58%        | 22.75%        |
| 21 Total expenditure on R&D   | ▲ 25.6                  | 4,452,494,482 | 3,545,524,257 | 3,054,536,835 | 3,254,836,183 |
| 22 Total percentages of expenditure on R&D  |                         | 100.00%       | 100.00%       | 100.00%       | 100.00%       |
| 21 مجموع الإنفاق على البحث والتطوير   |                         | 100.00%       | 100.00%       | 100.00%       | 100.00%       |
| 22 مجموع نسب الإنفاق على البحث والتطوير   |                         | 100.00%       | 100.00%       | 100.00%       | 100.00%       |

**المؤشرات الرئيسية لمسح البحث والتطوير**  
**MAIN INDICATORS OF RESEARCH AND DEVELOPMENT SURVEY**  
 2012, 2015, 2018 & 2021

TABLE No. (1)

| Indicator   | المؤشر                  |                 |                 |                 |               |
|---|-------------------------|-----------------|-----------------|-----------------|---------------|
|   | 2018 - 2021 % of Change | 2021            | 2018            | 2015            | 2012          |
| <b>Expenditure on R&amp;D by Type of Expenditure</b>        |                         |                 |                 |                 |               |
| 23 Capital expenditure (QR)                                 | ▼ -35.8                 | 289,308,770     | 450,694,926     | 1,013,093,750   | 722,990,552   |
| 24 Percentage of capital expenditure                        | ▼ -48.9                 | 6.50%           | 12.71%          | 33.17%          | 22.21%        |
| 25 Labor Cost (QR)  | ▲ 12.2                  | 2,605,161,413   | 2,321,892,272   | 1,267,217,505   | 1,202,474,115 |
| 26 Percentage of labor cost                                 | ▼ -10.7                 | 58.51%          | 65.49%          | 41.49%          | 36.94%        |
| 27 Other current expenditures (QR)                          | ▲ 101.6                 | 1,558,024,299   | 772,937,058     | 774,225,580     | 1,329,371,516 |
| 28 Percentage of other current expenditures on R&D          | ▲ 60.5                  | 34.99%          | 21.80%          | 25.35%          | 40.84%        |
| 29 Total expenditure on R&D                                 | ▲ 25.6                  | 4,452,494,481.9 | 3,545,524,256.6 | 3,054,536,835.4 | 3,254,836,183 |
| 30 Total percentages of expenditure on R&D                  |                         | 100.00%         | 100.00%         | 100.00%         | 100.00%       |
| <b>R&amp;D Funding by Source Type</b>                       |                         |                 |                 |                 |               |
| 31 Government funding (QR)                                  | ▲ 38.7                  | 3,810,723,877   | 2,746,523,973   | 1,929,042,386   | 2,204,941,163 |
| 32 Percentage of government funding                         | ▲ 10.5                  | 85.6%           | 77.5%           | 63.2%           | 67.74%        |
| 33 Local business funding (QR)                              | ▲ 38.0                  | 452,747,301     | 328,102,567     | 215,564,760     | 787,181,314   |
| 34 Percentage of local business funding                     | ▲ 9.9                   | 10.17%          | 9.25%           | 7.06%           | 24.18%        |
| 35 Other national sources' funding (QR)                     | ▼ -67.5                 | 147,226,577     | 452,958,143     | 853,334,320     | 183,943,565   |
| 36 Percentage of other national sources' funding            | ▼ -74.1                 | 3.31%           | 12.78%          | 27.94%          | 5.65%         |
| 37 Foreign sources' funding (QR)                            | ▲ 133.0                 | 41,796,728      | 17,939,574      | 56,595,370      | 78,770,141    |
| 38 Percentage of foreign sources'                           | ▲ 85.5                  | 0.94%           | 0.51%           | 1.85%           | 2.42%         |
| 39 Total R&D funding  | ▲ 25.6                  | 4,452,494,482   | 3,545,524,257   | 3,054,536,835   | 3,254,836,183 |
| 40 Total percentages of R&D funding                         |                         | 100.00%         | 100.00%         | 100.00%         | 100.00%       |
| <b>Expenditure on R&amp;D by Field of Research</b>          |                         |                 |                 |                 |               |
| 41 Expenditure on natural science                           | ▲ 62.9                  | 825,207,578     | 506,550,643     | 156,188,422     | 643,874,407   |
| 42 Percentage of expenditure on natural science             | ▲ 29.7                  | 18.53%          | 14.29%          | 5.11%           | 19.78%        |
| 43 Expenditure on engineering and technology                | ▲ 15.9                  | 825,900,271     | 712,808,740     | 890,882,053     | 687,655,454   |
| 44 Percentage of expenditure on engineering and technology  | ▼ -7.7                  | 18.55%          | 20.10%          | 29.17%          | 21.13%        |
| 45 Expenditure on medical and health sciences               | ▲ 28.9                  | 692,009,283     | 536,992,279     | 570,162,329     | 866,617,675   |
| 46 Percentage of expenditure on medical and health sciences | ▲ 2.6                   | 15.54%          | 15.15%          | 18.67%          | 26.63%        |
| 47 Expenditure on agriculture science                       | ▲ 96.7                  | 99,509,578,37   | 50,598,320      | 28,443,930      | 70,709,321    |
| 48 Percentage of expenditure on agriculture science         | ▲ 56.6                  | 2.23%           | 1.43%           | 0.93%           | 2.17%         |
| 49 Expenditure on social science                            | ▲ 31.9                  | 1,465,723,611   | 1,111,523,452   | 863,007,858     | 672,804,322   |
| 50 Percentage of expenditure on social science              | ▲ 5.0                   | 32.92%          | 31.35%          | 28.25%          | 20.67%        |
| 51 Expenditure on humanities                                | ▼ -13.2                 | 544,144,160     | 627,050,823     | 545,852,243     | 313,175,005   |
| 52 Percentage of expenditure on humanities                  | ▼ -30.9                 | 12.22%          | 17.69%          | 17.87%          | 9.62%         |
| 53 Total expenditure on R&D                                 | ▲ 25.6                  | 4,452,494,482   | 3,545,524,257   | 3,054,536,835   | 3,254,836,184 |
| 54 Total percentages of expenditure on R&D                  |                         | 100.00%         | 100.00%         | 100.00%         | 100.00%       |

جدول رقم (١)

**المؤشرات الرئيسية لمسح البحث والتطوير  
MAIN INDICATORS OF RESEARCH AND DEVELOPMENT SURVEY  
2012, 2015, 2018 & 2021**

TABLE No. (1)

| Indicator   | المؤشر  |               |               |               |               |
|---|---------|---------------|---------------|---------------|---------------|
|   | 2021    | 2018          | 2015          | 2012          | السنة         |
| <b>إإنفاق على البحث والتطوير حسب الأهداف الاجتماعية والاقتصادية</b>                           |         |               |               |               |               |
| 55 Expenditure on culture, recreation, religion and mass media                                | ▲ 20.1  | 668,742,440   | 556,838,679   | 528,643,019   | 418,165,347   |
| 56 Percentage of expenditure on culture, recreation, religion and mass media                  | ▼ -4.4  | 15.02%        | 15.71%        | 17.31%        | 12.85%        |
| 57 Expenditure on general advancement of knowledge  | ▲ 55.7  | 772,995,547   | 496,489,101   | 382,327,858   | 371,201,056   |
| 58 Percentage of expenditure on general advancement of knowledge                              | ▲ 24.0  | 17.36%        | 14.00%        | 12.52%        | 11.40%        |
| 59 Expenditure on environment   | ▲ 35.1  | 239,981,681   | 177,674,612   | 257,158,000   | 306,129,063   |
| 60 Percentage of expenditure on environment   | ▲ 7.6   | 5.39%         | 5.01%         | 8.42%         | 9.41%         |
| 61 Expenditure on health  | ▲ 32.1  | 908,158,062   | 687,346,794   | 630,120,025   | 795,499,349   |
| 62 Percentage of expenditure on health  | ▲ 5.2   | 20.40%        | 19.39%        | 20.63%        | 24.44%        |
| 63 Expenditure on education   | ▼ -47.1 | 439,813,009   | 831,460,501   | 235,465,010   | 481,083,171   |
| 64 Percentage of expenditure on education   | ▼ -57.9 | 9.88%         | 23.45%        | 7.71%         | 14.78%        |
| 65 Expenditure on others objectives   | ▲ 78.8  | 1,422,803,743 | 795,714,569   | 1,020,822,923 | 882,758,197   |
| 66 Percentage of expenditure others objectives  | ▲ 42.4  | 31.96%        | 22.44%        | 33.42%        | 27.12%        |
| 67 Total expenditure on R&D   | ▲ 25.6  | 4,452,494,482 | 3,545,524,257 | 3,054,536,835 | 3,254,836,183 |
| 68 Total percentage of expenditure on R&D   |         | 100.00%       | 100.00%       | 100.00%       | 100.00%       |
| <b>R&amp;D Personnel by Gender &amp; Sector</b>   |         |               |               |               |               |
| 69 Number of males workers  | ▲ 23.2  | 3,717         | 3,016         | 2,825         | 2,236         |
| 70 Number of females workers  | ▼ -8.8  | 1,911         | 2,095         | 1,895         | 802           |
| 71 Total number of personnel in business sector   | ▲ 156.8 | 1,356         | 528           | 569           | 647           |
| 72 Total number of personnel in government sector   | ▲ 87.1  | 1,394         | 745           | 942           | 808           |
| 73 Total number of R&D personnel in higher education sector                                   | ▼ -25.0 | 2,878         | 3,838         | 3,209         | 1,583         |
| 74 Total number of post graduates in higher education sector                                  | ▲ 25.7  | 602           | 479           | 328           | 206           |
| 75 Total number of personnel  | ▲ 10.1  | 5,628         | 5,111         | 4,720         | 3,038         |
| 76 Total number of personnel (including PhD and postdoctoral fellows)                         | ▲ 11.4  | 6,230         | 5,590         | 5,048         | 3,244         |
| <b>R&amp;D Researchers by Gender &amp; Sector</b>   |         |               |               |               |               |
| 77 Number of males researchers  | ▲ 15.8  | 2,371         | 2,047         | 1,953         | 1,348         |
| 78 Number of females researchers  | ▲ 4.8   | 1,109         | 1,058         | 894           | 377           |
| 79 Total number of researchers in business sector   | ▲ 86.0  | 517           | 278           | 340           | 357           |
| 80 Total number of researchers in government sector   | ▲ 80.4  | 772           | 428           | 662           | 559           |
| 81 Total number of researchers in higher education sector (excluding post graduates students) | ▼ -8.7  | 2,191         | 2,399         | 1,845         | 809           |
| 82 Total number of researchers  | ▲ 12.1  | 3,480         | 3,105         | 2,847         | 1,725         |

جدول رقم (١)

**المؤشرات الرئيسية لمسح البحث والتطوير**

**MAIN INDICATORS OF RESEARCH AND DEVELOPMENT SURVEY  
2012, 2015, 2018 & 2021**

TABLE No. (1)

| Indicator  | المؤشر  |           |           |           |
|--|---------|-----------|-----------|-----------|
|  | 2021    | 2018      | 2015      | 2012      |
| <b>R&amp;D Personnel with Full-Time Equivalent by Gender &amp; Sector</b>                  |         |           |           |           |
| 83 Full-time equivalent for personnel in business sector                                   | ▲ 44.5  | 672       | 465       | 476       |
| 84 Full-time equivalent for personnel in government sector                                 | ▲ 84.0  | 1,053     | 572       | 578       |
| 85 Full-time equivalent for personnel in higher education sector                           | ▲ 0.2   | 2,302     | 2,299     | 1,963     |
| 86 Full-time equivalent for graduate students in higher education                          | ▲ 25.7  | 602       | 479       | 324       |
| 87 Total full-time equivalent for personnel  | ▲ 20.7  | 4,027     | 3,336     | 3,016     |
| <b>Other Indicators</b>  |         |           |           |           |
| 88 Total number of R&D personnel / total number of labor force in the state (in thousands) | ▲ 15.4  | 3.08      | 2.67      | 2.58      |
| 89 Number of female researchers as a percentage of total R&D researchers                   | ▼ -20.7 | 27.04%    | 34.07%    | 31.40%    |
| 90 Total number of R&D researchers / total number of labor force (in thousands)            | ▲ 16.1  | 1.72      | 1.48      | 1.46      |
| 91 GDP in QR at current prices (in millions)*  | ▼ -2.0  | 654,025   | 667,339   | 588,733   |
| 92 Mid-year population   | ▼ -0.4  | 2,748,162 | 2,760,170 | 2,437,790 |
| 93 Total number of labor force   | ▼ -3.5  | 2,023,917 | 2,096,547 | 1,956,627 |
| * Revised figures 2012 - 2015 - 2018   |         |           |           |           |

جدول رقم (1)

## الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع البحث والقطاع

### GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT

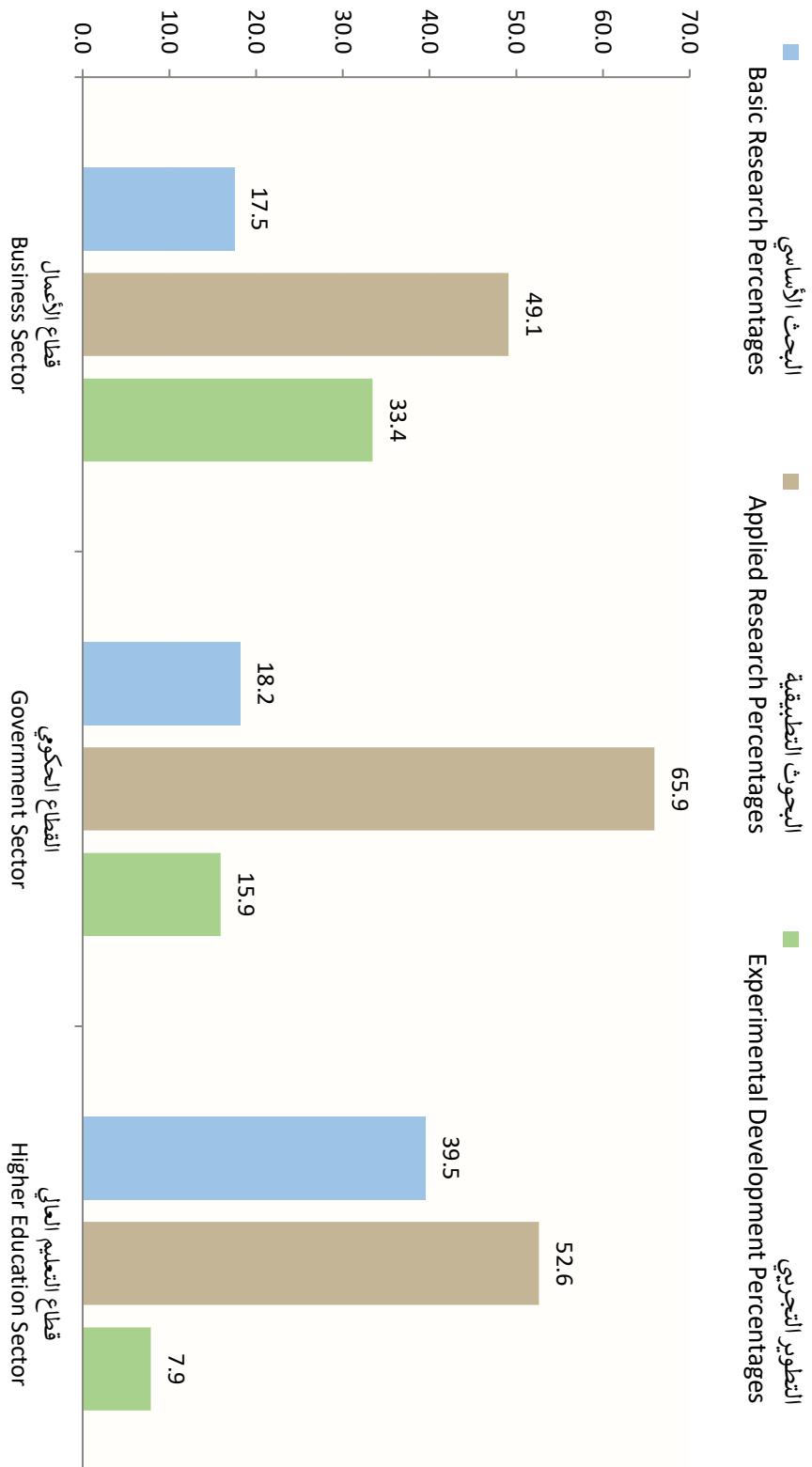
#### BY TYPE OF RESEARCH AND SECTOR

2021

TABLE No. (2.1)

| Type of Search           | Sector                  |                         |  | المجموع Total                    |                              |                         | نوع البحث | القطاع        |
|--------------------------|-------------------------|-------------------------|--|----------------------------------|------------------------------|-------------------------|-----------|---------------|
|                          | %                       | المجموع Total           | قيطاع التعليم العمال Higher Education Sector | القطاع الحكومي Government Sector | قطاع الأعمال Business Sector |                         |           |               |
|                          | القيمة (ر.ق) Value (QR) | القيمة (ر.ق) Value (QR) | القيمة (ر.ق) Value (QR)                      | القيمة (ر.ق) Value (QR)          | القيمة (ر.ق) Value (QR)      | القيمة (ر.ق) Value (QR) |           |               |
| Basic Research           | 32.0                    | 1,423,993,231.5         | 39.5   | 1,145,617,902.4                  | 18.2                         | 177,669,418.1           | 17.5      | 100,705,911.1 |
| Applied Research         | 55.1                    | 2,452,159,097.1         | 52.6   | 1,524,270,699.8                  | 65.9                         | 644,932,160.7           | 49.1      | 282,956,236.5 |
| Experimental Development | 12.9                    | 576,342,153.3           | 7.9  | 227,964,439.3                    | 15.9                         | 155,754,247.5           | 33.4      | 192,623,466.5 |
| Total                    | 100.0                   | 4,452,494,481.9         | 100.0  | 2,897,853,041.5                  | 100.0                        | 978,355,826.3           | 100.0     | 576,285,614.1 |
|                          |                         |                         |  |                                  |                              |                         |           | المجموع       |

نسبة الإنفاق المحلي الإجمالي على البحث والتطوير حسب القطاع ونوع البحث  
 PRECENTAGE OF GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT BY SECTOR AND TYPE OF RESEARCH  
 2021



الشكل رقم (١)

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع البحث في قطاع الاعمال**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF RESEARCH IN BUSINESS SECTOR**

2012-2021

TABLE NO. (2.2)

| Type of Search           | Year  |               |               |               |                         | نوع البحث     | السنة         |
|--------------------------|-------|---------------|---------------|---------------|-------------------------|---------------|---------------|
|                          | 2021  | 2018          | 2015          | 2012          | القيمة (ر.ق) Value (QR) |               |               |
|                          | %     | %             | %             | %             | %                       |               |               |
| البحث الأساسي            |       |               |               |               |                         |               |               |
| Basic Research           | 17.5  | 100,705,911.1 | 22.6          | 97,217,001.4  | 11.0                    | 57,892,786.2  | 17.7          |
| البحث التطبيقي           |       |               |               |               |                         |               |               |
| Applied Research         | 49.1  | 282,956,236.5 | 48.5          | 209,081,172.8 | 57.9                    | 304,621,314.9 | 40.5          |
| التجربة التجاري          |       |               |               |               |                         |               |               |
| Experimental Development | 33.4  | 192,623,466.5 | 28.9          | 124,500,945.6 | 31.1                    | 163,783,955.0 | 41.8          |
| المجموع                  | Total | 100.0         | 576,285,614.1 | 100.0         | 430,799,119.9           | 100.0         | 526,298,056.1 |
|                          |       |               |               |               |                         |               | 841,201,363.8 |

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع البحث في القطاع الحكومي**

**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT  
BY TYPE OF RESEARCH IN GOVERNMENT SECTOR**

2012-2021

**جدول رقم (٢,٣)**  
**السنة**  
**نوع البحث**

| Type of Search           | Year  |                            | 2021  |                            | 2018  |                            | 2015  |                            | 2012  |                            |
|--------------------------|-------|----------------------------|-------|----------------------------|-------|----------------------------|-------|----------------------------|-------|----------------------------|
|                          | %     | القيمة (ر.ق)<br>Value (QR) |
| Basic Research           | 18.2  | 177,669,418.1              | 42.2  | 237,585,175.3              | 28.5  | 113,093,875.1              | 22.9  | 241,031,895.8              | 41.5  | 113,093,875.1              |
| Applied Research         | 65.9  | 644,932,160.7              | 47.1  | 265,088,061.7              | 53.1  | 210,810,951.3              | 66.9  | 703,318,711.3              | 18.2  | 210,810,951.3              |
| Experimental Development | 15.9  | 155,754,247.5              | 10.8  | 60,638,894.1               | 18.4  | 72,915,787.9               | 10.1  | 106,301,246.4              | 18.2  | 72,915,787.9               |
| Total                    | 100.0 | 978,355,826.3              | 100.0 | 563,312,131.0              | 100.0 | 396,820,614.3              | 100.0 | 1,050,651,853.5            | 100.0 | 563,312,131.0              |
|                          |       |                            |       |                            |       |                            |       |                            |       | المجموع                    |

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع القطاع التعليمي العالي**

**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT  
BY TYPE OF RESEARCH IN HIGHER EDUCATION SECTOR  
2012-2021**

TABLE No. (2.4)

| Type of Search           | السنة                      |                 |                            |                 |                            |                 | نوع البحث                  | البحث الأساسي   |                  |
|--------------------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|------------------|
|                          | 2021                       |                 | 2018                       |                 | 2015                       |                 |                            |                 |                  |
| %                        | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) |                 |                  |
| Basic Research           | 39.5                       | 1,145,617,902.4 | 49.2                       | 1,254,976,272.2 | 35.2                       | 750,356,076.7   | 36.2                       | 493,152,018.5   |                  |
| Applied Research         | 52.6                       | 1,524,270,699.8 | 45.9                       | 1,170,460,716.4 | 57.9                       | 1,233,606,704.3 | 43.1                       | 587,321,750.7   | البحوث التطبيقية |
| Experimental Development | 7.9                        | 227,964,439.3   | 4.9                        | 125,976,017.2   | 6.9                        | 147,455,384.0   | 20.7                       | 282,509,196.5   | التطوير التجاري  |
| Total                    | 100.0                      | 2,897,853,041.5 | 100.0                      | 2,551,413,005.7 | 100.0                      | 2,131,418,165.0 | 100.0                      | 1,362,982,965.7 | المجموع          |

**مجموع الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع البحث**

**TOTAL OF GROSS DOMESTIC EXPENDITURE ON RESEARCH  
AND DEVELOPMENT BY TYPE OF RESEARCH**

2012-2021

TABLE NO. (2.5)

| Type of Search           | Year  |                              |       |                              |       | نوع البحث                    | السنة | جدول رقم (٢,٥)               |
|--------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|
|                          | 2021  | 2018                         | 2015  | 2012                         | %     |                              |       |                              |
|                          | %     | (القيمة (ر.ق)<br>Value (QR)) |
| Basic Research           | 32.0  | 1,423,993,231.5              | 44.8  | 1,589,778,448.8              | 30.2  | 921,342,738.0                | 27.1  | 883,305,974.2                |
| Applied Research         | 55.1  | 2,452,159,097.1              | 46.4  | 1,644,629,950.8              | 57.3  | 1,749,038,970.5              | 50.1  | 1,630,944,650.1              |
| Experimental Development | 12.9  | 576,342,153.3                | 8.8   | 311,115,856.9                | 12.6  | 384,155,126.9                | 22.8  | 740,585,558.6                |
| Total                    | 100.0 | 4,452,494,481.9              | 100.0 | 3,545,524,256.6              | 100.0 | 3,054,536,835.4              | 100.0 | 3,254,836,183.0              |
|                          |       |                              |       |                              |       |                              |       | المجموع                      |

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع الإنفاق والقطاع**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF EXPENDITURE AND SECTOR**

2021

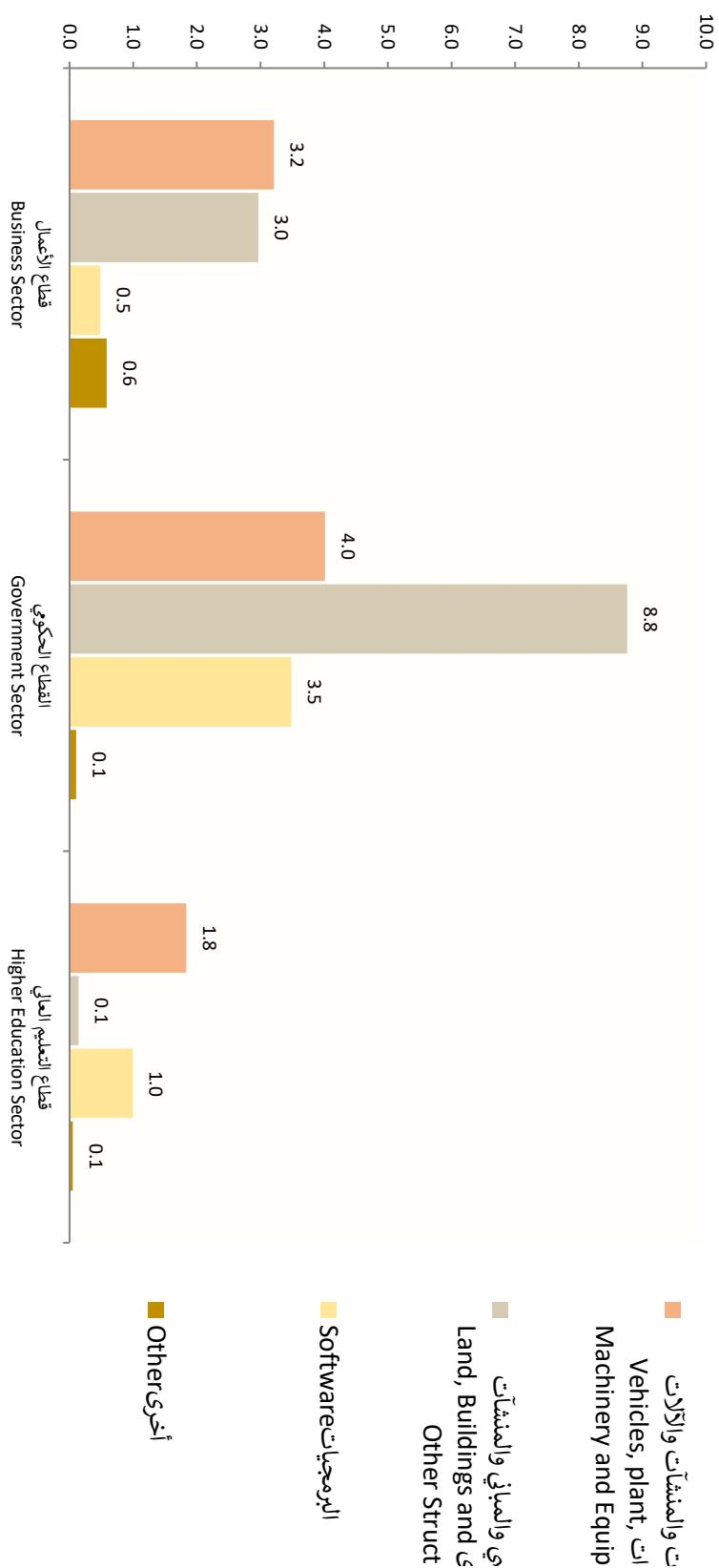
TABLE No.(3.1)

| Type of Expenditure                          | Sector | القطاع  |                            |                     |                            |                |                            | نوع الإنفاق | جدول رقم (٣،١) |
|--|--------|---------|----------------------------|---------------------|----------------------------|----------------|----------------------------|-------------|----------------|
|  |        | المجموع |                            | قطاع التعليم العالي |                            | القطاع الحكومي |                            |             |                |
|  |        | %       | القيمة (ر.ق)<br>Value (QR) | %                   | القيمة (ر.ق)<br>Value (QR) | %              | القيمة (ر.ق)<br>Value (QR) | %           |                |
| Labor Cost (including Postgraduate Students) |        | 58.5    | 2,605,161,412.5            | 60.7                | 1,759,319,280.7            | 52.3           | 511,498,971.8              | 58.0        | 334,343,160.1  |
| Current Expenditure                          |        | 35.0    | 1,558,024,299.3            | 36.3                | 1,051,006,754.1            | 31.4           | 306,794,983.1              | 34.7        | 200,222,562.1  |
| Total  |        | 93.5    | 4,163,185,711.9            | 97.0                | 2,810,326,034.8            | 83.6           | 818,293,954.9              | 92.8        | 534,565,722.1  |
| Vehicles, plant, Machinery and Equipment     |        | 2.5     | 110,899,423.6              | 1.8                 | 53,147,360.2               | 4.0            | 39,255,671.4               | 3.2         | 18,496,392.0   |
| Land, Buildings and Other Structures         |        | 2.4     | 106,837,939.1              | 0.1                 | 4,053,939.1                | 8.8            | 85,700,000.0               | 3.0         | 17,084,000.0   |
| Capital Expenditure                          |        | 1.5     | 65,660,509.3               | 1.0                 | 28,792,309.3               | 3.5            | 34,096,200.0               | 0.5         | 2,772,000.0    |
| Other  |        | 0.1     | 5,910,898.2                | 0.1                 | 1,533,398.2                | 0.1            | 1,010,000.0                | 0.6         | 3,367,500.0    |
| Total  |        | 6.5     | 289,308,770.1              | 3.0                 | 87,527,006.7               | 16.4           | 160,061,871.4              | 7.2         | 41,719,892.0   |
| Total  |        | 100.0   | 4,452,494,481.9            | 100.0               | 2,897,853,041.5            | 100.0          | 978,355,826.3              | 100.0       | 576,285,614.1  |

\*OTHER CURRENT EXPENDITURE ON R&D  
Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs).

\*نفقات البحث والتطوير الأخرى على البحث والتطوير  
تشمل نسبة الإنفاق الأخرى التي هي جزء من إنفاق البحث والتطوير مثل المواد والوقود والمدخلات الأخرى (بما في ذلك جميع كابينت الشغيل).

**النفقات الرسمالية على البحث والتطوير حسب القطاع ونوع الإنفاق**  
**CAPITAL EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY SECTOR AND TYPE OF EXPENDITURE**  
**2021**



الشكل رقم (2)

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع القطاع الاعمال**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF EXPENDITURE AND BUSINESS SECTOR**

2012-2021

TABLE NO.(3.2)

| Type of Expenditure                          | Year                       |                      |                            |                      |                            | نوع الإنفاق          | المجموع      |                      |
|--|----------------------------|----------------------|----------------------------|----------------------|----------------------------|----------------------|--------------|----------------------|
|  | 2021                       | 2018                 | 2015                       | 2012                 | السنة                      |                      |              |                      |
| %  | القيمة (ر.ق)<br>Value (QR) | %                    | القيمة (ر.ق)<br>Value (QR) | %                    | القيمة (ر.ق)<br>Value (QR) | %                    |              |                      |
| Labor Cost (including Postgraduate Students) | 58.0                       | 334,343,160.1        | 44.0                       | 189,366,046.9        | 46.7                       | 245,973,619.1        | 33.8         | 284,728,270.8        |
| Current Expenditure                          | 34.7                       | 200,222,562.1        | 23.6                       | 101,634,210.0        | 27.2                       | 142,944,745.0        | 51.0         | 428,809,436.4        |
| Total  | 92.8                       | 534,565,722.1        | 67.5                       | 291,000,256.9        | 73.9                       | 388,918,364.1        | 84.8         | 713,537,707.2        |
| Vehicles, plant, Machinery and Equipment     | 3.2                        | 18,496,392.0         | 14.0                       | 60,348,261.9         | 13.4                       | 70,417,667.0         | 5.2          | 43,400,264.4         |
| Land, Buildings and Other Structures         | 3.0                        | 17,084,000.0         | 17.5                       | 75,288,091.0         | 11.1                       | 58,579,374.0         | 10.0         | 84,263,392.1         |
| Capital Expenditure                          | 0.5                        | 2,772,000.0          | 1.0                        | 4,162,510.0          | 1.6                        | 8,382,651.0          | 0.0          | 0.0                  |
| Other  | 0.6                        | 3,367,500.0          | 0.0                        | 0.0                  | 0.0                        | 0.0                  | 0.0          | 0.0                  |
| Total  | 7.2                        | 41,719,892.0         | 32.5                       | 139,798,862.9        | 26.1                       | 137,379,692.0        | 15.2         | 127,663,656.6        |
| <b>Total</b>                                 | <b>100.0</b>               | <b>576,285,614.1</b> | <b>100.0</b>               | <b>430,759,119.9</b> | <b>100.0</b>               | <b>526,298,056.1</b> | <b>100.0</b> | <b>841,201,363.8</b> |

المجموع

النفقات الرأسمالية

النفقات الإيجارات الأخرى

المجموع

**\*OTHER CURRENT EXPENDITURE ON R&D**  
*Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs).*  
\* أخري تم إضافتها من مسح ٢٠٢١  
\* تشمل نسبة الإنفاق التي هي جزء من النشطة البحث والتطوير مثل المواد والوقود والدخلات الأخرى (إما في تلك جموع كلف التشغيل).  
\*\* المجموعات الأخرى على البحث والتطوير

**الإِنْتَقَافُ الْمَحْلِيُّ الْإِجْمَالِيُّ عَلَى الْبَحْثِ وَالتَّطَوِيرِ حَسْبُ نَوْعِ الْإِنْتَقَافِ فِي الْمَطَاعِلِ الْحَكُومِيِّ**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF EXPENDITURE IN GOVERNMENT SECTOR**

2012-2021

TABLE No.(3.3)

| Type of Expenditure                          | Year        |                             |             |                             | نوع الإنفاق | المجموع                     |
|--|-------------|-----------------------------|-------------|-----------------------------|-------------|-----------------------------|
|  | 2021        | 2018                        | 2015        | 2012                        |             |                             |
|  | %           | (القيمة .(ر.ق.) Value (QR)) | %           | (القيمة .(ر.ق.) Value (QR)) | %           | (القيمة .(ر.ق.) Value (QR)) |
| Labor Cost (including Postgraduate Students) | 52.3        | 511,498,971.8               | 51.2        | 288,309,357.9               | 51.8        | 205,593,697.3               |
| Current Expenditure                          |             |                             |             |                             |             | 32.4 340,132,941.6          |
| Other Current Expenditure *                  | 31.4        | 306,794,983.1               | 28.7        | 161,554,339.6               | 25.7        | 101,840,626.0               |
| Total  | 83.6        | 818,293,954.9               | 79.9        | 449,863,697.6               | 77.5        | 307,434,323.3               |
| Vehicles, plant, Machinery and Equipment     | 4.0         | 39,255,671.4                | 4.5         | 25,436,247.5                | 7.8         | 31,055,470.0                |
| Land, Buildings and Other Structures         | 8.8         | 85,700,000.0                | 0.4         | 2,100,000.0                 | 11.6        | 45,968,587.0                |
| Capital Expenditure                          | 3.5         | 34,096,200.0                | 15.3        | 85,912,186.0                | 3.1         | 12,362,234.0                |
| Other  | 0.1         | 1,010,000.0                 | 0.0         | 0.0                         | 0.0         | 0.0                         |
| <b>Total</b>                                 | <b>16.4</b> | <b>160,061,871.4</b>        | <b>20.1</b> | <b>113,448,433.5</b>        | <b>22.5</b> | <b>89,386,291.0</b>         |
|  |             |                             |             |                             |             | <b>34.7 364,929,775.0</b>   |
|  |             |                             |             |                             |             | <b>المجموع</b>              |
|  |             |                             |             |                             |             | <b>المجموع</b>              |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
| * <b>OTHER CURRENT EXPENDITURE ON R&amp;D</b><br>Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs). | *النفقات الأخرى على البحث والتطوير   |  |  |  |  |  |
|  | تشتمل نسبة الإنفاق التي هي جزء من النشاط البحثي والتطوير مثل المواد والوقود والسلع الأخرى ( بما في ذلك حمبيج كابيتال تشغيل). |  |  |  |  |  |
| *  | آخر تم إضافتها من مسح ٢٠١١   |  |  |  |  |  |
|  | * Other added from 2021 Survey   |  |  |  |  |  |

**الإنفاق المحلي الإجمالي على البحث والتطوير حسب نوع الإنفاق في قطاع التعليم العالي**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF EXPENDITURE IN HIGHER EDUCATION SECTOR**

2012-2021

TABLE No.(3.4)

| Type of Expenditure                          | Year                       |                 |                            |                 |                            | نوع الإنفاق     | المجموع |  |
|--|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|---------|--|
|  | 2021                       | 2018            | 2015                       | 2012            | السنة                      |                 |         |  |
| %  | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               |         |  |
| Labor Cost (including Postgraduate Students) | 60.7                       | 1,759,319,280.7 | 72.3                       | 1,844,216,867.4 | 38.3                       | 815,650,188.6   | 42.4    | 577,612,902.2  |
| Current Expenditure                          |                            |                 |                            |                 |                            |                 |         | نفقة الفحوى العاملة (بما في ذلك طلبة الدراسات العليا لقطاع التعليم العالي) |
| Other Current Expenditure *                  | 36.3                       | 1,051,006,754.1 | 20.0                       | 509,748,508.7   | 24.8                       | 529,440,209.4   | 40.7    | 554,972,943.1  |
| Total  | 97.0                       | 2,810,326,034.8 | 92.3                       | 2,353,965,376.1 | 63.1                       | 1,345,090,398.0 | 83.1    | 1,132,585,845.3  |
| Vehicles, plant, Machinery and Equipment     | 1.8                        | 53,147,360.2    | 7.1                        | 181,549,616.2   | 4.3                        | 91,802,660.1    | 4.5     | 61,367,830.4   |
| Land, Buildings and Other Structures         | 0.1                        | 4,053,939.1     | 0.2                        | 4,053,441.9     | 31.9                       | 678,976,365.9   | 12.4    | 169,029,290.0  |
| Capital Expenditure                          | 1.0                        | 28,792,309.3    | 0.5                        | 11,844,571.5    | 0.7                        | 15,548,741.0    | 0.0     | 0.0  |
| Other  | 0.1                        | 1,533,398.2     | 0.0                        | 0.0             | 0.0                        | 0.0             | 0.0     | أخرى   |
| Total  | 3.0                        | 87,527,006.7    | 7.7                        | 197,447,629.6   | 36.9                       | 786,327,767.0   | 16.9    | 230,397,120.4  |
| Total  | 100.0                      | 2,897,853,041.5 | 100.0                      | 2,551,413,005.7 | 100.0                      | 2,131,418,165.0 | 100.0   | 1,362,982,965.7  |

\*النفقات الجارية الأخرى على البحث والتطوير  
 تشمل نسبة الإنفاق التي هي جزء من إنشطة البحث والتطوير مثل المواد والوقود والسدادات الأخرى (بما في ذلك حمسيج كابيتال تشغيل).

\* OTHER CURRENT EXPENDITURE ON R&D  
 Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs).  
 \* Other added from 2021 Survey  
 \* آخر تم إضافتها من مسح ٢٠٢١

**مجمع الإنفاق على البحث والتطوير حسب نوع الإنفاق**  
**TOTAL OF GROSS DOMESTIC EXPENDITURE ON RESEARCH**  
**AND DEVELOPMENT BY TYPE OF EXPENDITURE**

2012-2021

TABLE No.(3.5)

| Type of Expenditure                          | Year       |                            |             |                            |             | نوع الإنفاق                | السنة          |
|--|------------|----------------------------|-------------|----------------------------|-------------|----------------------------|----------------|
|  | 2021       | 2018                       | 2015        | 2012                       | %           |                            |                |
|  | %          | القيمة (ر.ق)<br>Value (QR) | %           | القيمة (ر.ق)<br>Value (QR) | %           | القيمة (ر.ق)<br>Value (QR) | %              |
| Labor Cost (including Postgraduate Students) | 58.5       | 2,605,161,412.5            | 65.5        | 2,321,892,272.3            | 41.5        | 1,267,217,505.0            | 36.9           |
| Current Expenditure                          |            |                            |             |                            |             | 1,202,474,114.6            |                |
| Other Current Expenditure *                  | 35.0       | 1,558,024,299.3            | 21.8        | 772,937,058.3              | 25.3        | 774,225,580.4              | 40.8           |
| Total  | 93.5       | 4,163,185,711.9            | 87.3        | 3,094,829,330.6            | 66.8        | 2,041,443,085.4            | 77.8           |
| Vehicles, plant, Machinery and Equipment     | 2.5        | 110,899,423.6              | 7.5         | 267,334,125.6              | 6.3         | 193,275,797.1              | 11.3           |
| Land, Buildings and Other Structures         | 2.4        | 106,837,939.1              | 2.3         | 81,441,532.9               | 25.7        | 783,524,326.9              | 10.9           |
| Capital Expenditure                          | 1.5        | 65,660,509.3               | 2.9         | 101,919,267.5              | 1.2         | 36,293,626.0               | 0.0            |
| Other  | 0.1        | 5,910,898.2                | 0.0         | 0.0                        | 0.0         | 0.0                        | 0.0            |
| <b>Total</b>                                 | <b>6.5</b> | <b>289,308,770.1</b>       | <b>12.7</b> | <b>450,694,926.0</b>       | <b>33.2</b> | <b>1,013,093,750.0</b>     | <b>22.2</b>    |
|  |            |                            |             |                            |             | <b>722,990,552.0</b>       | <b>المجموع</b> |
|  |            |                            |             |                            |             |                            | <b>المجموع</b> |

\* OTHER CURRENT EXPENDITURE ON R&D  
Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs).

\* Other added from 2021 Survey

\*\*نفقات الجاربة الأخرى على البحث والتطوير  
تشتمل نسبة الإنفاق التي هي جزء من إشتمالية البحث والتطوير مثل المواد والوقود والمدخلات الأخرى (إما في ذلك جميع كليات التعليم).  
\* أخرى تم إضافتها من مسح ٢٠٢١.

**الإدفاق المحلي الإجمالي على البحث والتطوير حسب نوع الإنفاق والقطاع (النسبة لـ كل قطاع)**  
**GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT**  
**BY TYPE OF EXPENDITURE AND SECTOR (PERCENTAGE PER SETOR) 2021**

2021

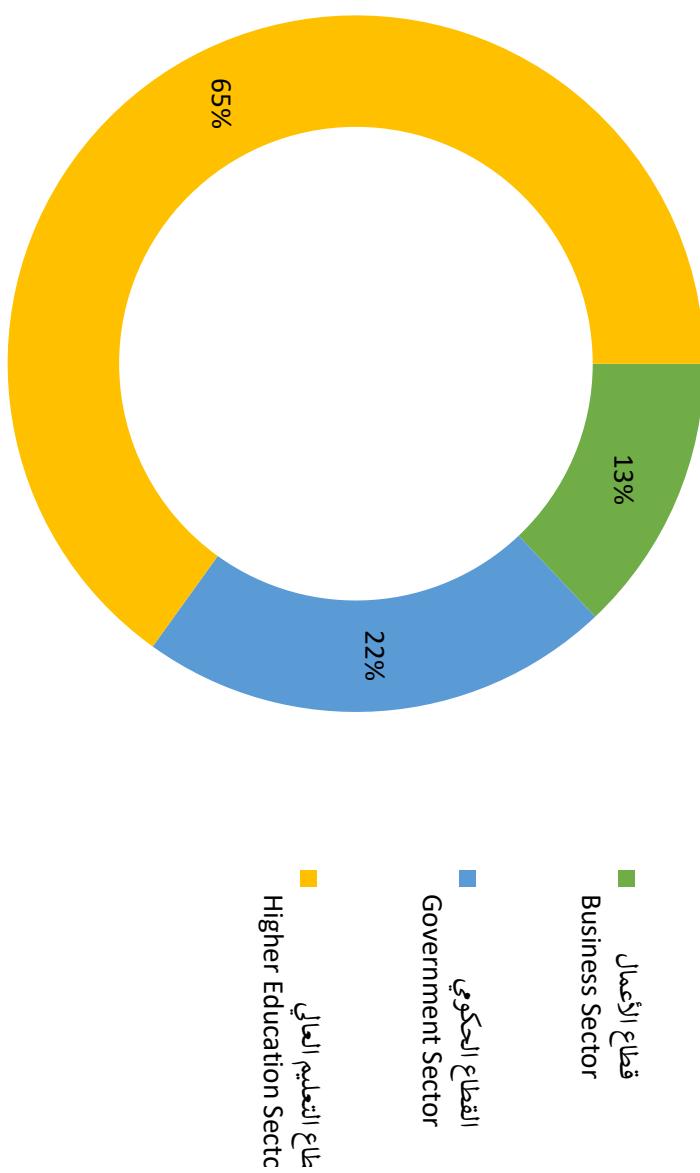
TABLE No.(4)

| Type of Expenditure                          | Sector                                   | المجموع         |  |                                     | القطاع                          |                            |                          |
|--|--|-----------------|--|-------------------------------------|---------------------------------|----------------------------|--------------------------|
|  |  | Total           | قطاع التعليم العالي<br>Higher Education Sector | القطاع الحكومي<br>Government Sector | قطاع الأعمال<br>Business Sector | القيمة (ر.ق)<br>Value (QR) | % Per Setor              |
|  |  |                 |  |                                     |                                 |                            | % لـ قطاع<br>% Of Sector |
| Labor Cost (including Postgraduate Students) | 58.5                                     | 2,605,161,412.5 | 39.5   | 1,759,319,280.7                     | 11.5                            | 511,498,971.8              | 7.5                      |
| Current Expenditure                          | Other Current Expenditure *              | 35.0            | 1,558,024,299.3                                | 23.6                                | 1,051,006,754.1                 | 6.9                        | 306,794,983.1            |
| Total  | Vehicles, plant, Machinery and Equipment | 93.5            | 4,163,185,711.9                                | 63.1                                | 2,810,326,034.8                 | 18.4                       | 818,293,954.9            |
| Capital Expenditure                          | Land, Buildings and Other Structures     | 2.4             | 106,837,939.1                                  | 0.1                                 | 4,053,939.1                     | 1.9                        | 85,700,000.0             |
| Other  | Software                                 | 1.5             | 65,660,509.3                                   | 0.6                                 | 28,792,309.3                    | 0.8                        | 34,096,200.0             |
| Total  |  | 6.5             | 289,308,770.1                                  | 2.0                                 | 87,527,006.7                    | 3.6                        | 160,061,871.4            |
| <b>Total</b>                                 |  | <b>100.0</b>    | <b>4,452,494,481.9</b>                         | <b>65.1</b>                         | <b>2,897,853,041.5</b>          | <b>22.0</b>                | <b>978,355,826.3</b>     |
|  |  |                 |  |                                     |                                 |                            | <b>المجموع</b>           |
|  |  |                 |  |                                     |                                 |                            | <b>المجموع</b>           |

\* OTHER CURRENT EXPENDITURE ON R&D  
Includes percentage of expenditure which is part of R&D activities such as materials, fuels and other inputs (including all running costs).

\* المجموعات الأخرى على البحث والتطوير  
تشمل نسبة الإنفاق التي هي جزء من إنشطة البحث والتطوير مثل المواد والمفرد والمدخلات الأخرى (بما في ذلك جميع كلف التشغيل).

الإنفاق المحلي الإجمالي على البحث والتطوير حسب القطاع  
GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT BY SECTOR  
2021



## مقدار تمويل البحث والتطوير حسب القطاع ونوع المهدى

### RESEARCH AND DEVELOPMENT FUNDING SOURCES BY SECTOR AND SOURCE TYPE

2021

TABLE NO. (5.1)

| Funding Source         | Sector   | المجموع      |                         |                |                        | القطاع          |                          |              |                          | جدول رقم (٥,١)                     |
|------------------------|--|--------------|-------------------------|----------------|------------------------|-----------------|--------------------------|--------------|--------------------------|------------------------------------|
|                        |  | Total        | Higher Education Sector | القطاع الحكومي | قطاع الأعمال           | Business Sector | القيمة (ر.ق.) Value (QR) | %            | القيمة (ر.ق.) Value (QR) |                                    |
| Organizations          | Private Funds  | 79.9         | 3,557,956,925.2         | 92.2           | 2,672,040,029.9        | 53.1            | 519,936,536.7            | 63.5         | 365,980,358.6            | مقدار التمويل المؤسسات             |
|                        |  |              |                         |                |                        |                 |                          |              |                          |                                    |
| Government             | Grants, especially those for special purpose, including student scholarships | 7.0          | 309,931,367.1           | 3.6            | 105,502,573.7          | 15.1            | 147,387,793.4            | 9.9          | 57,041,000.0             | الحكومة                            |
|                        |  |              |                         |                |                        |                 |                          |              |                          |                                    |
| Local Businesses       | R&D Contracts  | 6.9          | 308,815,942.8           | 0.0            | 299,193.6              | 27.4            | 268,537,749.2            | 6.9          | 39,979,000.0             | عقود لقيام بالبحث والتطوير المباشر |
|                        |  |              |                         |                |                        |                 |                          |              |                          |                                    |
| Other national sources | Non-Profit Organizations (including Foundations)                             | 3.3          | 146,683,576.9           | 3.9            | 113,325,829.9          | 3.4             | 32,877,747.0             | 0.1          | 480,000.0                | المصادر الوطنية الأخرى             |
|                        |  |              |                         |                |                        |                 |                          |              |                          |                                    |
| Foreign sources        | All other foreign sources  | 0.9          | 41,795,727.7            | 0.1            | 2,368,227.7            | 1.0             | 9,616,000.0              | 5.2          | 29,812,500.0             | المصادر الأجنبية                   |
|                        |  |              |                         |                |                        |                 |                          |              |                          |                                    |
| <b>Total</b>           |  | <b>100.0</b> | <b>4,452,494,481.9</b>  | <b>100.0</b>   | <b>2,897,853,041.5</b> | <b>100.0</b>    | <b>978,355,826.3</b>     | <b>100.0</b> | <b>576,285,614.1</b>     | <b>المجموع</b>                     |

**مصادر تمويل البحث والتطوير حسب نوع المصادر في قطاع الاعمال**  
**RESEARCH AND DEVELOPMENT FUNDING SOURCES BY SOURCE TYPE IN BUSINESS**  
**2015-2021**

TABLE NO. (5.2)

| Funding Source                | Year   | السنة        |                      |             |                      |                            |                      | جدول رقم (٥،٢)   |  |
|-------------------------------|--|--------------|----------------------|-------------|----------------------|----------------------------|----------------------|--|--|
|                               |  | 2021         | 2018                 | 2015        | %                    | القيمة (ر.ق)<br>Value (QR) | %                    | القيمة (ر.ق)<br>Value (QR)                               |  |
| <b>Organizations</b>          | Private Funds  | <b>63.5</b>  | <b>365,980,358.6</b> | 74.8        | 322,156,466.9        | 37.3                       | 196,410,300.0        | التمويل الخاص  | المؤسسات                                       |
|                               | Grants, especially those for special purpose, including student scholarships | <b>9.9</b>   | <b>57,041,000.0</b>  | 2.5         | 10,960,643.0         | 36.4                       | 191,345,555.2        | المشتخصوص من مهندسات العر الغاص<br>بها في ذلك منح الطلاب | الحكومة  |
| <b>Government</b>             | Direct R&D Contracts   | <b>6.9</b>   | <b>39,979,000.0</b>  | 0.9         | 3,677,500.0          | 2.2                        | 11,534,959.0         | عقود للعلم بالبحث والتطوير المباشر                       | قطاع الأعمال المحلي                            |
|                               | R&D Contracts  | <b>14.4</b>  | <b>82,992,755.5</b>  | 1.4         | 5,946,100.0          | 1.6                        | 8,668,984.0          | عقود لفتم بالبحث والتطوير                                | المؤسسات غير الربحية (ابها في ذلك<br>المؤسسات) |
| <b>Other national sources</b> | Non-Profit Organizations (including Foundations)                             | <b>0.1</b>   | <b>480,000.0</b>     | 17.2        | 74,165,560.0         | 15.4                       | 81,150,417.9         | النبرعات الفردية<br>المؤسسات التعليم العالى الأخرى       | المصادر الوطنية الأخرى                         |
|                               | Individual Donations   | <b>0.0</b>   | <b>0.0</b>           | 0.3         | 1,236,000.0          | 0.0                        | 94,500.0             | جامعة التعليم العالى الأخرى                              | مؤسسات التعليم العالى الأخرى                   |
| <b>Foreign sources</b>        | Other Higher Education Institutions  | <b>0.0</b>   | <b>0.0</b>           | 0.5         | 2,169,950.0          | 0.0                        | 0.0                  | المصادر الأجنبية   | المصادر الأجنبية                               |
|                               | All other foreign sources  | <b>5.2</b>   | <b>29,812,500.0</b>  | 2.4         | 10,486,900.0         | 7.0                        | 37,093,340.0         | جميع المصادر الأجنبية الأخرى                             | المجموع  |
| <b>Total</b>                  |  | <b>100.0</b> | <b>576,285,614.1</b> | <b>10.0</b> | <b>430,799,119.9</b> | <b>100.0</b>               | <b>526,298,056.1</b> |  |  |

**مصادر تمويل البحث والتطوير حسب نوع المصدر في القطاع الحكومي**  
**RESEARCH AND DEVELOPMENT FUNDING SOURCES BY SOURCE TYPE IN GOVERNMENT SECTOR**  
**2015-2021**

TABLE NO. (5.3)

| Funding Source         | Year   | السنة        |                      |             |                      |                            |   | جدول رقم (٥,٣)   |
|------------------------|--|--------------|----------------------|-------------|----------------------|----------------------------|---|--|
|                        |  | 2021         | 2018                 | 2015        | %                    | القيمة (ر.ق)<br>Value (QR) | %   |  |
| Organizations          | Private Funds  | 53.1         | 519,936,536.7        | 32.2        | 181,108,370.7        | 43.3                       | 171,983,218.8   | التمويل الخاص  |
| Government             | Grants, especially those for special purpose, including student scholarships | 15.1         | 147,387,793.4        | 12.5        | 70,411,198.5         | 5.9                        | 23,333,108.5  | المؤسسات<br>الحكومية<br>بهدف خصم مبلغ الطلاب<br>منهذاً العر الخاص<br>عقود للعلم بالبحث وإنجاز المشار |
|                        | Direct R&D Contracts   | 27.4         | 268,537,749.2        | 22.8        | 128,534,399.0        | 18.9                       | 74,921,869.0  |  |
| Local Businesses       | R&D Contracts  | 0.0          | 0.0                  | 0.0         | 0.4                  | 1,648,349.0                | قطاع الأعمال<br>الم المحلي<br>عقود لقيام بالبحث والتطوير  |  |
| Other national sources | Non-Profit Organizations (including Foundations)                             | 3.4          | 32,877,747.0         | 32.5        | 182,890,388.8        | 28.4                       | 112,560,268.0   | المؤسسات غير الربحية (ابها في ذلك<br>المؤسسات)<br>النبرعات الفردية                                   |
|                        | Individual Donations   | 0.0          | 0.0                  | 0.0         | 0.3                  | 1,070,000.0                | المصادر الوطنية<br>الأخرى<br>مؤسسات التعليم العالي الأخرى |  |
| Foreign sources        | Other Higher Education Institutions  | 0.0          | 0.0                  | 0.0         | 0.4                  | 1,635,600.0                | المصادر الأجنبية<br>جميع المصادر الأجنبية الأخرى          |  |
|                        | All other foreign sources  | 1.0          | 9,616,000.0          | 0.1         | 367,774.0            | 2.4                        | 9,668,201.0   | المجموع  |
|                        | <b>Total</b>   | <b>100.0</b> | <b>978,355,826.3</b> | <b>10.0</b> | <b>563,312,131.0</b> | <b>100.0</b>               | <b>396,820,614.3</b>                                      |  |

**مصادر تمويل البحث والتطوير حسب نوع المصادر في قطاع التعليم العالي**  
**RESEARCH AND DEVELOPMENT FUNDING SOURCES BY SOURCE TYPE IN HIGHER EDUCATION SECTOR**  
**2015-2021**

TABLE No. (5.4)

| Funding Source          | Year   |              |                        | السنة        |                          |              | مصدر التمويل             |   |                          |  |
|-------------------------|--|--------------|------------------------|--------------|--------------------------|--------------|--------------------------|---|--------------------------|--|
|                         | 2021   | 2018         | 2015                   | %            | القيمة (ر.ق.) Value (QR) | %            | القيمة (ر.ق.) Value (QR) | % | القيمة (ر.ق.) Value (QR) |  |
| <b>Organizations</b>    | Private Funds  | 92.2         | 2,672,040,029.9        | 62.6         | 1,597,449,342.0          | 29.4         | 627,467,615.0            |   |                          | المؤسسات   |
|                         | Grants, especially those for special purpose, including student scholarships | 3.6          | 105,502,573.7          | 29.2         | 744,156,431.4            | 38.2         | 813,436,060.7            |   |                          | المنحة خصوصاً منها ذات الغرض الخاص بما في ذلك منح الطلاب |
| <b>Government</b>       | Direct R&D Contracts   | 0.0          | 299,493.6              | 0.4          | 10,226,088.1             | 0.7          | 15,020,000.0             |   |                          | عقود للقيام بالبحث والتطوير المباشر                      |
|                         | R&D Contracts  | 0.1          | 3,774,186.7            | 0.0          | 0.0                      | 0.4          | 8,837,126.9              |   |                          | عقود للقيام بالبحث والتطوير المحلي                       |
| <b>Local Businesses</b> | Non-Profit Organizations (including Foundations)                             | 3.9          | 113,325,829.9          | 7.5          | 192,335,924.0            | 30.8         | 656,823,533.9            |   |                          | المنظمات غير الربحية (بما في ذلك المؤسسات)               |
|                         | Individual Donations   | 0.0          | 0.0                    | 0.0          | 0.0                      | 0.0          | 0.0                      |   |                          | البرعات الفردية  |
| <b>Foreign sources</b>  | Other Higher Education institutions  | 0.0          | 543,000.0              | 0.0          | 160,320.0                | 0.0          | 0.0                      |   |                          | مؤسسات التعليم العالي الأخرى                             |
|                         | All other foreign sources  | 0.1          | 2,368,227.7            | 0.3          | 7,084,900.2              | 0.5          | 9,833,828.5              |   |                          | المصادر الأجنبية   |
| <b>Total</b>            |  | <b>100.0</b> | <b>2,897,853,041.5</b> | <b>100.0</b> | <b>2,551,413,005.7</b>   | <b>100.0</b> | <b>2,131,418,165.0</b>   |   |                          | <b>المجموع</b>   |

**مُجَمُوع مَصَادِر تَموِيل الْبَحْث وَالنَّوْدُور حَسْبَ نُوعِ الْمَصَادِر**  
**TOTAL OF RESEARCH AND DEVELOPMENT FUNDING SOURCES BY SOURCE TYPE**  
**2015-2021**

TABLE No. (5.5)

| Funding Source          | Year   |              |                        | السنة        |                          |              | مَصَادِر التَّموِيل      |   |                          |
|-------------------------|--|--------------|------------------------|--------------|--------------------------|--------------|--------------------------|---|--------------------------|
|                         | 2021   | 2018         | 2015                   | %            | القيمة (ر.س.) Value (QR) | %            | القيمة (ر.س.) Value (QR) | %   | القيمة (ر.س.) Value (QR) |
| <b>Organizations</b>    | Private Funds  | <b>79.9</b>  | <b>3,557,956,925.2</b> | 59.2         | 2,100,714,286.5          | 32.6         | 995,861,133.8            | المؤسسات  | التمويل                  |
|                         | Grants, especially those for special purpose, including student scholarships | <b>7.0</b>   | <b>309,931,367.1</b>   | 23.3         | 825,528,287.9            | 33.7         | 1,028,114,724.4          | المنحة خصوصاً منها ذات الغرض الخاص بما في ذلك منحة الطلاب | السناب                   |
| <b>Government</b>       | Direct R&D Contracts   | <b>6.9</b>   | <b>308,815,942.8</b>   | 4.0          | 142,438,010.8            | 3.3          | 101,476,828.0            | عقود للقيام بالبحث والتطوير المباشر                       | الحكومة                  |
|                         | R&D Contracts  | <b>1.9</b>   | <b>86,766,942.2</b>    | 0.2          | 5,946,101.4              | 0.6          | 19,154,459.9             | عقود للقيام بالبحث والتطوير المحلي                        | قطاع الأعمال المحلي      |
| <b>Local Businesses</b> | Non-Profit Organizations (including Foundations)                             | <b>3.3</b>   | <b>146,683,576.9</b>   | 12.7         | 449,391,922.5            | 27.8         | 850,534,219.7            | المنظمات غير الربحية (بما في ذلك المؤسسات)                | المؤسسات                 |
|                         | Individual Donations   | <b>0.0</b>   | <b>0.0</b>             | 0.0          | 1,236,000.3              | 0.0          | 1,164,500.0              | البرعات الفردية   | المصادر الوطنية الأخرى   |
| <b>Foreign sources</b>  | Other Higher Education institutions  | <b>0.0</b>   | <b>543,000.0</b>       | 0.1          | 2,330,270.5              | 0.1          | 1,635,600.0              | مؤسسات التعليم العالي الأخرى                              | المصادر الأجنبية         |
|                         | All other foreign sources  | <b>0.9</b>   | <b>41,796,727.7</b>    | 0.5          | 17,939,576.7             | 1.9          | 56,595,369.5             | جمع المصادر الأجنبية الأخرى                               | المجموع                  |
| <b>Total</b>            |  | <b>100.0</b> | <b>4,452,494,481.9</b> | <b>100.0</b> | <b>3,545,524,456.6</b>   | <b>100.0</b> | <b>3,054,536,835.4</b>   |   |                          |

**الإنفاق على البحث والتطوير حسب القطاع و المجال البحث**  
**RESEARCH AND DEVELOPMENT EXPENDITURE BY SECTOR AND FIELD OF SCIENCE**

2021

TABLE No. (6.1)

| Field of Science            | Sector                   | القطاع          |                          |   |                          |                                  |                          | جدول رقم (٦,١) |                       |
|-----------------------------|--------------------------|-----------------|--------------------------|---|--------------------------|----------------------------------|--------------------------|----------------|-----------------------|
|                             |                          | المجموع Total   |                          | قطاع التعليم العالي Higher Education Sector |                          | القطاع الحكومي Government Sector |                          |                |                       |
| %                           | (قيمة (ر.ق.) Value (QR)) | %               | (قيمة (ر.ق.) Value (QR)) | %   | (قيمة (ر.ق.) Value (QR)) | %                                | (قيمة (ر.ق.) Value (QR)) |                |                       |
| Natural Science             | 18.5                     | 825,207,578.4   | 17.0                     | 491,599,688.0                               | 25.1                     | 245,103,880.7                    | 15.4                     | 88,504,009.6   | العلوم الطبيعية       |
| Engineering and Technology  | 18.5                     | 825,900,271.3   | 14.6                     | 422,335,620.7                               | 6.5                      | 63,850,590.8                     | 58.9                     | 339,714,059.8  | الهندسة والإنكليوجيا  |
| Medical and Health Sciences | 15.5                     | 692,009,283.3   | 14.7                     | 425,583,041.5                               | 25.7                     | 251,282,970.1                    | 2.6                      | 15,143,271.6   | العلوم الطبية والصحية |
| Agriculture Science         | 2.2                      | 99,509,578.4    | 0.0                      | 1,281,876.6                                 | 5.1                      | 49,432,715.4                     | 8.5                      | 48,794,986.3   | العلوم الزراعية       |
| Social Science              | 32.9                     | 1,465,723,610.5 | 38.2                     | 1,106,900,471.0                             | 28.4                     | 278,059,024.3                    | 14.0                     | 80,764,115.3   | العلوم الاجتماعية     |
| Humanities                  | 12.2                     | 544,144,160.1   | 15.5                     | 450,152,343.6                               | 9.3                      | 90,626,645.0                     | 0.6                      | 3,365,171.5    | العلوم الإنسانية      |
| Total                       | 100.0                    | 4,452,494,481.9 | 100.0                    | 2,897,853,041.5                             | 100.0                    | 978,355,826.3                    | 100.0                    | 576,285,614.1  | المجموع               |

**الإنفاق على البحث والتطوير حسب مجال البحث في قطاع الاعمال**

**RESEARCH AND DEVELOPMENT EXPENDITURE  
BY FIELD OF SCIENCE IN BUSINESS SECTOR**

2012-2021

TABLE No. (6.2)

جدول رقم (٦.٢)

| Field of Science            | Year         |                            |              |                            | مجال البحث   | المستند                    |
|-----------------------------|--------------|----------------------------|--------------|----------------------------|--------------|----------------------------|
|                             | 2021         | 2018                       | 2015         | 2012                       |              |                            |
|                             | %            | القيمة (ر.ق)<br>Value (QR) | %            | القيمة (ر.ق)<br>Value (QR) | %            | القيمة (ر.ق)<br>Value (QR) |
| Natural Science             | 15.4         | 88,504,009.6               | 11.2         | 48,191,088.0               | 7.5          | 39,472,354.2               |
| Engineering and Technology  | 58.9         | 339,714,059.8              | 62.1         | 267,387,521.5              | 63.3         | 333,322,102.2              |
| Medical and Health Sciences | 2.6          | 15,143,271.6               | 6.8          | 29,206,720.0               | 12.5         | 65,787,257.0               |
| Agriculture Science         | 8.5          | 48,794,986.3               | 6.8          | 29,206,720.0               | 0.0          | 0.0                        |
| Social Science              | 14.0         | 80,764,115.3               | 10.8         | 46,730,752.0               | 16.7         | 87,716,342.7               |
| Humanities                  | 0.6          | 3,365,171.5                | 2.3          | 10,076,318.4               | 0.0          | 0.0                        |
| <b>Total</b>                | <b>100.0</b> | <b>576,285,614.1</b>       | <b>100.0</b> | <b>430,799,119.9</b>       | <b>100.0</b> | <b>526,298,056.1</b>       |
|                             |              |                            |              |                            |              | <b>المجموع</b>             |

**الإنفاق على البحث والتطوير حسب مجال البحث في القطاع الحكومي**

**RESEARCH AND DEVELOPMENT EXPENDITURE  
BY FIELD OF SCIENCE IN GOVERNMENT SECTOR**

2012-2021

TABLE No. (6.3)

جدول رقم (٦.٣)

| Field of Science            | Year  |                            |       |                            | مجال البحث | المستند                    |       |
|-----------------------------|-------|----------------------------|-------|----------------------------|------------|----------------------------|-------|
|                             | 2021  | 2018                       | 2015  | 2012                       |            |                            |       |
|                             | %     | القيمة (ر.ق)<br>Value (QR) | %     | القيمة (ر.ق)<br>Value (QR) | %          | القيمة (ر.ق)<br>Value (QR) |       |
| Natural Science             | 25.1  | 245,103,880.7              | 14.6  | 82,001,133.0               | 4.3        | 17,006,597.8               | 17.4  |
| Engineering and Technology  | 6.5   | 63,850,590.8               | 11.4  | 64,174,799.7               | 17.1       | 68,026,391.0               | 7.4   |
| Medical and Health Sciences | 25.7  | 251,282,970.1              | 33.9  | 190,741,765.9              | 46.8       | 185,655,358.8              | 46.5  |
| Agriculture Science         | 5.1   | 49,432,715.4               | 3.8   | 21,391,599.9               | 7.1        | 28,344,329.6               | 6.5   |
| Social Science              | 28.4  | 278,059,024.3              | 25.6  | 144,393,299.4              | 20.4       | 80,781,339.3               | 22.4  |
| Humanities                  | 9.3   | 90,626,645.0               | 10.8  | 60,609,533.1               | 4.3        | 17,006,597.8               | 0.0   |
| Total                       | 100.0 | 978,355,826.3              | 100.0 | 563,312,131.0              | 100.0      | 396,820,614.3              | 100.0 |
|                             |       |                            |       |                            |            | المجموع                    |       |

**الإتفاق على البحث والتطوير حسب مجال البحث في قطاع التعليم العالي**

**RESEARCH AND DEVELOPMENT EXPENDITURE  
BY FIELD OF SCIENCE IN HIGHER EDUCATION SECTOR**

2012-2021

TABLE No. (6.4)

جدول رقم (٦.٤)

| Field of Science            | Year         |                            |              |                            | مجال البحث   | المستند                    |
|-----------------------------|--------------|----------------------------|--------------|----------------------------|--------------|----------------------------|
|                             | 2021         | 2018                       | 2015         | 2012                       |              |                            |
|                             | %            | القيمة (ر.ق)<br>Value (QR) | %            | القيمة (ر.ق)<br>Value (QR) | %            | القيمة (ر.ق)<br>Value (QR) |
| Natural Science             | 17.0         | 491,599,688.0              | 14.8         | 376,358,421.7              | 4.7          | 99,709,470.4               |
| Engineering and Technology  | 14.6         | 422,335,620.7              | 14.9         | 381,246,418.5              | 23.0         | 489,533,560.2              |
| Medical and Health Sciences | 14.7         | 425,583,041.5              | 12.4         | 317,043,793.6              | 15.0         | 318,719,713.6              |
| Agriculture Science         | 0.0          | 1,281,876.6                | 0.0          | 0.0                        | 0.0          | 99,599.9                   |
| Social Science              | 38.2         | 1,106,900,471.0            | 36.1         | 920,399,400.8              | 32.6         | 694,510,176.0              |
| Humanities                  | 15.5         | 450,152,343.6              | 21.8         | 556,364,971.1              | 24.8         | 528,845,644.9              |
| <b>Total</b>                | <b>100.0</b> | <b>2,897,853,041.5</b>     | <b>100.0</b> | <b>2,551,413,005.7</b>     | <b>100.0</b> | <b>1,362,982,965.7</b>     |
|                             |              |                            |              |                            |              | <b>المجموع</b>             |

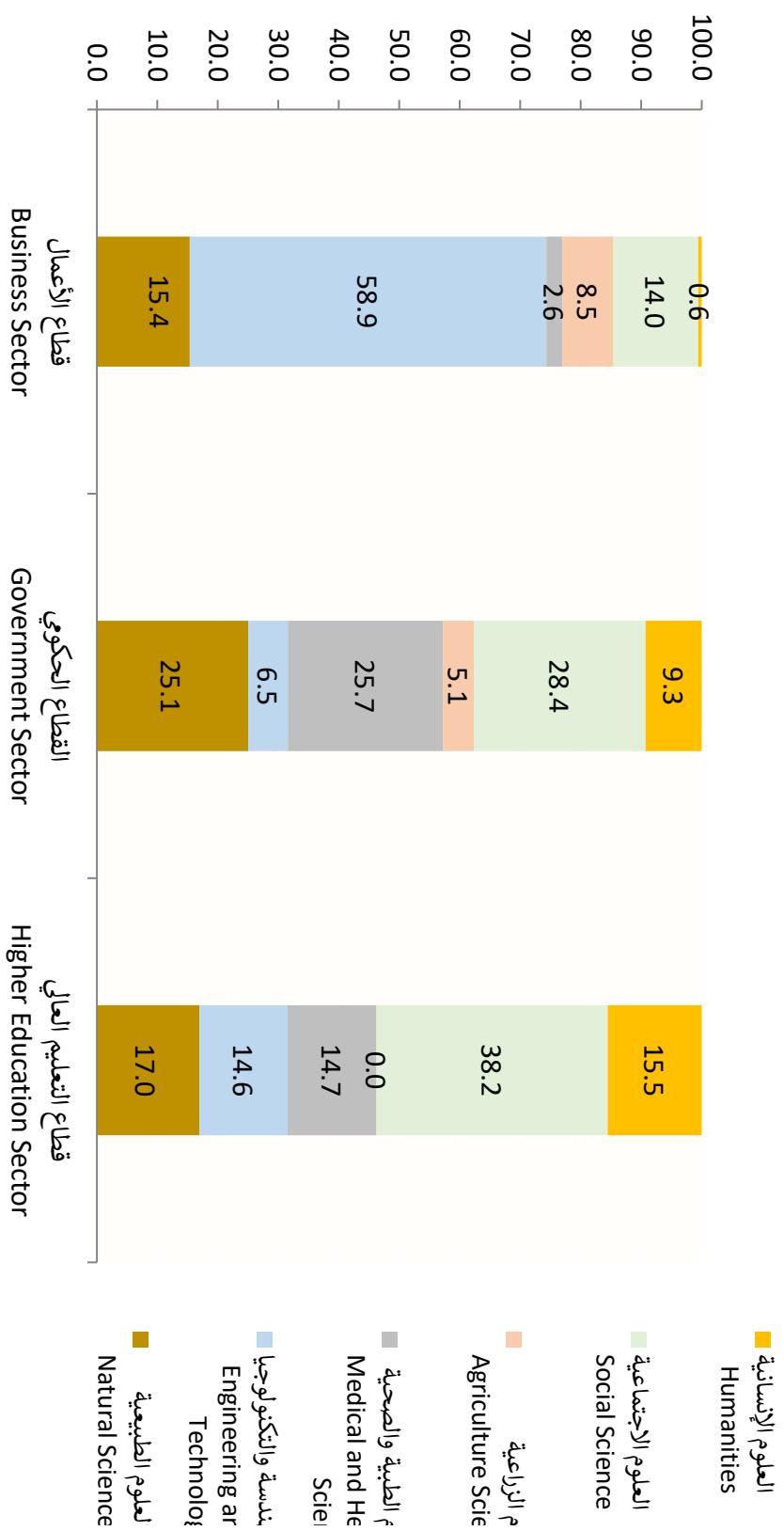
**مُجمُوع الإنفاق على البحث والتطوير حسب مجال البحث**  
**TOTAL OF RESEARCH AND DEVELOPMENT EXPENDITURE**  
**BY FIELD OF SCIENCE**

2012-2021

TABLE No. (6.5)

| Field of Science            | Year         |                        |              |                        |                          | المسنة                 | جدول رقم (٦.٥) |                       |
|-----------------------------|--------------|------------------------|--------------|------------------------|--------------------------|------------------------|----------------|-----------------------|
|                             | 2021         | 2018                   | 2015         | 2012                   | القيمة (ر.ق.) Value (QR) |                        |                |                       |
|                             | %            | %                      | %            | %                      | القيمة (ر.ق.) Value (QR) |                        |                |                       |
| Natural Science             | 18.5         | 825,207,578.4          | 14.3         | 506,550,642.6          | 5.1                      | 156,188,422.4          | 19.8           | العلوم الطبيعية       |
| Engineering and Technology  | 18.5         | 825,900,271.3          | 20.1         | 712,808,739.7          | 29.2                     | 890,882,053.4          | 21.1           | الهندسة والتقنيات     |
| Medical and Health Sciences | 15.5         | 692,009,283.3          | 15.1         | 536,992,279.5          | 18.7                     | 570,162,329.5          | 26.6           | العلوم الطبية والصحية |
| Agriculture Science         | 2.2          | 99,509,578.4           | 1.4          | 50,598,319.9           | 0.9                      | 28,443,929.5           | 2.2            | العلوم الزراعية       |
| Social Science              | 32.9         | 1,465,723,610.5        | 31.4         | 1,111,523,452.2        | 28.3                     | 863,007,858.0          | 20.7           | العلوم الاجتماعية     |
| Humanities                  | 12.2         | 544,144,160.1          | 17.7         | 627,050,822.6          | 17.9                     | 545,852,242.6          | 9.6            | العلوم الإنسانية      |
| <b>Total</b>                | <b>100.0</b> | <b>4,452,494,481.9</b> | <b>100.0</b> | <b>3,545,524,256.6</b> | <b>100.0</b>             | <b>3,054,536,835.4</b> | <b>100.0</b>   | <b>المجموع</b>        |

**الإنفاق على البحث والتطوير حسب القطاع ومجال البحث**  
**EXPENDITURE ON RESEARCH AND DEVELOPMENT BY SECTOR AND FIELD OF SCIENCE**  
**2021**



الشكل رقم (4) (ج)

**الإنفاق على البحث والتطوير حسب القطاع وتصنيف الأهداف الاجتماعية والإقتصادية**  
**RESEARCH AND DEVELOPMENT EXPENDITURE BY SECTOR AND SOCIO-ECONOMIC OBJECTIVE**  
**2021**

TABLE No. (7.1)

| Objective  | Sector | المجموع         |                             |                 |                             |               |                             | القطاع        |
|--|--------|-----------------|-----------------------------|-----------------|-----------------------------|---------------|-----------------------------|---------------|
|  |        | %               | المقيمة (ر.ق)<br>Value (QR) | %               | المقيمة (ر.ق)<br>Value (QR) | %             | المقيمة (ر.ق)<br>Value (QR) |               |
| Land exploration and exploitation                      | 0.7    | 31,727,780.2    | 0.1                         | 3,458,104.6     | 1.6                         | 15,653,693.2  | 2.2                         | 12,615,982.4  |
| Culture, recreation, religion and mass media           | 15.0   | 668,742,439.7   | 20.6                        | 595,663,352.2   | 5.4                         | 52,831,214.6  | 3.5                         | 20,247,872.9  |
| Political and social systems, structures and processes | 10.6   | 470,983,566.6   | 10.0                        | 290,442,150.8   | 13.2                        | 129,142,969.1 | 8.9                         | 51,398,446.7  |
| General advancement of knowledge                       | 17.4   | 772,995,547.3   | 22.9                        | 663,956,088.9   | 8.2                         | 80,225,177.8  | 5.0                         | 28,814,280.7  |
| Defence  | 0.7    | 31,080,122.3    | 0.4                         | 11,591,412.2    | 0.4                         | 3,913,423.3   | 2.7                         | 15,575,286.9  |
| Environment  | 5.4    | 239,981,680.6   | 4.7                         | 137,300,277.1   | 4.0                         | 39,134,233.1  | 11.0                        | 63,547,170.4  |
| Transport, telecommunication and other infrastructures | 4.1    | 182,974,802.6   | 2.0                         | 57,261,576.1    | 3.6                         | 35,220,809.7  | 15.7                        | 90,492,416.7  |
| Energy   | 7.3    | 323,361,457.6   | 6.7                         | 193,190,202.8   | 2.4                         | 23,480,539.8  | 18.5                        | 106,690,715.1 |
| Industrial production and technology                   | 6.8    | 301,488,505.8   | 5.6                         | 161,874,070.9   | 4.4                         | 43,047,656.4  | 16.8                        | 96,566,778.6  |
| Health   | 20.4   | 908,158,062.2   | 17.6                        | 508,785,718.0   | 37.0                        | 361,991,655.7 | 6.5                         | 37,380,683.5  |
| Agriculture  | 1.8    | 81,187,507.6    | 0.0                         | 0.0             | 4.0                         | 39,134,233.1  | 7.3                         | 42,053,274.5  |
| Education  | 9.9    | 439,813,009.3   | 9.5                         | 274,330,087.9   | 15.8                        | 154,580,220.6 | 1.9                         | 10,902,700.8  |
| Total  | 100.0  | 4,452,494,481.9 | 100.0                       | 2,897,853,041.5 | 100.0                       | 978,355,826.3 | 100.0                       | 576,285,614.1 |
|  |        |                 |                             |                 |                             |               |                             | المجموع       |

جدول رقم (٧.١)

## الإنفاق على البحث والتطوير حسب تصنيف الأهداف الاجتماعية والاقتصادية في قطاع الأعمال

### RESEARCH AND DEVELOPMENT EXPENDITURE BY SOCIO-ECONOMIC OBJECTIVE IN BUSINESS SECTOR 2012-2021

TABLE NO. (7.2)

| Objective  | Year                       |               |                            |               |                            |               |                            |               | السنة   |
|--|----------------------------|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|---------------|---|
|  | 2021                       |               | 2018                       |               | 2015                       |               | 2012                       |               |   |
| %  | القيمة (ر.ق)<br>Value (QR) | %             | القيمة (ر.ق)<br>Value (QR) | %             | القيمة (ر.ق)<br>Value (QR) | %             | القيمة (ر.ق)<br>Value (QR) |               |   |
| Land exploration and exploitation                      | 2.2                        | 12,615,982.4  | 0.0                        | 0.0           | 1.2                        | 6,315,576.7   | 11.8                       | 99,414,706.6  | اسكشاف واستغلال الأرض                         |
| Culture, recreation, religion and mass media           | 3.5                        | 20,247,872.9  | 6.7                        | 28,719,941.3  | 0.0                        | 0.0           | 0.0                        | 0.0           | الثقافة والتربية والدين ووسائل الإعلام        |
| Political and social systems, structures and processes | 8.9                        | 51,398,446.7  | 6.7                        | 28,719,941.3  | 10.3                       | 54,377,115.2  | 4.7                        | 39,765,882.7  | النظم والهيئات والعمليات السياسية والاجتماعية |
| General advancement of knowledge                       | 5.0                        | 28,814,280.7  | 8.3                        | 35,899,926.7  | 0.8                        | 4,210,384.4   | 4.5                        | 38,236,425.6  | التقدم العام لل المعارف                       |
| Defence  | 2.7                        | 15,575,286.9  | 3.3                        | 14,359,970.7  | 0.0                        | 0.0           | 0.0                        | 0.0           | الدفاع  |
| Environment  | 11.0                       | 63,547,170.4  | 7.7                        | 33,027,932.5  | 19.6                       | 103,154,419.0 | 30.0                       | 252,360,409.1 | البيئة  |
| Transport, telecommunication and other infrastructures | 15.7                       | 90,492,416.7  | 18.7                       | 80,415,835.7  | 16.0                       | 84,207,689.0  | 3.6                        | 30,589,140.5  | النقل والاتصالات والبني التحتية الأخرى        |
| Energy   | 18.5                       | 106,690,715.1 | 11.7                       | 50,259,897.3  | 22.7                       | 119,574,918.3 | 14.5                       | 122,356,562.0 | الطاقة  |
| Industrial production and technology                   | 16.8                       | 96,566,778.6  | 20.3                       | 87,595,821.0  | 6.0                        | 31,577,883.4  | 7.1                        | 59,648,824.0  | الإنتاج الصناعي والتكنولوجيا                  |
| Health   | 6.5                        | 37,380,688.5  | 11.7                       | 50,259,897.3  | 17.0                       | 89,470,669.5  | 12.7                       | 107,061,991.8 | الصحة   |
| Agriculture  | 7.3                        | 42,053,274.5  | 3.3                        | 14,359,970.7  | 0.0                        | 0.0           | 0.0                        | 0.0           | الزراعة                                       |
| Education  | 1.9                        | 10,902,700.8  | 1.7                        | 7,179,985.3   | 6.3                        | 33,409,400.6  | 10.9                       | 91,767,421.5  | التعليم                                       |
| Total  | 100.0                      | 576,285,614.1 | 100.0                      | 430,799,119.9 | 100.0                      | 526,298,056.1 | 100.0                      | 841,201,363.8 | المجموع                                       |

# الإنفاق على البحث والتطوير حسب تصنيف الأهداف الاقتصادية والاجتماعية في القطاع الحكومي

## RESEARCH AND DEVELOPMENT EXPENDITURE BY SOCIO-ECONOMIC OBJECTIVE IN GOVERNMENT SECTOR 2012-2021

TABLE No. (7.3)

| Objective  | Year                     |               |                          |               |                          |               | الأهداف                  | السنة           |  |
|--|--------------------------|---------------|--------------------------|---------------|--------------------------|---------------|--------------------------|-----------------|--|
|  | 2021                     | 2018          | 2015                     | 2012          | 2015                     | 2012          |                          |                 |  |
| %  | القيمة (ر.ق.) Value (QR) | %             | القيمة (ر.ق.) Value (QR) | %             | القيمة (ر.ق.) Value (QR) | %             | القيمة (ر.ق.) Value (QR) |                 |  |
| Land exploration and exploitation                      | 1.6                      | 15,653,693.2  | 2.5                      | 14,082,803.3  | 2.7                      | 10,581,883.0  | 2.9                      | 30,901,525.1    | استكشاف واستغلال الأرض                       |
| Culture, recreation, religion and mass media           | 5.4                      | 52,831,214.6  | 5.2                      | 29,221,816.8  | 3.3                      | 13,227,353.8  | 0.9                      | 9,270,457.5     | الثقافة والتزفيف والدين ووسائل الإعلام       |
| Political and social systems, structures and processes | 13.2                     | 129,142,969.1 | 2.5                      | 14,082,803.3  | 11.1                     | 43,914,814.6  | 6.0                      | 63,039,111.2    | النظم والهيكل والعمليات السياسية والاجتماعية |
| General advancement of knowledge                       | 8.2                      | 80,225,177.8  | 19.7                     | 110,902,075.8 | 2.3                      | 8,994,600.6   | 13.5                     | 142,147,015.5   | التقدم العلمي للمعارف                        |
| Defence  | 0.4                      | 3,913,423.3   | 0.0                      | 0.0           | 0.0                      | 0.0           | 0.0                      | 0.0             | الدفاع                                       |
| Environment  | 4.0                      | 39,134,233.1  | 6.3                      | 35,207,008.2  | 10.0                     | 39,682,061.4  | 5.1                      | 53,768,653.7    | البيئة                                       |
| Transport, telecommunication and other infrastructures | 3.6                      | 35,220,809.7  | 8.8                      | 49,289,811.5  | 2.7                      | 10,581,883.0  | 1.5                      | 15,450,762.6    | النقل والاتصالات والبني التحتية الأخرى       |
| Energy   | 2.4                      | 23,480,559.8  | 0.0                      | 0.0           | 6.7                      | 26,454,707.6  | 3.1                      | 32,755,616.6    | الطاقة                                       |
| Industrial production and technology                   | 4.4                      | 43,047,656.4  | 0.6                      | 3,390,434.9   | 6.7                      | 26,454,707.6  | 1.5                      | 15,450,762.6    | الإنتاج الصناعي والتكنولوجيا                 |
| Health   | 37.0                     | 361,991,655.7 | 35.4                     | 199,567,405.2 | 45.7                     | 181,214,747.2 | 38.4                     | 403,573,917.8   | الصحة  |
| Agriculture  | 4.0                      | 39,134,233.1  | 3.8                      | 21,124,204.9  | 6.7                      | 26,454,707.6  | 7.6                      | 80,343,965.3    | الزراعة                                      |
| Education  | 15.8                     | 154,580,220.6 | 15.3                     | 86,443,767.2  | 2.3                      | 9,259,147.7   | 19.4                     | 203,950,065.7   | التعليم                                      |
| Total  | 100.0                    | 978,355,826.3 | 100.0                    | 56,312,131.0  | 100.0                    | 396,820,614.3 | 100.0                    | 1,050,651,853.5 | المجموع                                      |

الإنفاق على البحث والتطوير حسب تصنيف الأهداف الاجتماعية والاقتصادية في قطاع التعليم العالي

**RESEARCH AND DEVELOPMENT EXPENDITURE  
BY SOCIO-ECONOMIC OBJECTIVE IN HIGHER EDUCATION SECTOR  
2012-2021**

TABLE No. (7.4)

| Objective  | Year                      |                 |                           |                 |                           |                 | الأهداف<br>الاجتماعية     | السنة                                  |
|--|---------------------------|-----------------|---------------------------|-----------------|---------------------------|-----------------|---------------------------|--|
|  | 2021                      | 2018            | 2015                      | 2012            | 2015                      | 2012            |                           |  |
| %  | قيمة (ر.ق.)<br>Value (QR) | %               | قيمة (ر.ق.)<br>Value (QR) | %               | قيمة (ر.ق.)<br>Value (QR) | %               | قيمة (ر.ق.)<br>Value (QR) |  |
| Land exploration and exploitation                      | 0.1                       | 3,458,104.6     | 0.0                       | 0.0             | 0.0                       | 10.0            | 136,298,296.6             | استكشاف واستغلال الأرض                 |
| Culture, recreation, religion and mass media           | 20.6                      | 595,663,352.2   | 19.6                      | 498,896,920.6   | 24.2                      | 515,415,665.4   | 30.0                      | 408,894,889.7                          |
| Political and social systems, structures and processes | 10.0                      | 290,442,150.8   | 5.8                       | 147,168,691.4   | 12.1                      | 257,707,832.7   | 6.0                       | 81,778,977.9                           |
| General advancement of knowledge                       | 22.9                      | 663,956,088.9   | 13.8                      | 349,687,098.8   | 17.3                      | 369,122,873.1   | 14.0                      | 190,817,615.2                          |
| Defence  | 0.4                       | 11,591,412.2    | 0.4                       | 10,684,042.0    | 0.0                       | 0.0             | 0.0                       | الدفاع                                 |
| Environment  | 4.7                       | 137,300,277.1   | 4.3                       | 109,439,671.6   | 5.4                       | 114,321,519.8   | 0.0                       | البيئة                                 |
| Transport, telecommunication and other infrastructures | 2.0                       | 57,261,576.1    | 1.4                       | 35,719,782.1    | 7.1                       | 152,105,750.9   | 0.0                       | النقل والاتصالات والبني التحتية الأخرى |
| Energy   | 6.7                       | 193,190,202.8   | 6.1                       | 155,365,105.7   | 5.8                       | 123,040,957.7   | 0.0                       | الطاقة                                 |
| Industrial production and technology                   | 5.6                       | 161,874,070.9   | 2.3                       | 58,841,962.4    | 1.9                       | 39,721,884.0    | 5.5                       | 74,964,063.1                           |
| Health   | 17.6                      | 508,785,718.0   | 17.2                      | 437,519,491.5   | 16.9                      | 359,434,608.7   | 20.9                      | 284,863,439.8                          |
| Agriculture  | 0.0                       | 0.0             | 0.0                       | 0.0             | 0.4                       | 7,750,611.5     | 0.0                       | الزراعة                                |
| Education  | 9.5                       | 274,330,087.9   | 29.0                      | 737,836,748.6   | 9.0                       | 192,796,461.3   | 13.6                      | 185,365,683.3                          |
| Total  | 100.0                     | 2,897,853,041.5 | 100.0                     | 2,541,159,514.7 | 100.0                     | 2,131,418,165.0 | 100.0                     | 1,362,982,965.7                        |
|  |                           |                 |                           |                 |                           |                 |                           | المجموع                                |

**مجمع الإنفاق على البحث والتطوير حسب تصنيف الأهداف الاجتماعية والاقتصادية**

**TOTAL OF RESEARCH AND DEVELOPMENT EXPENDITURE  
BY SOCIO-ECONOMIC OBJECTIVE  
2012-2021**

TABLE No. (7.5)

| Objective  | Year                       |                 |                            |                 |                            |                 | السنة                      |                 |
|--|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|
|  | 2021                       | 2018            | 2015                       | 2012            | 2009                       | 2006            |                            |                 |
| %  | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) | %               | القيمة (ر.ق)<br>Value (QR) |                 |
| Land exploration and exploitation                      | 0.7                        | 31,727,780.2    | 0.4                        | 14,082,803.3    | 0.6                        | 16,897,459.7    | 8.2                        | 266,614,528.0   |
| Culture, recreation, religion and mass media           | 15.0                       | 668,742,439.7   | 15.8                       | 556,838,678.7   | 17.3                       | 528,643,019.2   | 12.8                       | 418,165,347.0   |
| Political and social systems, structures and processes | 10.6                       | 470,983,566.6   | 5.4                        | 189,971,436.0   | 11.7                       | 355,999,762.5   | 5.7                        | 184,583,972.0   |
| General advancement of knowledge                       | 17.4                       | 772,995,547.3   | 14.0                       | 496,489,101.2   | 12.5                       | 382,327,858.2   | 11.4                       | 371,201,056.0   |
| Defence  | 0.7                        | 31,080,122.3    | 0.7                        | 25,044,012.6    | 0.0                        | 0.0             | 0.0                        | 0.0             |
| Environment  | 5.4                        | 239,981,680.6   | 5.0                        | 177,674,612.3   | 8.4                        | 257,158,000.2   | 9.4                        | 306,129,063.0   |
| Transport, telecommunication and other infrastructures | 4.1                        | 182,974,802.6   | 4.7                        | 165,425,429.3   | 8.1                        | 246,895,322.9   | 1.4                        | 46,039,903.0    |
| Energy   | 7.3                        | 323,361,457.6   | 5.8                        | 205,625,003.0   | 8.8                        | 269,070,583.7   | 4.8                        | 155,112,179.0   |
| Industrial production and technology                   | 6.8                        | 301,488,505.8   | 4.2                        | 149,828,218.4   | 3.2                        | 97,754,475.0    | 4.6                        | 150,063,650.0   |
| Health   | 20.4                       | 908,158,062.2   | 19.4                       | 687,346,794.0   | 20.6                       | 630,120,025.5   | 24.4                       | 795,499,349.0   |
| Agriculture  | 1.8                        | 81,187,507.6    | 1.0                        | 35,484,175.6    | 1.1                        | 34,205,319.3    | 2.5                        | 80,343,965.0    |
| Education  | 9.9                        | 439,813,009.3   | 23.5                       | 831,460,501.1   | 7.7                        | 235,465,009.6   | 14.8                       | 481,083,171.0   |
| Total  | 100.0                      | 4,452,494,481.9 | 100.0                      | 3,535,270,765.5 | 100.0                      | 3,054,536,835.5 | 100.0                      | 3,254,836,183.0 |
|  |                            |                 |                            |                 |                            |                 |                            | المجموع         |

موظفو البحث والتطوير حسب القطاع والنوع والمهنة

RESEARCH AND DEVELOPMENT PERSONNEL BY SECTOR, GENDER, NATIONALITY AND OCCUPATION  
2021

TABLE No. (8.1)

| Occupation    | Gender  | المجموع    |         |         | قطاع التعليم العالي |             |         | القطاع الحكومي |             |         | قطاع الأعمال |             |         | نوع     | المهنة      | جدول رقم (١١،٨) |             |
|---------------|---------|------------|---------|---------|---------------------|-------------|---------|----------------|-------------|---------|--------------|-------------|---------|---------|-------------|-----------------|-------------|
|               |         | المجموع    |         | المجموع | المجموع             |             | المجموع | المجموع        |             | المجموع | المجموع      |             | المجموع | المهنة  |             |                 |             |
|               |         | غير قطريين | قطريين  |         | قطريين              | غير قطريين  |         | قطريين         | غير قطريين  |         | قطريين       | غير قطريين  | قطريين  |         |             |                 |             |
| Researchers   |         | Total      | Qataris | Total   | Qataris             | Non-Qataris | Total   | Qataris        | Non-Qataris | Total   | Qataris      | Non-Qataris | Total   | Qataris | Non-Qataris |                 |             |
|               | Males   | 2,371      | 2,074   | 297     | 1,616               | 1,461       | 155     | 351            | 269         | 82      | 404          | 344         | 60      | ذكر     | إناث        |                 |             |
|               | Females | 1,109      | 625     | 484     | 575                 | 397         | 178     | 421            | 159         | 262     | 113          | 69          | 44      | ذكر     | إناث        |                 |             |
|               | Total   | 3,480      | 2,699   | 781     | 2,191               | 1,858       | 333     | 772            | 428         | 344     | 517          | 413         | 104     | ذكر     | إناث        | الباحثون        |             |
| Technicians   |         | Males      | 851     | 792     | 59                  | 253         | 230     | 23             | 125         | 108     | 17           | 473         | 454     | 19      | ذكر         | إناث            | الفنيون     |
|               | Females | 419        | 313     | 106     | 193                 | 145         | 48      | 203            | 150         | 53      | 23           | 18          | 5       | 5       | ذكر         | إناث            | الفنيون     |
|               | Total   | 1,270      | 1,105   | 165     | 446                 | 375         | 71      | 328            | 258         | 70      | 496          | 472         | 24      | 24      | المجموع     | المجموع         | الفنيون     |
| Support Staff |         | Males      | 495     | 440     | 55                  | 72          | 59      | 13             | 120         | 88      | 32           | 303         | 293     | 10      | ذكر         | إناث            | موظفو الدعم |
|               | Females | 383        | 258     | 125     | 169                 | 108         | 61      | 174            | 110         | 64      | 40           | 40          | 0       | 0       | ذكر         | إناث            | موظفو الدعم |
|               | Total   | 878        | 698     | 180     | 241                 | 167         | 74      | 294            | 198         | 96      | 343          | 333         | 10      | 10      | المجموع     | المجموع         | موظفو الدعم |
|               | Males   | 3,717      | 3,306   | 411     | 1,941               | 1,750       | 191     | 596            | 465         | 131     | 1,180        | 1,091       | 89      | 89      | ذكر         | إناث            | موظفو الدعم |
|               | Females | 1,911      | 1,196   | 715     | 937                 | 650         | 287     | 798            | 419         | 379     | 176          | 127         | 49      | 49      | إناث        | إناث            | موظفو الدعم |
|               | Total   | 5,628      | 4,502   | 1,126   | 2,878               | 2,400       | 478     | 1,394          | 884         | 510     | 1,356        | 1,218       | 138     | 138     | المجموع     | المجموع         | موظفو الدعم |

**موظفو البحث والتطوير حسب الجنسية والنوع والمهنة في قطاع الاعمال**

**RESEARCH AND DEVELOPMENT PERSONNEL BY GENDER,  
NATIONALITY AND OCCUPATION IN BUSINESS SECTOR  
2012-2021**

**TABLE No. (8.2)**

| Occupation    | Gender  | 2021    |                           | 2018    |                   | 2015    |                   | 2012    |                   | نوع | المهنة | جدول رقم (٨,٢) |
|---------------|---------|---------|---------------------------|---------|-------------------|---------|-------------------|---------|-------------------|-----|--------|----------------|
|               |         | المجموع | غير قطريين<br>Non-Qataris | المجموع | قطريين<br>Qataris | المجموع | قطريين<br>Qataris | المجموع | قطريين<br>Qataris |     |        |                |
| Researchers   | Males   | 404     | 344                       | 60      | 218               | 193     | 25                | 275     | 252               | 23  | 273    | 229            |
|               | Females | 113     | 69                        | 44      | 60                | 46      | 14                | 65      | 46                | 19  | 84     | 75             |
|               | Total   | 517     | 413                       | 104     | 278               | 239     | 39                | 340     | 298               | 42  | 357    | 304            |
| Technicians   | Males   | 473     | 454                       | 19      | 65                | 60      | 5                 | 58      | 49                | 9   | 60     | 48             |
|               | Females | 23      | 18                        | 5       | 56                | 50      | 6                 | 43      | 27                | 16  | 13     | 8              |
|               | Total   | 496     | 472                       | 24      | 121               | 110     | 11                | 101     | 76                | 25  | 73     | 56             |
| Support Staff | Males   | 303     | 293                       | 10      | 94                | 91      | 3                 | 69      | 43                | 26  | 155    | 129            |
|               | Females | 40      | 40                        | 0       | 35                | 33      | 2                 | 59      | 28                | 31  | 62     | 52             |
|               | Total   | 343     | 333                       | 10      | 129               | 124     | 5                 | 128     | 71                | 57  | 217    | 181            |
| Total         | Males   | 1,180   | 1,091                     | 89      | 377               | 344     | 33                | 402     | 344               | 58  | 488    | 406            |
|               | Females | 176     | 127                       | 49      | 151               | 129     | 22                | 167     | 101               | 66  | 159    | 135            |
|               | Total   | 1,356   | 1,218                     | 138     | 528               | 473     | 55                | 569     | 445               | 124 | 647    | 541            |

**موظفو البحث والتطوير حسب الجنسية والنوع والمهنة في القطاع الحكومي**

**RESEARCH AND DEVELOPMENT PERSONNEL BY GENDER,  
NATIONALITY AND OCCUPATION IN GOVERNMENT SECTOR  
2012-2021**

TABLE No. (8.3)

| Occupation    | Gender  | 2021    |                           | 2018    |                           | 2015    |                           | 2012    |                           | نوع | المهنة | جدول رقم (٨,٣) |     |
|---------------|---------|---------|---------------------------|---------|---------------------------|---------|---------------------------|---------|---------------------------|-----|--------|----------------|-----|
|               |         | المجموع | غير قطريين<br>Non-Qataris |     |        |                |     |
| Researchers   | Males   | 351     | 269                       | 82      | 254                       | 211     | 43                        | 390     | 324                       | 66  | 428    | 393            | 35  |
|               | Females | 421     | 159                       | 262     | 174                       | 72      | 102                       | 272     | 130                       | 142 | 131    | 78             | 53  |
|               | Total   | 772     | 428                       | 344     | 428                       | 283     | 145                       | 662     | 454                       | 208 | 559    | 471            | 88  |
| Technicians   | Males   | 125     | 108                       | 17      | 76                        | 62      | 14                        | 116     | 96                        | 20  | 87     | 76             | 11  |
|               | Females | 203     | 150                       | 53      | 117                       | 79      | 38                        | 58      | 30                        | 28  | 49     | 22             | 27  |
|               | Total   | 328     | 258                       | 70      | 193                       | 141     | 52                        | 174     | 126                       | 48  | 136    | 98             | 38  |
| Support Staff | Males   | 120     | 88                        | 32      | 39                        | 31      | 8                         | 36      | 28                        | 8   | 47     | 34             | 13  |
|               | Females | 174     | 110                       | 64      | 85                        | 66      | 19                        | 70      | 43                        | 27  | 66     | 52             | 14  |
|               | Total   | 294     | 198                       | 96      | 124                       | 97      | 27                        | 106     | 71                        | 35  | 113    | 86             | 27  |
| Total         | Males   | 596     | 465                       | 131     | 369                       | 304     | 65                        | 542     | 448                       | 94  | 562    | 503            | 59  |
|               | Females | 798     | 419                       | 379     | 376                       | 217     | 159                       | 400     | 203                       | 197 | 246    | 152            | 94  |
|               | Total   | 1,394   | 884                       | 510     | 745                       | 521     | 224                       | 942     | 651                       | 291 | 808    | 655            | 153 |

**موظفو البحث والتطوير حسب الجنسية والنوع والمهنة في قطاع التعليم العالي**

**RESEARCH AND DEVELOPMENT PERSONNEL BY GENDER,  
NATIONALITY AND OCCUPATION IN HIGHER EDUCATION SECTOR**

2012-2021

TABLE No. (8.4)

| Occupation    | Gender  | 2021    |            |        | 2018    |            |        | 2015    |            |        | 2012    |            |        | نوع         | المهنة   | جدول رقم (٨,٤) |
|---------------|---------|---------|------------|--------|---------|------------|--------|---------|------------|--------|---------|------------|--------|-------------|----------|----------------|
|               |         | المجموع | غير قطريين | قطريون |             |          |                |
| Researchers   | Males   | 1,616   | 1,461      | 155    | 1,575   | 1,415      | 160    | 1,288   | 1,171      | 117    | 647     | 611        | 36     | ذكور        | إذاث     |                |
|               | Females | 575     | 397        | 178    | 824     | 570        | 254    | 557     | 394        | 163    | 162     | 109        | 53     | إناث        | الباحثون |                |
|               | Total   | 2,191   | 1,858      | 333    | 2,399   | 1,985      | 414    | 1,845   | 1,565      | 280    | 809     | 720        | 89     | المجموع     | المجموع  |                |
| Technicians   | Males   | 253     | 230        | 23     | 497     | 449        | 48     | 437     | 408        | 29     | 268     | 260        | 8      | ذكور        | إذاث     |                |
|               | Females | 193     | 145        | 48     | 346     | 300        | 46     | 368     | 338        | 30     | 118     | 108        | 10     | إناث        | الفنيون  |                |
|               | Total   | 446     | 375        | 71     | 843     | 749        | 94     | 805     | 746        | 59     | 386     | 368        | 18     | المجموع     | المجموع  |                |
| Support Staff | Males   | 72      | 59         | 13     | 198     | 148        | 50     | 156     | 116        | 40     | 271     | 265        | 6      | ذكور        | إذاث     |                |
|               | Females | 169     | 108        | 61     | 398     | 260        | 138    | 403     | 278        | 125    | 117     | 94         | 23     | موظفو الدعم | إذاث     |                |
|               | Total   | 241     | 167        | 74     | 596     | 408        | 188    | 559     | 394        | 165    | 388     | 359        | 29     | المجموع     | المجموع  |                |
| Total         | Males   | 1,941   | 1,750      | 191    | 2,270   | 2,012      | 258    | 1,881   | 1,695      | 186    | 1,186   | 1,136      | 50     | ذكور        | إذاث     |                |
|               | Females | 937     | 650        | 287    | 1,568   | 1,130      | 438    | 1,328   | 1,010      | 318    | 397     | 311        | 86     | إناث        | المجموع  |                |
|               | Total   | 2,878   | 2,400      | 478    | 3,838   | 3,142      | 696    | 3,209   | 2,705      | 504    | 1,583   | 1,447      | 136    | المجموع     | المجموع  |                |

**مجموع موظفو البحث والنوع والمهنة**  
**TOTAL OF RESEARCH AND DEVELOPMENT PERSONNEL BY GENDER,**  
**NATIONALITY AND OCCUPATION**

2012-2021

TABLE No. (8.5)

| Occupation    | Gender  | 2021    |            |        | 2018    |            |        | 2015    |            |        | 2012    |            |        | نوع     | المهنة   | جدول رقم (٨,٥) |
|---------------|---------|---------|------------|--------|---------|------------|--------|---------|------------|--------|---------|------------|--------|---------|----------|----------------|
|               |         | المجموع | غير قطريين | قطريون |         |          |                |
| Researchers   | Males   | 2,371   | 2,074      | 297    | 2,047   | 1,819      | 228    | 1,953   | 1,747      | 206    | 1,348   | 1,233      | 115    | ذكور    | إذاث     |                |
|               | Females | 1,109   | 625        | 484    | 1,058   | 688        | 370    | 894     | 570        | 324    | 377     | 262        | 115    | ذكور    | الباحثون |                |
| Technicians   | Total   | 3,480   | 2,699      | 781    | 3,105   | 2,507      | 598    | 2,847   | 2,317      | 530    | 1,725   | 1,495      | 230    | المجموع | الفنيون  |                |
|               | Males   | 851     | 792        | 59     | 638     | 571        | 67     | 611     | 553        | 58     | 415     | 384        | 31     | ذكور    | إناث     |                |
| Support Staff | Females | 419     | 313        | 106    | 519     | 429        | 90     | 469     | 395        | 74     | 180     | 138        | 42     | ذكور    | إناث     | المجموع        |
|               | Total   | 1,270   | 1,105      | 165    | 1,157   | 1,000      | 157    | 1,080   | 948        | 132    | 595     | 522        | 73     | ذكور    | إناث     | موظفو الدعم    |
| Support Staff | Males   | 495     | 440        | 55     | 331     | 270        | 61     | 261     | 187        | 74     | 473     | 428        | 45     | ذكور    | إناث     |                |
|               | Females | 383     | 258        | 125    | 518     | 359        | 159    | 532     | 349        | 183    | 245     | 198        | 47     | ذكور    | إناث     | موظفو الدعم    |
| Total         | Total   | 878     | 698        | 180    | 849     | 629        | 220    | 793     | 536        | 257    | 718     | 626        | 92     | المجموع | المجموع  |                |
|               | Males   | 3,717   | 3,306      | 411    | 3,016   | 2,660      | 356    | 2,825   | 2,487      | 338    | 2,236   | 2,045      | 191    | ذكور    | إناث     | المجموع        |
| Total         | Females | 1,911   | 1,196      | 715    | 2,095   | 1,476      | 619    | 1,895   | 1,314      | 581    | 802     | 598        | 204    | ذكور    | إناث     | المجموع        |
|               | Total   | 5,628   | 4,502      | 1,126  | 5,111   | 4,136      | 975    | 4,720   | 3,801      | 919    | 3,038   | 2,643      | 395    | المجموع | المجموع  |                |

**موظفو البحث والتطوير بمعادل الوقت الكامل حسب القطاع والجنسية والنوع والمهنة**

**RESEARCH AND DEVELOPMENT PERSONNEL WITH FULL-TIME EQUIVALENT  
BY SECTOR, NATIONALITY, GENDER AND OCCUPATION**

2021

TABLE No. (9)

| Occupation    | Gender  | المجموع |         |            | قطاع التعليم العالي |             |            | القطاع الحكومي |             |            | قطاع الأعمال |             |            | النوع   | المهنة | جدول رقم (٩) |  |  |
|---------------|---------|---------|---------|------------|---------------------|-------------|------------|----------------|-------------|------------|--------------|-------------|------------|---------|--------|--------------|--|--|
|               |         | المجموع |         | غير قطريين | المجموع             |             | غير قطريين | المجموع        |             | غير قطريين | المجموع      |             | غير قطريين | Qataris |        |              |  |  |
|               |         | Total   | Qataris |            | Total               | Non-Qataris |            | Total          | Non-Qataris |            | Total        | Non-Qataris |            |         |        |              |  |  |
| Researchers   |         | 1,806   | 1,572   | 235        | 1,221               | 1,092       | 128        | 243            | 182         | 61         | 342          | 297         | 45         | ذكور    | إناث   |              |  |  |
|               | Males   | 839     | 463     | 376        | 438                 | 287         | 152        | 293            | 109         | 183        | 107          | 66          | 41         |         |        | إلياذن       |  |  |
|               | Females | 2,645   | 2,034   | 611        | 1,659               | 1,379       | 280        | 536            | 291         | 245        | 450          | 364         | 86         | المجموع |        |              |  |  |
| Technicians   |         | 444     | 402     | 42         | 251                 | 229         | 22         | 92             | 80          | 13         | 101          | 94          | 7          | ذكور    | إناث   |              |  |  |
|               | Males   | 378     | 287     | 91         | 191                 | 143         | 48         | 168            | 130         | 38         | 20           | 15          | 5          |         |        | الذكور       |  |  |
|               | Females | 822     | 689     | 133        | 442                 | 372         | 70         | 260            | 209         | 51         | 121          | 108         | 12         | المجموع |        |              |  |  |
| Support Staff |         | 231     | 190     | 40         | 59                  | 47          | 12         | 96             | 75          | 21         | 76           | 68          | 8          | ذكور    | إناث   |              |  |  |
|               | Males   | 329     | 216     | 113        | 142                 | 86          | 57         | 161            | 105         | 56         | 26           | 26          | 0          |         |        | موظفو الدعم  |  |  |
|               | Females | 560     | 406     | 153        | 201                 | 133         | 69         | 257            | 180         | 77         | 101          | 94          | 8          | المجموع |        |              |  |  |
| Total         |         | 2,481   | 2,164   | 317        | 1,530               | 1,368       | 162        | 431            | 336         | 95         | 519          | 459         | 60         | ذكور    | إناث   |              |  |  |
|               | Males   | 1,546   | 966     | 580        | 772                 | 516         | 256        | 621            | 344         | 278        | 153          | 106         | 46         |         |        | المجموع      |  |  |
| Total         |         | 4,027   | 3,129   | 897        | 2,302               | 1,884       | 418        | 1,053          | 680         | 373        | 672          | 566         | 106        | المجموع |        |              |  |  |

**موظفو البحث والتطوير والمعلمات و المجال العلوم والمهنة**  
**PERSONNEL AND FULL-TIME EQUIVALENT IN RESEARCH AND DEVELOPMENT**  
**BY SECTOR, FIELD OF SCIENCE AND OCCUPATION**

2021

TABLE No. (10)

| Occupation    | Field of Science          | المجموع       |                        |               | قطاع التعليم العالي    |               |                        | القطاع الحكومي |                        |               | مجال العلوم            | المهنة                | جدول رقم (١٠) |
|---------------|---------------------------|---------------|------------------------|---------------|------------------------|---------------|------------------------|----------------|------------------------|---------------|------------------------|-----------------------|---------------|
|               |                           | النسبة %      | Total                  | المعدل        | المجموع                | المعدل        | المجموع                | المعدل         | المجموع                | المعدل        | المجموع                |                       |               |
|               |                           | بوقت كامل FTE | عدد الموظفين Headcount | بوقت كامل FTE | عدد الموظفين Headcount | بوقت كامل FTE | عدد الموظفين Headcount | بوقت كامل FTE  | عدد الموظفين Headcount | بوقت كامل FTE | عدد الموظفين Headcount |                       |               |
| Researchers   | Natural science           | 9.5           | 9.7                    | 381.8         | 545                    | 274.9         | 366                    | 84.2           | 155                    | 22.7          | 24                     | العلوم الطبيعية       |               |
|               | Engineering & technology  | 17.1          | 14.7                   | 689.9         | 828                    | 351.8         | 413                    | 27.2           | 42                     | 310.9         | 373                    | الهندسة والتكنولوجيا  |               |
|               | Medical & health sciences | 9.1           | 8.2                    | 365.2         | 464                    | 225.3         | 261                    | 124.9          | 188                    | 15.0          | 15                     | العلوم الطبية والصحية |               |
|               | Agricultural science      | 1.3           | 1.0                    | 50.5          | 56                     | 4.0           | 4                      | 40.5           | 42                     | 6.0           | 10                     | العلوم الزراعية       |               |
|               | Social science            | 17.0          | 15.6                   | 682.6         | 879                    | 416.4         | 603                    | 209.2          | 219                    | 57.0          | 57                     | العلوم الاجتماعية     |               |
|               | Humanities                | 7.9           | 8.6                    | 318.7         | 484                    | 255.6         | 350                    | 36.1           | 107                    | 27.0          | 27                     | العلوم الإنسانية      |               |
|               | Not specified elsewhere   | 3.9           | 4.0                    | 156.5         | 224                    | 131.4         | 194                    | 14.1           | 19                     | 11.0          | 11                     | غير محددة في مكان آخر |               |
|               | <b>Total</b>              | <b>65.7</b>   | <b>61.8</b>            | <b>2645.0</b> | <b>3480</b>            | <b>1659.4</b> | <b>2191</b>            | <b>536.1</b>   | <b>772</b>             | <b>449.6</b>  | <b>517</b>             | <b>المجموع</b>        |               |
| Technicians   | Natural science           | 3.3           | 2.5                    | 134.8         | 142                    | 118.0         | 120                    | 10.8           | 14                     | 6.0           | 8                      | العلوم الطبيعية       |               |
|               | Engineering & technology  | 5.9           | 11.0                   | 236.9         | 618                    | 112.2         | 114                    | 28.9           | 45                     | 95.9          | 459                    | الهندسة والتكنولوجيا  |               |
|               | Medical & health sciences | 6.2           | 4.6                    | 249.7         | 259                    | 91.0          | 91                     | 158.7          | 168                    | 0.0           | 0                      | العلوم الطبية والصحية |               |
|               | Agricultural science      | 0.9           | 0.7                    | 35.3          | 40                     | 23.0          | 23                     | 10.0           | 10                     | 2.3           | 7                      | العلوم الزراعية       |               |
|               | Social science            | 1.5           | 1.3                    | 61.5          | 71                     | 20.5          | 21                     | 27.6           | 33                     | 13.4          | 17                     | العلوم الاجتماعية     |               |
|               | Humanities                | 0.7           | 1.0                    | 28.5          | 55                     | 15.0          | 15                     | 10.5           | 35                     | 3.0           | 5                      | العلوم الإنسانية      |               |
|               | Not specified elsewhere   | 1.9           | 1.5                    | 75.4          | 85                     | 62.0          | 62                     | 13.4           | 23                     | 0.0           | 0                      | غير محددة في مكان آخر |               |
|               | <b>Total</b>              | <b>20.4</b>   | <b>22.6</b>            | <b>822.1</b>  | <b>1270</b>            | <b>441.7</b>  | <b>446</b>             | <b>259.9</b>   | <b>328</b>             | <b>120.6</b>  | <b>496</b>             | <b>المجموع</b>        |               |
| Support Staff | Natural science           | 1.2           | 1.1                    | 50.1          | 62                     | 33.8          | 38                     | 15.1           | 22                     | 1.2           | 2                      | العلوم التطبيقية      |               |
|               | Engineering & technology  | 1.1           | 1.2                    | 44.0          | 68                     | 24.0          | 30                     | 14.3           | 15                     | 5.7           | 23                     | الهندسة والتكنولوجيا  |               |
|               | Medical & health sciences | 3.3           | 2.6                    | 131.9         | 144                    | 40.3          | 46                     | 90.6           | 97                     | 1.0           | 1                      | العلوم الطبية والصحية |               |
|               | Agricultural science      | 0.5           | 0.5                    | 19.0          | 28                     | 2.0           | 2                      | 16.0           | 16                     | 1.0           | 10                     | العلوم الزراعية       |               |
|               | Social science            | 3.9           | 3.2                    | 156.6         | 182                    | 87.8          | 94                     | 62.5           | 65                     | 6.3           | 23                     | العلوم الاجتماعية     |               |
|               | Humanities                | 0.6           | 0.8                    | 24.1          | 45                     | 3.5           | 8                      | 13.3           | 17                     | 7.3           | 20                     | العلوم الإنسانية      |               |
|               | Not specified elsewhere   | 3.3           | 6.2                    | 133.9         | 349                    | 10.0          | 23                     | 44.9           | 62                     | 79.0          | 264                    | غير محددة في مكان آخر |               |
|               | <b>Total</b>              | <b>13.9</b>   | <b>15.6</b>            | <b>559.5</b>  | <b>878</b>             | <b>201.3</b>  | <b>241</b>             | <b>256.7</b>   | <b>294</b>             | <b>101.5</b>  | <b>343</b>             | <b>المجموع</b>        |               |
|               | <b>Grand Total</b>        | <b>100.0</b>  | <b>100.0</b>           | <b>4026.7</b> | <b>5628</b>            | <b>2302.4</b> | <b>2878</b>            | <b>1052.6</b>  | <b>1394</b>            | <b>671.7</b>  | <b>1356</b>            | <b>المجموع الكلي</b>  |               |

**موظفو البحث والتطوير حسب الجنسية والنوع والمؤهل العلمي والمهنة**  
**RESEARCH AND DEVELOPMENT PERSONNEL BY NATIONALITY, GENDER,**  
**EDUCATIONAL QUALIFICATION AND OCCUPATION**

2021

TABLE No. (11)

| Occupation    | Educational Qualification | المجموع Total |              |            |               | غير قطريين Non-Qatari |            |               |              | قطريين Qataris |                |                |                | المؤهل العلمي  | المهنة         | جدول رقم (11)  |
|---------------|---------------------------|---------------|--------------|------------|---------------|-----------------------|------------|---------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|               |                           | المجموع Total | إناث Females | ذكور Males | المجموع Total | إناث Females          | ذكور Males | المجموع Total | إناث Females | ذكور Males     | المجموع Total  | إناث Females   | ذكور Males     |                |                |                |
| Researchers   | Ph.D.                     | 2,133         | 471          | 1,662      | 1,850         | 333                   | 1,517      | 283           | 138          | 145            | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        |
|               | M.A / M.Sc.               | 468           | 214          | 254        | 353           | 143                   | 210        | 115           | 71           | 44             | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        |
|               | Higher Diploma            | 31            | 15           | 16         | 24            | 9                     | 15         | 7             | 6            | 1              | دبلوم عالي     |
|               | PSc & Below               | 848           | 409          | 439        | 472           | 140                   | 332        | 376           | 269          | 107            | بكالوريوس فأقل |
|               | Total                     | 3,480         | 1,109        | 2,371      | 2,699         | 625                   | 2,074      | 781           | 484          | 297            | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        |
| Technicians   | Ph.D.                     | 69            | 20           | 49         | 69            | 20                    | 49         | 0             | 0            | 0              | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        |
|               | M.A / M.Sc.               | 266           | 132          | 134        | 247           | 115                   | 132        | 19            | 17           | 2              | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        |
|               | Higher Diploma            | 26            | 2            | 24         | 25            | 2                     | 23         | 1             | 0            | 1              | دبلوم عالي     |
|               | PSc & Below               | 909           | 265          | 644        | 764           | 176                   | 588        | 145           | 89           | 56             | بكالوريوس فأقل |
|               | Total                     | 1,270         | 419          | 851        | 1,105         | 313                   | 792        | 165           | 106          | 59             | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        |
| Support Staff | Ph.D.                     | 24            | 12           | 12         | 24            | 12                    | 12         | 0             | 0            | 0              | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        |
|               | M.A / M.Sc.               | 123           | 79           | 44         | 100           | 64                    | 36         | 23            | 15           | 8              | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        |
|               | Higher Diploma            | 10            | 4            | 6          | 7             | 1                     | 6          | 3             | 3            | 0              | دبلوم عالي     |
|               | PSc & Below               | 721           | 288          | 433        | 567           | 181                   | 386        | 154           | 107          | 47             | بكالوريوس فأقل |
|               | Total                     | 878           | 383          | 495        | 698           | 258                   | 440        | 180           | 125          | 55             | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        | المجموع        |
|               | Ph.D.                     | 2,226         | 503          | 1,723      | 1,943         | 365                   | 1,578      | 283           | 138          | 145            | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        | دكتوراه        |
|               | M.A / M.Sc.               | 857           | 425          | 432        | 700           | 322                   | 378        | 157           | 103          | 54             | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        | ماجستير        |
|               | Higher Diploma            | 67            | 21           | 46         | 56            | 12                    | 44         | 11            | 9            | 2              | دبلوم عالي     |
|               | PSc & Below               | 2,478         | 962          | 1,516      | 1,803         | 497                   | 1,306      | 675           | 465          | 210            | بكالوريوس فأقل |
|               | Grand Total               | 5,628         | 1,911        | 3,717      | 4,502         | 1,196                 | 3,306      | 1,126         | 715          | 411            | المجموع الكلي  |

موظفو البحث والتطوير حسب القطاع والجنسية والمؤهل العلمي والمهنة  
**RESEARCH AND DEVELOPMENT PERSONNEL BY SECTOR, NATIONALITY,  
EDUCATIONAL QUALIFICATION AND OCCUPATION**

2021

TABLE No. (12)

| Occupation    | Educational Qualification | المجموع             |            |                    |            | المؤهل العلمي | المهنة     | جدول رقم (١٢) |            |        |            |        |            |
|---------------|---------------------------|---------------------|------------|--------------------|------------|---------------|------------|---------------|------------|--------|------------|--------|------------|
|               |                           | قطاع التعليم العالي |            | قطاع التعليم العام |            |               |            | قطاع الأعمال  |            |        | قطاع قطر   |        |            |
|               |                           | الباحثون            | غير قطريين | قطريون             | غير قطريين | قطريون        | غير قطريين | قطريون        | غير قطريين | قطريون | غير قطريين | قطريون | غير قطريين |
|               | Ph.D.                     | 2,133               | 1,850      | 283                | 1,530      | 241           | 230        | 36            | 90         | 6      | 2,133      | 1,850  | 283        |
|               | M.A / M.Sc.               | 468                 | 353        | 115                | 177        | 40            | 83         | 50            | 93         | 25     | 468        | 353    | 115        |
| Researchers   | Higher Diploma            | 31                  | 24         | 7                  | 5          | 0             | 6          | 7             | 13         | 0      | 31         | 24     | 7          |
|               | PSC & Below               | 848                 | 472        | 376                | 146        | 52            | 109        | 251           | 217        | 73     | 848        | 472    | 376        |
|               | Total                     | 3,480               | 2,699      | 781                | 1,858      | 333           | 428        | 344           | 413        | 104    | 3,480      | 2,699  | 781        |
| Technicians   | Ph.D.                     | 69                  | 69         | 0                  | 53         | 0             | 11         | 0             | 5          | 0      | 69         | 69     | 0          |
|               | M.A / M.Sc.               | 266                 | 247        | 19                 | 140        | 9             | 78         | 9             | 29         | 1      | 266        | 247    | 19         |
|               | Total                     | 1,270               | 1,105      | 165                | 375        | 71            | 258        | 70            | 472        | 24     | 1,270      | 1,105  | 165        |
| Support Staff | Higher Diploma            | 26                  | 25         | 1                  | 2          | 0             | 4          | 0             | 19         | 1      | 26         | 25     | 1          |
|               | PSC & Below               | 909                 | 764        | 145                | 180        | 62            | 165        | 61            | 419        | 22     | 909        | 764    | 145        |
|               | Total                     | 1,135               | 970        | 290                | 525        | 227           | 525        | 227           | 746        | 44     | 1,135      | 970    | 290        |
| M.A / M.Sc.   | Ph.D.                     | 24                  | 24         | 0                  | 13         | 0             | 8          | 0             | 3          | 0      | 24         | 24     | 0          |
|               | Higher Diploma            | 10                  | 7          | 3                  | 1          | 1             | 1          | 2             | 5          | 0      | 10         | 7      | 3          |
|               | Total                     | 721                 | 567        | 154                | 107        | 61            | 155        | 85            | 305        | 8      | 721        | 567    | 154        |
| Total         | PSC & Below               | 5,628               | 4,502      | 1,126              | 2,400      | 478           | 884        | 510           | 1,218      | 138    | 5,628      | 4,502  | 1,126      |
|               | Total                     | 878                 | 698        | 180                | 167        | 74            | 198        | 96            | 333        | 10     | 878        | 698    | 180        |
|               | Total                     | 2,226               | 1,943      | 283                | 1,596      | 241           | 249        | 36            | 98         | 6      | 2,226      | 1,943  | 283        |
| Total         | M.A / M.Sc.               | 857                 | 700        | 157                | 363        | 61            | 195        | 68            | 142        | 28     | 857        | 700    | 157        |
|               | Higher Diploma            | 67                  | 56         | 11                 | 8          | 1             | 11         | 9             | 37         | 1      | 67         | 56     | 11         |
|               | PSC & Below               | 2,478               | 1,803      | 675                | 433        | 175           | 429        | 397           | 941        | 103    | 2,478      | 1,803  | 675        |
| Grand Total   |                           | 5,628               | 4,502      | 1,126              | 2,400      | 478           | 884        | 510           | 1,218      | 138    | 5,628      | 4,502  | 1,126      |
| المجموع الكلي |                           |                     |            |                    |            |               |            |               |            |        |            |        |            |

**موظفو البحث والتطوير بمعدل الوقت الكامل حسب القطاع والجنسية والمؤهل العلمي والمهنة**  
**RESEARCH AND DEVELOPMENT PERSONNEL WITH FULL-TIME EQUIVALENT BY SECTOR, NATIONALITY, EDUCATIONAL QUALIFICATION, AND OCCUPATION**

2021

TABLE No. (13)

| Occupation    | Educational Qualification | المجموع Total |                        |                        | قطاع التعليم العالي Higher Education Sector |                        |                | القطاع الحكومي Government Sector |                        |                        | قطاع الأعمال Business Sector |                |  | المؤهل العلمي | المهنة | جدول رقم (١٣) |  |  |  |
|---------------|---------------------------|---------------|------------------------|------------------------|---|------------------------|----------------|----------------------------------|------------------------|------------------------|------------------------------|----------------|--|---------------|--------|---------------|--|--|--|
|               |                           | المجموع Total |                        | غير قطريين Non-Qataris | قطريون Qataris                              | غير قطريين Non-Qataris |                | قطريون Qataris                   |                        | غير قطريين Non-Qataris |                              | قطريون Qataris |  |               |        |               |  |  |  |
|               |                           | المجموع Total | غير قطريين Non-Qataris |                        |   | غير قطريين Non-Qataris | قطريون Qataris | قطريون Qataris                   | غير قطريين Non-Qataris | قطريون Qataris         |                              |                |  |               |        |               |  |  |  |
| Researchers   | Ph.D.                     | 1,585.1       | 1,361.4                | 223.8                  | 1,124.2                                     | 197.4                  | 148.6          | 21.2                             | 88.6                   | 5.2                    | دكتوراة                      |                |  |               |        |               |  |  |  |
|               | M.A / M.Sc.               | 369.4         | 276.2                  | 93.2                   | 131.3                                       | 37.2                   | 57.8           | 33.9                             | 87.2                   | 22.1                   | ماجستير                      |                |  |               |        |               |  |  |  |
|               | Higher Diploma            | 25.5          | 18.5                   | 7.0                    | 5.0   | 0.0                    | 4.8            | 7.0                              | 8.7                    | 0.0                    | دبلوم عالي                   |                |  |               |        |               |  |  |  |
|               | PSc & Below               | 665.1         | 378.3                  | 286.8                  | 119.0                                       | 45.3                   | 80.1           | 182.9                            | 179.3                  | 58.6                   | بكالوريوس فأقل               |                |  |               |        |               |  |  |  |
|               | Total                     | 2,645.0       | 2,034.3                | 610.7                  | 1,379.4                                     | 279.9                  | 291.2          | 244.9                            | 363.7                  | 85.9                   | المجموع                      |                |  |               |        |               |  |  |  |
|               | Ph.D.                     | 66.3          | 66.3                   | 0.0                    | 53.0  | 0.0                    | 10.0           | 0.0                              | 3.3                    | 0.0                    | دكتوراة                      |                |  |               |        |               |  |  |  |
| Technicians   | M.IA / M.I.Sc.            | 238.8         | 220.2                  | 18.6                   | 139.2                                       | 9.0                    | 67.2           | 8.6                              | 13.8                   | 1.0                    | ماجستير                      |                |  |               |        |               |  |  |  |
|               | Higher Diploma            | 6.1           | 6.0                    | 0.1                    | 2.0   | 0.0                    | 2.6            | 0.0                              | 1.4                    | 0.1                    | دبلوم عالي                   |                |  |               |        |               |  |  |  |
|               | PSc & Below               | 511.0         | 396.6                  | 114.5                  | 177.5                                       | 61.0                   | 129.4          | 42.1                             | 89.7                   | 11.4                   | بكالوريوس فأقل               |                |  |               |        |               |  |  |  |
|               | Total                     | 822.1         | 689.0                  | 133.2                  | 371.7                                       | 70.0                   | 209.2          | 50.7                             | 108.1                  | 12.5                   | المجموع                      |                |  |               |        |               |  |  |  |
|               | Ph.D.                     | 20.3          | 20.3                   | 0.0                    | 11.0  | 0.0                    | 7.0            | 0.0                              | 2.3                    | 0.0                    | دكتوراة                      |                |  |               |        |               |  |  |  |
|               | M.A / M.Sc.               | 109.0         | 88.0                   | 21.0                   | 43.0  | 11.5                   | 32.6           | 9.0                              | 12.4                   | 0.5                    | ماجستير                      |                |  |               |        |               |  |  |  |
| Support Staff | Higher Diploma            | 4.8           | 2.5                    | 2.3                    | 1.0   | 1.0                    | 1.0            | 1.3                              | 0.5                    | 0.0                    | دبلوم عالي                   |                |  |               |        |               |  |  |  |
|               | PSc & Below               | 425.5         | 295.4                  | 130.1                  | 77.8  | 56.0                   | 139.0          | 66.8                             | 78.5                   | 7.3                    | بكالوريوس فأقل               |                |  |               |        |               |  |  |  |
|               | Total                     | 559.5         | 406.1                  | 153.4                  | 132.8                                       | 68.5                   | 179.6          | 77.1                             | 93.7                   | 7.8                    | المجموع                      |                |  |               |        |               |  |  |  |
|               | Ph.D.                     | 1,671.6       | 1,447.9                | 223.8                  | 1,188.2                                     | 197.4                  | 165.6          | 21.2                             | 94.1                   | 5.2                    | دكتوراة                      |                |  |               |        |               |  |  |  |
|               | M.A / M.Sc.               | 717.1         | 584.4                  | 132.8                  | 313.5                                       | 57.7                   | 157.6          | 51.5                             | 113.3                  | 23.6                   | ماجستير                      |                |  |               |        |               |  |  |  |
|               | Higher Diploma            | 36.3          | 26.9                   | 9.4                    | 8.0   | 1.0                    | 8.4            | 8.3                              | 10.5                   | 0.1                    | دبلوم عالي                   |                |  |               |        |               |  |  |  |
| Total         | PSc & Below               | 1,601.6       | 1,070.2                | 531.4                  | 374.3                                       | 162.3                  | 348.4          | 291.8                            | 347.5                  | 77.3                   | بكالوريوس فأقل               |                |  |               |        |               |  |  |  |
|               | Grand Total               | 4,026.7       | 3,129.4                | 897.3                  | 1,884.0                                     | 418.4                  | 679.9          | 372.7                            | 565.5                  | 106.1                  | المجموع الكلي                |                |  |               |        |               |  |  |  |

**موظفو البحث والتطوير والمؤهل العلمي والمهنية**

**RESEARCH AND DEVELOPMENT PERSONNEL AND FULL-TIME EQUIVALENT**

**BY SECTOR, EDUCATIONAL QUALIFICATION AND OCCUPATION**

2021

TABLE No. (14)

(١٤) رقم رجول

| Occupation         | Educational Qualification | المجموع Total       |                        |                     | قطاع التعليم العالي Higher Education Sector |                     |                        | القطاع الحكومي Government Sector |                        |                     | قطاع الأعمال Business Sector |                      |                        | المؤهل العلمي  | المهنة |
|--------------------|---------------------------|---------------------|------------------------|---------------------|---|---------------------|------------------------|----------------------------------|------------------------|---------------------|------------------------------|----------------------|------------------------|----------------|--------|
|                    |                           | المعدل بوقت كمل FTE | عدد الموظفين Headcount | المعدل بوقت كمل FTE | عدد الموظفين Headcount                      | المعدل بوقت كمل FTE | عدد الموظفين Headcount | المعدل بوقت كمل FTE              | عدد الموظفين Headcount | المعدل بوقت كمل FTE | عدد الموظفين Headcount       | المعدل بوقت كمل FTE  | عدد الموظفين Headcount |                |        |
| Researchers        | Ph.D.                     | 39.4                | 37.9                   | 1585.1              | 2,133                                       | 1321.6              | 1,771                  | 169.7                            | 266                    | 93.8                | 96                           |                      |                        | دكتوراة        |        |
|                    | M.A./M.Sc.                | 9.2                 | 8.3                    | 369.4               | 468   | 168.5               | 217                    | 91.6                             | 133                    | 109.2               | 118                          |                      |                        | ماجستير        |        |
|                    | Higher Diploma            | 0.6                 | 0.6                    | 25.5                | 31  | 5.0                 | 5                      | 11.8                             | 13                     | 8.7                 | 13                           |                      |                        | دبلوم عالي     |        |
|                    | PSc & Below               | 16.5                | 15.1                   | 665.1               | 848   | 164.3               | 198                    | 263.0                            | 360                    | 237.9               | 290                          |                      |                        | بكالوريوس فأقل |        |
| <b>Total</b>       |                           | <b>65.7</b>         | <b>61.8</b>            | <b>2645.0</b>       | <b>3,480</b>                                | <b>1659.4</b>       | <b>2,191</b>           | <b>536.1</b>                     | <b>772</b>             | <b>449.6</b>        | <b>517</b>                   | <b>المجموع</b>       |                        |                |        |
| Technicians        | Ph.D.                     | 1.6                 | 1.2                    | 66.3                | 69  | 53.0                | 53                     | 10.0                             | 11                     | 3.3                 | 5                            |                      |                        | دكتوراة        |        |
|                    | M.A./M.Sc.                | 5.9                 | 4.7                    | 238.8               | 266   | 148.2               | 149                    | 75.8                             | 87                     | 14.8                | 30                           |                      |                        | ماجستير        |        |
|                    | Higher Diploma            | 0.2                 | 0.5                    | 6.1                 | 26  | 2.0                 | 2                      | 2.6                              | 4                      | 1.5                 | 20                           |                      |                        | دبلوم عالي     |        |
|                    | PSc & Below               | 12.7                | 16.2                   | 511.0               | 909   | 238.5               | 242                    | 171.5                            | 226                    | 101.1               | 441                          |                      |                        | بكالوريوس فأقل |        |
| <b>Total</b>       |                           | <b>20.4</b>         | <b>22.6</b>            | <b>822.1</b>        | <b>1,270</b>                                | <b>441.7</b>        | <b>446</b>             | <b>259.9</b>                     | <b>328</b>             | <b>120.6</b>        | <b>496</b>                   | <b>المجموع</b>       |                        |                |        |
| Support Staff      | Ph.D.                     | 0.5                 | 0.4                    | 20.3                | 24  | 11.0                | 13                     | 7.0                              | 8                      | 2.3                 | 3                            |                      |                        | دكتوراة        |        |
|                    | M.A./M.Sc.                | 2.7                 | 2.2                    | 109.0               | 123   | 54.5                | 58                     | 41.6                             | 43                     | 12.9                | 22                           |                      |                        | ماجستير        |        |
|                    | Higher Diploma            | 0.1                 | 0.2                    | 4.8                 | 10  | 2.0                 | 2                      | 2.3                              | 3                      | 0.5                 | 5                            |                      |                        | دبلوم عالي     |        |
|                    | PSc & Below               | 10.6                | 12.8                   | 425.5               | 721   | 133.8               | 168                    | 205.8                            | 240                    | 85.8                | 313                          |                      |                        | بكالوريوس فأقل |        |
| <b>Total</b>       |                           | <b>13.9</b>         | <b>15.6</b>            | <b>559.5</b>        | <b>878</b>                                  | <b>201.3</b>        | <b>241</b>             | <b>256.7</b>                     | <b>294</b>             | <b>101.5</b>        | <b>343</b>                   | <b>المجموع</b>       |                        |                |        |
| Total              | Ph.D.                     | 41.5                | 39.6                   | 1671.6              | 2,226                                       | 1385.6              | 1,837                  | 186.7                            | 285                    | 99.3                | 104                          |                      |                        | دكتوراة        |        |
|                    | M.A./M.Sc.                | 17.8                | 15.2                   | 717.1               | 857   | 371.2               | 424                    | 209.0                            | 263                    | 136.9               | 170                          |                      |                        | ماجستير        |        |
|                    | Higher Diploma            | 0.9                 | 1.2                    | 36.3                | 67  | 9.0                 | 9                      | 16.7                             | 20                     | 10.6                | 38                           |                      |                        | دبلوم عالي     |        |
|                    | PSc & Below               | 39.3                | 44.0                   | 1601.6              | 2,478                                       | 536.6               | 608                    | 640.2                            | 826                    | 424.8               | 1,044                        |                      |                        | بكالوريوس فأقل |        |
| <b>Grand Total</b> |                           | <b>100.0</b>        | <b>100.0</b>           | <b>4026.7</b>       | <b>5,628</b>                                | <b>2302.4</b>       | <b>2,878</b>           | <b>1052.6</b>                    | <b>1,394</b>           | <b>671.7</b>        | <b>1,356</b>                 | <b>المجموع الكلي</b> |                        |                |        |

موقفو البحث والتطوير حسب القطاع والجنسية والنوع و مجال العلوم والمهنة

RESEARCH AND DEVELOPMENT PERSONNEL BY SECTOR, NATIONALITY, GENDER, FILED OF SCIENCE AND OCCUPATION

2021

جدول رقم (١٥)

| Occupation  | Field of Science          | القطاع التعليمي العالي |                  |              |                |                |                |                |             |                |                | القطاع الحكومي |             |                |                |            |                |                |                |                |            | المهنة         |                |             |             |            |             |            |           |           |                       |                 |
|-------------|---------------------------|------------------------|------------------|--------------|----------------|----------------|----------------|----------------|-------------|----------------|----------------|----------------|-------------|----------------|----------------|------------|----------------|----------------|----------------|----------------|------------|----------------|----------------|-------------|-------------|------------|-------------|------------|-----------|-----------|-----------------------|-----------------|
|             |                           | المجموع                |                  |              |                |                | المجموع        |                |             |                |                | المجموع        |             |                |                |            | المجموع        |                |                |                |            |                |                |             |             |            |             |            |           |           |                       |                 |
|             |                           | Total                  | عدد الموظفين (%) | عدد الموظفين | غير قطريين (%) | قطريون         | Total          | غير قطريين (%) | قطريون      | Total          | غير قطريين (%) | قطريون         | Total       | غير قطريين (%) | قطريون         | Total      | غير قطريين (%) | قطريون         | Total          | غير قطريين (%) | قطريون     |                |                |             |             |            |             |            |           |           |                       |                 |
|             |                           | Headcount (%)          | Headcount        | No. of       | Total          | Non-Qatari (%) | Non-Qatari (%) | Qatari (%)     | Total       | Non-Qatari (%) | Non-Qatari (%) | Qatari (%)     | Total       | Non-Qatari (%) | Non-Qatari (%) | Qatari (%) | Total          | Non-Qatari (%) | Non-Qatari (%) | Qatari (%)     | Total      | Non-Qatari (%) | Non-Qatari (%) | Qatari (%)  |             |            |             |            |           |           |                       |                 |
|             |                           |                        |                  | T            | F              | M              | T              | F              | T           | F              | M              | T              | F           | M              | T              | F          | M              | T              | F              | M              | T          | F              | M              | T           |             |            |             |            |           |           |                       |                 |
|             | Natural science           | 9.7                    | 545              | 366          | 91             | 275            | 295            | 55             | 240         | 71             | 36             | 35             | 155         | 64             | 91             | 103        | 21             | 82             | 52             | 43             | 9          | 24             | 10             | 14          | 16          | 3          | 13          | 8          | 7         | 1         |                       |                 |
|             | Engineering & technology  | 14.7                   | 828              | 413          | 64             | 349            | 359            | 44             | 315         | 54             | 20             | 34             | 42          | 19             | 23             | 16         | 3              | 13             | 26             | 16             | 10         | 373            | 69             | 304         | 292         | 41         | 251         | 81         | 28        | 53        | الهندسة والتكنولوجيا  |                 |
|             | Medical & health sciences | 8.2                    | 464              | 261          | 99             | 162            | 223            | 71             | 152         | 38             | 28             | 10             | 188         | 87             | 101            | 161        | 63             | 98             | 27             | 24             | 3          | 15             | 9              | 6           | 13          | 7          | 6           | 2          | 2         | 0         | العلوم الطبية والصحية |                 |
|             | Agricultural science      | 1.0                    | 56               | 4            | 1              | 3              | 1              | 0              | 1           | 3              | 1              | 2              | 42          | 23             | 19             | 16         | 6              | 10             | 26             | 17             | 9          | 10             | 1              | 9           | 9           | 1          | 8           | 1          | 0         | 1         | العلوم الزراعية       |                 |
| Researchers | Social science            | 15.6                   | 879              | 603          | 165            | 438            | 497            | 102            | 395         | 106            | 63             | 43             | 219         | 137            | 82             | 90         | 39             | 51             | 129            | 98             | 31         | 57             | 17             | 40          | 51          | 13         | 38          | 6          | 4         | 2         | العلوم الاجتماعية     |                 |
|             | Humanities                | 8.6                    | 484              | 350          | 100            | 250            | 290            | 71             | 219         | 60             | 29             | 31             | 107         | 81             | 26             | 38         | 24             | 14             | 69             | 57             | 12         | 27             | 7              | 20          | 22          | 4          | 18          | 5          | 3         | 2         | العلوم الإنسانية      |                 |
|             | Not specified elsewhere   | 4.0                    | 224              | 194          | 55             | 139            | 193            | 54             | 139         | 1              | 1              | 0              | 19          | 10             | 9              | 4          | 3              | 1              | 15             | 7              | 8          | 11             | 0              | 11          | 10          | 0          | 10          | 1          | 0         | 1         | غير محدد في مكان آخر  |                 |
|             | <b>Total</b>              | <b>61.8</b>            | <b>3480</b>      | <b>2191</b>  | <b>575</b>     | <b>1616</b>    | <b>1858</b>    | <b>397</b>     | <b>1461</b> | <b>333</b>     | <b>178</b>     | <b>155</b>     | <b>772</b>  | <b>421</b>     | <b>351</b>     | <b>428</b> | <b>159</b>     | <b>269</b>     | <b>344</b>     | <b>262</b>     | <b>82</b>  | <b>517</b>     | <b>113</b>     | <b>404</b>  | <b>413</b>  | <b>69</b>  | <b>344</b>  | <b>104</b> | <b>44</b> | <b>60</b> | المجموع               |                 |
|             | Natural science           | 2.5                    | 142              | 120          | 38             | 82             | 94             | 17             | 77          | 26             | 21             | 5              | 14          | 10             | 4              | 12         | 8              | 4              | 2              | 2              | 0          | 8              | 1              | 7           | 7           | 1          | 6           | 1          | 0         | 1         | العلوم الطبيعية       |                 |
|             | Engineering & technology  | 11.0                   | 618              | 114          | 26             | 88             | 96             | 21             | 75          | 18             | 5              | 13             | 45          | 9              | 36             | 43         | 7              | 36             | 2              | 2              | 0          | 459            | 16             | 443         | 437         | 11         | 426         | 22         | 5         | 17        | الهندسة والتكنولوجيا  |                 |
|             | Medical & health sciences | 4.6                    | 259              | 91           | 71             | 20             | 79             | 61             | 18          | 12             | 10             | 2              | 168         | 136            | 32             | 143        | 116            | 27             | 25             | 20             | 5          | 0              | 0              | 0           | 0           | 0          | 0           | 0          | 0         | 0         | العلوم الطبية والصحية |                 |
|             | Technicians               | 0.7                    | 40               | 23           | 14             | 9              | 19             | 10             | 9           | 4              | 4              | 0              | 10          | 1              | 9              | 7          | 0              | 7              | 3              | 1              | 2          | 7              | 0              | 7           | 7           | 0          | 7           | 0          | 0         | 0         | العلوم التقنية        |                 |
|             | Social science            | 1.3                    | 71               | 21           | 9              | 12             | 15             | 5              | 10          | 6              | 4              | 2              | 33          | 10             | 23             | 21         | 3              | 18             | 12             | 7              | 5          | 17             | 5              | 12          | 16          | 5          | 11          | 1          | 0         | 1         | العلوم الاجتماعية     |                 |
|             | Humanities                | 1.0                    | 55               | 15           | 7              | 8              | 10             | 3              | 7           | 5              | 4              | 1              | 35          | 26             | 9              | 20         | 12             | 8              | 15             | 14             | 1          | 5              | 1              | 4           | 5           | 1          | 4           | 0          | 0         | 0         | العلوم الإنسانية      |                 |
|             | Not specified elsewhere   | 1.5                    | 85               | 62           | 28             | 34             | 62             | 28             | 34          | 0              | 0              | 0              | 23          | 11             | 12             | 12         | 4              | 8              | 11             | 7              | 4          | 0              | 0              | 0           | 0           | 0          | 0           | 0          | 0         | 0         | غير محدد في مكان آخر  |                 |
|             | <b>Total</b>              | <b>22.6</b>            | <b>1270</b>      | <b>446</b>   | <b>193</b>     | <b>253</b>     | <b>375</b>     | <b>145</b>     | <b>230</b>  | <b>71</b>      | <b>48</b>      | <b>23</b>      | <b>328</b>  | <b>203</b>     | <b>125</b>     | <b>258</b> | <b>150</b>     | <b>108</b>     | <b>70</b>      | <b>53</b>      | <b>17</b>  | <b>496</b>     | <b>23</b>      | <b>473</b>  | <b>472</b>  | <b>18</b>  | <b>454</b>  | <b>24</b>  | <b>5</b>  | <b>19</b> | المجموع               |                 |
|             | Natural science           | 1.1                    | 62               | 38           | 21             | 17             | 24             | 11             | 13          | 14             | 10             | 4              | 22          | 12             | 10             | 16         | 7              | 9              | 6              | 5              | 1          | 2              | 0              | 2           | 2           | 0          | 0           | 0          | 0         | 0         | 0                     | العلوم الطبيعية |
|             | Engineering & technology  | 1.2                    | 68               | 30           | 19             | 11             | 18             | 11             | 7           | 12             | 8              | 4              | 15          | 5              | 10             | 11         | 2              | 9              | 4              | 3              | 1          | 23             | 4              | 19          | 22          | 4          | 18          | 1          | 0         | 1         | الهندسة والتكنولوجيا  |                 |
|             | Medical & health sciences | 2.6                    | 144              | 46           | 38             | 8              | 37             | 29             | 8           | 9              | 9              | 0              | 97          | 85             | 12             | 82         | 71             | 11             | 15             | 14             | 1          | 1              | 0              | 1           | 1           | 0          | 0           | 0          | 0         | 0         | العلوم الطبية والصحية |                 |
|             | Agricultural science      | 0.5                    | 28               | 2            | 0              | 2              | 2              | 0              | 2           | 0              | 0              | 0              | 0           | 16             | 13             | 3          | 4              | 3              | 1              | 12             | 10         | 2              | 10             | 0           | 10          | 10         | 0           | 10         | 0         | 0         | 0                     | العلوم الزراعية |
|             | Support Staff             | 3.2                    | 182              | 94           | 70             | 24             | 55             | 36             | 19          | 39             | 34             | 5              | 65          | 37             | 28             | 40         | 19             | 21             | 25             | 18             | 7          | 23             | 11             | 12          | 22          | 11         | 11          | 1          | 0         | 1         | موظفو الدعم           |                 |
|             | Humanities                | 0.8                    | 45               | 8            | 7              | 1              | 8              | 7              | 1           | 0              | 0              | 0              | 17          | 11             | 6              | 11         | 7              | 4              | 6              | 4              | 2          | 20             | 8              | 12          | 19          | 8          | 11          | 1          | 0         | 1         | العلوم الإنسانية      |                 |
|             | Not specified elsewhere   | 6.2                    | 349              | 23           | 14             | 9              | 23             | 14             | 9           | 0              | 0              | 0              | 62          | 11             | 51             | 34         | 1              | 33             | 28             | 10             | 18         | 264            | 16             | 248         | 257         | 16         | 241         | 7          | 0         | 7         | غير محدد في مكان آخر  |                 |
|             | <b>Total</b>              | <b>15.6</b>            | <b>878</b>       | <b>241</b>   | <b>169</b>     | <b>72</b>      | <b>167</b>     | <b>108</b>     | <b>59</b>   | <b>74</b>      | <b>61</b>      | <b>13</b>      | <b>294</b>  | <b>174</b>     | <b>120</b>     | <b>198</b> | <b>110</b>     | <b>88</b>      | <b>96</b>      | <b>64</b>      | <b>32</b>  | <b>343</b>     | <b>40</b>      | <b>303</b>  | <b>333</b>  | <b>40</b>  | <b>293</b>  | <b>10</b>  | <b>0</b>  | <b>10</b> | المجموع               |                 |
|             | <b>Grand Total</b>        | <b>100.0</b>           | <b>5628</b>      | <b>2878</b>  | <b>937</b>     | <b>1941</b>    | <b>2400</b>    | <b>650</b>     | <b>1750</b> | <b>478</b>     | <b>287</b>     | <b>191</b>     | <b>1394</b> | <b>798</b>     | <b>596</b>     | <b>884</b> | <b>419</b>     | <b>465</b>     | <b>510</b>     | <b>379</b>     | <b>131</b> | <b>1356</b>    | <b>176</b>     | <b>1180</b> | <b>1218</b> | <b>127</b> | <b>1091</b> | <b>138</b> | <b>49</b> | <b>89</b> | المجموع الكلي         |                 |

موظفو البحث والتطوير حسب الجنسية والنوع ومبال العلوم والمهنة  
RESEARCH AND DEVELOPMENT PERSONNEL BY NATIONALITY, GENDER,  
FIELD OF SCIENCE AND OCCUPATION

2021

قطاع الأعمال

TABLE No. (16.1)

| Occupation                | Field of Science     | المجموع      |              |            |              | غير قطريين   |            |              |            | قطريين    |           |                            |                         | مجال العلوم             | المهنة                  |
|---------------------------|----------------------|--------------|--------------|------------|--------------|--------------|------------|--------------|------------|-----------|-----------|----------------------------|-------------------------|-------------------------|-------------------------|
|                           |                      | المجموع      | ذكور         | إناث       | المجموع      | ذكور         | إناث       | المجموع      | ذكور       | إناث      | المجموع   | ذكور                       | إناث                    |                         |                         |
|                           |                      | Total        | Males        | Females    | Total        | Males        | Females    | Total        | Males      | Females   | Total     | Males                      | Females                 |                         |                         |
| Natural science           |                      | 1.8          | 24           | 10         | 14           | 16           | 3          | 13           | 8          | 7         | 1         | 251                        | 81                      | 28                      | 53                      |
| Engineering & technology  |                      | 27.5         | 373          | 69         | 304          | 292          | 41         | 251          | 81         | 28        | 53        | المعلوماتية                | الهندسة والتكنولوجيا    | العلوم الطبيعية والصحية | الهندسة والتكنولوجيا    |
| Medical & health sciences |                      | 1.1          | 15           | 9          | 6            | 13           | 7          | 6            | 2          | 2         | 0         | المعلومات الزراعية         | العلوم الطبيعية والصحية | العلوم الزراعية         | العلوم الزراعية         |
| Agricultural science      |                      | 0.7          | 10           | 1          | 9            | 9            | 1          | 8            | 1          | 0         | 1         | الباحثون                   | العلوم الزراعية         | العلوم الزراعية         | الباحثون                |
| Researchers               | Social science       | 4.2          | 57           | 17         | 40           | 51           | 13         | 38           | 6          | 4         | 2         | المعلومات الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        |
| Humanities                |                      | 2.0          | 27           | 7          | 20           | 22           | 4          | 18           | 5          | 3         | 2         | غير محددة في مكان آخر      | غير محددة في مكان آخر   | غير محددة في مكان آخر   | غير محددة في مكان آخر   |
| Not specified elsewhere   |                      | 0.8          | 11           | 0          | 11           | 10           | 0          | 10           | 1          | 0         | 1         | المجموع                    | المجموع                 | المجموع                 | المجموع                 |
| <b>Total</b>              |                      | <b>38.1</b>  | <b>517</b>   | <b>113</b> | <b>404</b>   | <b>413</b>   | <b>69</b>  | <b>344</b>   | <b>104</b> | <b>44</b> | <b>60</b> |                            |                         |                         |                         |
| Natural science           |                      | 0.6          | 8            | 1          | 7            | 7            | 1          | 6            | 1          | 0         | 1         | المعلومات الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         |
| Engineering & technology  |                      | 33.8         | 459          | 16         | 443          | 437          | 11         | 426          | 22         | 5         | 17        | الهندسة والتكنولوجيا       | الهندسة والتكنولوجيا    | العلوم الطبيعية والصحية | الهندسة والتكنولوجيا    |
| Medical & health sciences |                      | 0.0          | 0            | 0          | 0            | 0            | 0          | 0            | 0          | 0         | 0         | المعلومات الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية |
| Technicians               | Agricultural science | 0.5          | 7            | 0          | 7            | 7            | 0          | 7            | 0          | 0         | 0         | المعلومات الزراعية         | العلوم الزراعية         | العلوم الزراعية         | العلوم الزراعية         |
| Social science            |                      | 1.3          | 17           | 5          | 12           | 16           | 5          | 11           | 1          | 0         | 1         | المعلومات الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        |
| Humanities                |                      | 0.4          | 5            | 1          | 4            | 5            | 1          | 4            | 0          | 0         | 0         | غير محددة في مكان آخر      | غير محددة في مكان آخر   | غير محددة في مكان آخر   | غير محددة في مكان آخر   |
| Not specified elsewhere   |                      | 0.0          | 0            | 0          | 0            | 0            | 0          | 0            | 0          | 0         | 0         | المجموع                    | المجموع                 | المجموع                 | المجموع                 |
| <b>Total</b>              |                      | <b>36.6</b>  | <b>496</b>   | <b>23</b>  | <b>473</b>   | <b>472</b>   | <b>18</b>  | <b>454</b>   | <b>24</b>  | <b>5</b>  | <b>19</b> |                            |                         |                         |                         |
| Natural science           |                      | 0.1          | 2            | 0          | 2            | 2            | 0          | 2            | 0          | 0         | 0         | المعلومات الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         |
| Engineering & technology  |                      | 1.7          | 23           | 4          | 19           | 22           | 4          | 18           | 1          | 0         | 1         | الهندسة والتكنولوجيا       | الهندسة والتكنولوجيا    | العلوم الطبيعية والصحية | الهندسة والتكنولوجيا    |
| Medical & health sciences |                      | 0.1          | 1            | 1          | 0            | 1            | 1          | 0            | 0          | 0         | 0         | المعلومات الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية |
| Support Staff             | Agricultural science | 0.7          | 10           | 0          | 10           | 10           | 0          | 10           | 0          | 0         | 0         | المعلومات الزراعية         | العلوم الزراعية         | العلوم الزراعية         | العلوم الزراعية         |
| Social science            |                      | 1.7          | 23           | 11         | 12           | 22           | 11         | 11           | 1          | 0         | 1         | المعلومات الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        |
| Humanities                |                      | 1.5          | 20           | 8          | 12           | 19           | 8          | 11           | 1          | 0         | 1         | غير محددة في مكان آخر      | غير محددة في مكان آخر   | غير محددة في مكان آخر   | غير محددة في مكان آخر   |
| Not specified elsewhere   |                      | 19.5         | 264          | 16         | 248          | 257          | 16         | 241          | 7          | 0         | 7         | المجموع                    | المجموع                 | المجموع                 | المجموع                 |
| <b>Total</b>              |                      | <b>25.3</b>  | <b>343</b>   | <b>40</b>  | <b>303</b>   | <b>333</b>   | <b>40</b>  | <b>293</b>   | <b>10</b>  | <b>0</b>  | <b>10</b> |                            |                         |                         |                         |
| Natural science           |                      | 2.5          | 34           | 11         | 23           | 25           | 4          | 21           | 9          | 7         | 2         | المعلومات الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         | العلوم الطبيعية         |
| Engineering & technology  |                      | 63.1         | 855          | 89         | 766          | 751          | 56         | 695          | 104        | 33        | 71        | الهندسة والتكنولوجيا       | الهندسة والتكنولوجيا    | العلوم الطبيعية والصحية | الهندسة والتكنولوجيا    |
| Medical & health sciences |                      | 1.2          | 16           | 10         | 6            | 14           | 8          | 6            | 2          | 2         | 0         | المعلومات الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية | العلوم الطبيعية والصحية |
| Agricultural science      |                      | 2.0          | 27           | 1          | 26           | 26           | 1          | 25           | 1          | 0         | 1         | المعلومات الزراعية         | العلوم الزراعية         | العلوم الزراعية         | العلوم الزراعية         |
| Total                     | Social science       | 7.2          | 97           | 33         | 64           | 89           | 29         | 60           | 8          | 4         | 4         | المعلومات الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        | العلوم الإنسانية        |
| Humanities                |                      | 3.8          | 52           | 16         | 36           | 46           | 13         | 33           | 6          | 3         | 3         | غير محددة في مكان آخر      | غير محددة في مكان آخر   | غير محددة في مكان آخر   | غير محددة في مكان آخر   |
| Not specified elsewhere   |                      | 20.3         | 275          | 16         | 259          | 267          | 16         | 251          | 8          | 0         | 8         | المجموع                    | المجموع                 | المجموع                 | المجموع                 |
| <b>Total</b>              |                      | <b>100.0</b> | <b>1,356</b> | <b>176</b> | <b>1,180</b> | <b>1,218</b> | <b>127</b> | <b>1,091</b> | <b>138</b> | <b>49</b> | <b>89</b> |                            |                         |                         |                         |

موظفو البحث والتطوير حسب الجنسية والنوع ومبال العلوم والمهنة  
RESEARCH AND DEVELOPMENT PERSONNEL BY NATIONALITY, GENDER,  
FIELD OF SCIENCE AND OCCUPATION

2021

المقاطع الحكومي

TABLE No. (16.2)

جدول رقم (١٦,٢)

| Occupation  | Field of Science          | المجموع |         | غير قطريين |         | قطريين |         | المجموع |         | مجال العلوم |       | المهنة               |
|-------------|---------------------------|---------|---------|------------|---------|--------|---------|---------|---------|-------------|-------|----------------------|
|             |                           | المجموع | ذكور    | إناث       | ذكور    | إناث   | ذكور    | إناث    | ذكور    | إناث        | ذكور  |                      |
|             |                           | Total   | Females | Total      | Females | Total  | Females | Total   | Females | Total       | Males |                      |
| Researchers | Natural science           | 11.1    | 155     | 64         | 91      | 103    | 21      | 82      | 52      | 43          | 9     | علوم الطبيعية        |
|             | Engineering & technology  | 3.0     | 42      | 19         | 23      | 16     | 3       | 13      | 26      | 16          | 10    | الهندسة والتكنولوجيا |
|             | Medical & health sciences | 13.5    | 188     | 87         | 101     | 161    | 63      | 98      | 27      | 24          | 3     | علوم الطبية والصحية  |
|             | Agricultural science      | 3.0     | 42      | 23         | 19      | 16     | 6       | 10      | 26      | 17          | 9     | علوم الزراعية        |
| Technicians | Social science            | 15.7    | 219     | 137        | 82      | 90     | 39      | 51      | 129     | 98          | 31    | علوم الاجتماع        |
|             | Humanities                | 7.7     | 107     | 81         | 26      | 38     | 24      | 14      | 69      | 57          | 12    | علوم الإنسانية       |
|             | Not specified elsewhere   | 1.4     | 19      | 10         | 9       | 4      | 3       | 1       | 15      | 7           | 8     | غير محدد في مكان آخر |
|             | Total                     | 55.4    | 772     | 421        | 351     | 428    | 159     | 269     | 344     | 262         | 82    | المجموع              |
|             | Natural science           | 1.0     | 14      | 10         | 4       | 12     | 8       | 4       | 2       | 2           | 0     | علوم الطبيعية        |
|             | Engineering & technology  | 3.2     | 45      | 9          | 36      | 43     | 7       | 36      | 2       | 2           | 0     | الهندسة والتكنولوجيا |
|             | Medical & health sciences | 12.1    | 168     | 136        | 32      | 143    | 116     | 27      | 25      | 20          | 5     | علوم الطبية والصحية  |
|             | Agricultural science      | 0.7     | 10      | 1          | 9       | 7      | 0       | 7       | 3       | 1           | 2     | علوم الزراعية        |
|             | Social science            | 2.4     | 33      | 10         | 23      | 21     | 3       | 18      | 12      | 7           | 5     | علوم الاجتماع        |
|             | Humanities                | 2.5     | 35      | 26         | 9       | 20     | 12      | 8       | 15      | 14          | 1     | علوم الإنسانية       |
|             | Not specified elsewhere   | 1.6     | 23      | 11         | 12      | 12     | 4       | 8       | 11      | 7           | 4     | غير محدد في مكان آخر |
|             | Total                     | 23.5    | 328     | 203        | 125     | 258    | 150     | 108     | 70      | 53          | 17    | المجموع              |
|             | Natural science           | 1.6     | 22      | 12         | 10      | 16     | 7       | 9       | 6       | 5           | 1     | علوم الطبيعية        |
|             | Engineering & technology  | 1.1     | 15      | 5          | 10      | 11     | 2       | 9       | 4       | 3           | 1     | الهندسة والتكنولوجيا |
|             | Medical & health sciences | 7.0     | 97      | 85         | 12      | 82     | 71      | 11      | 15      | 14          | 1     | علوم الطبية والصحية  |
|             | Agricultural science      | 1.1     | 16      | 13         | 3       | 4      | 3       | 1       | 12      | 10          | 2     | علوم الزراعية        |
|             | Social science            | 4.7     | 65      | 37         | 28      | 40     | 19      | 21      | 25      | 18          | 7     | علوم الاجتماع        |
|             | Humanities                | 1.2     | 17      | 11         | 6       | 11     | 7       | 4       | 6       | 4           | 2     | علوم الإنسانية       |
|             | Not specified elsewhere   | 4.4     | 62      | 11         | 51      | 34     | 1       | 33      | 28      | 10          | 18    | غير محدد في مكان آخر |
|             | Total                     | 21.1    | 294     | 174        | 120     | 198    | 110     | 88      | 96      | 64          | 32    | المجموع              |
|             | Natural science           | 13.7    | 191     | 86         | 105     | 131    | 36      | 95      | 60      | 50          | 10    | علوم الطبيعية        |
|             | Engineering & technology  | 7.3     | 102     | 33         | 69      | 70     | 12      | 58      | 32      | 21          | 11    | الهندسة والتكنولوجيا |
|             | Medical & health sciences | 32.5    | 453     | 308        | 145     | 386    | 250     | 136     | 67      | 58          | 9     | علوم الطبية والصحية  |
|             | Agricultural science      | 4.9     | 68      | 37         | 31      | 27     | 9       | 18      | 41      | 28          | 13    | علوم الزراعية        |
|             | Social science            | 22.7    | 317     | 184        | 133     | 151    | 61      | 90      | 166     | 123         | 43    | علوم الاجتماع        |
|             | Humanities                | 11.4    | 159     | 118        | 41      | 69     | 43      | 26      | 90      | 75          | 15    | علوم الإنسانية       |
|             | Not specified elsewhere   | 7.5     | 104     | 32         | 72      | 50     | 8       | 42      | 54      | 24          | 30    | غير محدد في مكان آخر |
|             | Total                     | 100.0   | 1,394   | 798        | 596     | 884    | 419     | 465     | 510     | 379         | 131   | المجموع              |

2021

Higher Education Sector قطاع التعليم العالي

TABLE No. (16.3)

جدول رقم (١٦,٣)

| Occupation  | Field of Science          | المجموع       |       |         |       | غير قطريين |         |       |       | قطريين  |         |                        |                        | مجال العلوم   |               | المهنة |  |
|-------------|---------------------------|---------------|-------|---------|-------|------------|---------|-------|-------|---------|---------|------------------------|------------------------|---------------|---------------|--------|--|
|             |                           | المجموع       |       | إذن     |       | المجموع    |         | إذن   |       | المجموع |         | إذن                    |                        | المجموع       |               |        |  |
|             |                           | Headcount (%) | Total | Females | Males | Total      | Females | Total | Males | Total   | Females | Total                  | Males                  |               |               |        |  |
| Researchers | Natural science           | 12.7          | 366   | 91      | 275   | 295        | 55      | 240   | 71    | 36      | 35      | 20                     | 34                     | علوم الطبيعية | علوم الطبيعية |        |  |
|             | Engineering & technology  | 14.4          | 413   | 64      | 349   | 359        | 44      | 315   | 54    | 20      | 34      | المهندسية والكلوروجينا | المهندسية والكلوروجينا |               |               |        |  |
|             | Medical & health sciences | 9.1           | 261   | 99      | 162   | 223        | 71      | 152   | 38    | 28      | 10      | علوم الطبية والصحية    | علوم الطبية والصحية    |               |               |        |  |
|             | Agricultural science      | 0.1           | 4     | 1       | 3     | 1          | 0       | 1     | 3     | 1       | 2       | علوم الزراعية          | علوم الزراعية          |               |               |        |  |
| Technicians | Social science            | 21.0          | 603   | 165     | 438   | 497        | 102     | 395   | 106   | 63      | 43      | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Humanities                | 12.2          | 350   | 100     | 250   | 290        | 71      | 219   | 60    | 29      | 31      | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Not specified elsewhere   | 6.7           | 194   | 55      | 139   | 193        | 54      | 139   | 1     | 1       | 0       | غير محدد في مكان آخر   | غير محدد في مكان آخر   |               |               |        |  |
|             | Total                     | 76.1          | 2,191 | 575     | 1,616 | 1,858      | 397     | 1,461 | 333   | 178     | 155     | المجموع                | المجموع                |               |               |        |  |
|             | Natural science           | 4.2           | 120   | 38      | 82    | 94         | 17      | 77    | 26    | 21      | 5       | علوم الطبيعية          | علوم الطبيعية          |               |               |        |  |
|             | Engineering & technology  | 4.0           | 114   | 26      | 88    | 96         | 21      | 75    | 18    | 5       | 13      | المهندسية والكلوروجينا | المهندسية والكلوروجينا |               |               |        |  |
|             | Medical & health sciences | 3.2           | 91    | 71      | 20    | 79         | 61      | 18    | 12    | 10      | 2       | علوم الطبية والصحية    | علوم الطبية والصحية    |               |               |        |  |
|             | Agricultural science      | 0.8           | 23    | 14      | 9     | 19         | 10      | 9     | 4     | 4       | 0       | علوم الزراعية          | علوم الزراعية          |               |               |        |  |
|             | Social science            | 0.7           | 21    | 9       | 12    | 15         | 5       | 10    | 6     | 4       | 2       | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Humanities                | 0.5           | 15    | 7       | 8     | 10         | 3       | 7     | 5     | 4       | 1       | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Not specified elsewhere   | 2.2           | 62    | 28      | 34    | 62         | 28      | 34    | 0     | 0       | 0       | غير محدد في مكان آخر   | غير محدد في مكان آخر   |               |               |        |  |
|             | Total                     | 15.5          | 446   | 193     | 253   | 375        | 145     | 230   | 71    | 48      | 23      | المجموع                | المجموع                |               |               |        |  |
|             | Natural science           | 1.3           | 38    | 21      | 17    | 24         | 11      | 13    | 14    | 10      | 4       | علوم الطبيعية          | علوم الطبيعية          |               |               |        |  |
|             | Engineering & technology  | 1.0           | 30    | 19      | 11    | 18         | 11      | 7     | 12    | 8       | 4       | المهندسية والكلوروجينا | المهندسية والكلوروجينا |               |               |        |  |
|             | Medical & health sciences | 1.6           | 46    | 38      | 8     | 37         | 29      | 8     | 9     | 9       | 0       | علوم الطبية والصحية    | علوم الطبية والصحية    |               |               |        |  |
|             | Agricultural science      | 0.1           | 2     | 0       | 2     | 2          | 0       | 2     | 0     | 0       | 0       | علوم الزراعية          | علوم الزراعية          |               |               |        |  |
|             | Social science            | 3.3           | 94    | 70      | 24    | 55         | 36      | 19    | 39    | 34      | 5       | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Humanities                | 0.3           | 8     | 7       | 1     | 8          | 7       | 1     | 0     | 0       | 0       | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Not specified elsewhere   | 0.8           | 23    | 14      | 9     | 23         | 14      | 9     | 0     | 0       | 0       | غير محدد في مكان آخر   | غير محدد في مكان آخر   |               |               |        |  |
|             | Total                     | 8.4           | 241   | 169     | 72    | 167        | 108     | 59    | 74    | 61      | 13      | المجموع                | المجموع                |               |               |        |  |
|             | Natural science           | 18.2          | 524   | 150     | 374   | 413        | 83      | 330   | 111   | 67      | 44      | علوم الطبيعية          | علوم الطبيعية          |               |               |        |  |
|             | Engineering & technology  | 19.4          | 557   | 109     | 448   | 473        | 76      | 397   | 84    | 33      | 51      | المهندسية والكلوروجينا | المهندسية والكلوروجينا |               |               |        |  |
|             | Medical & health sciences | 13.8          | 398   | 208     | 190   | 339        | 161     | 178   | 59    | 47      | 12      | علوم الطبية والصحية    | علوم الطبية والصحية    |               |               |        |  |
|             | Agricultural science      | 1.0           | 29    | 15      | 14    | 22         | 10      | 12    | 7     | 5       | 2       | علوم الزراعية          | علوم الزراعية          |               |               |        |  |
|             | Social science            | 24.9          | 718   | 244     | 474   | 567        | 143     | 424   | 151   | 101     | 50      | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Humanities                | 13.0          | 373   | 114     | 259   | 308        | 81      | 227   | 65    | 33      | 32      | علوم الإنسانية         | علوم الإنسانية         |               |               |        |  |
|             | Not specified elsewhere   | 9.7           | 279   | 97      | 182   | 278        | 96      | 182   | 1     | 1       | 0       | غير محدد في مكان آخر   | غير محدد في مكان آخر   |               |               |        |  |
|             | Total                     | 100.0         | 2,878 | 937     | 1,941 | 2,400      | 650     | 1,750 | 478   | 287     | 191     | المجموع                | المجموع                |               |               |        |  |

موظفو البحث والتطوير حسب الجنسية والنوع ومهام العلوم والمهنة  
RESEARCH AND DEVELOPMENT PERSONNEL BY NATIONALITY, GENDER,  
FIELD OF SCIENCE AND OCCUPATION

2021

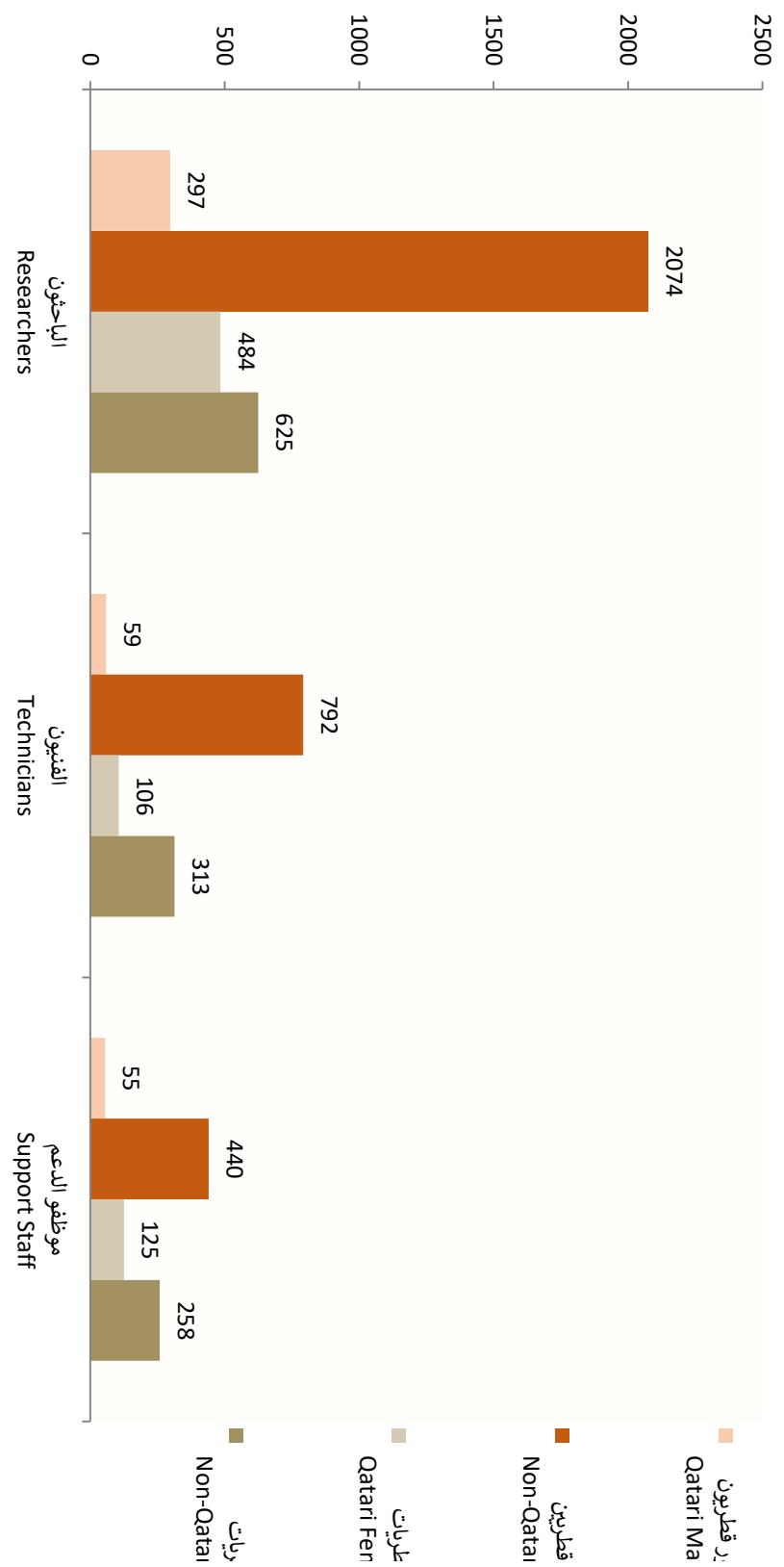
المجموع

TABLE No. (16.4)

| Occupation                | Field of Science | المجموع       |              |              |              | غير قطريين Non-Qatari |              |              |              | قطريون Qataris |            |              |            | مجال العلوم | المهنة                             |                                    |           |
|---------------------------|------------------|---------------|--------------|--------------|--------------|-----------------------|--------------|--------------|--------------|----------------|------------|--------------|------------|-------------|------------------------------------|------------------------------------|-----------|
|                           |                  | المجموع Total |              | ذكور Males   |              | المجموع Total         |              | ذكور Males   |              | المجموع Total  |            | ذكور Males   |            |             |                                    |                                    |           |
|                           |                  | Total         | Females      | Total        | Males        | Total                 | Females      | Total        | Males        | Total          | Females    | Total        | Males      |             |                                    |                                    |           |
| Natural science           |                  | 9.7           | 545          | 165          | 380          | 414                   | 79           | 335          | 131          | 86             | 45         | 161          | 64         | 97          | العلوم الطبيعية والهندسة والتقنيات |                                    |           |
| Engineering & technology  |                  | 14.7          | 828          | 152          | 676          | 667                   | 88           | 579          | 161          | 64             | 97         | 133          | 54         | 13          | العلوم الطبية والصحية              |                                    |           |
| Medical & health sciences |                  | 8.2           | 464          | 195          | 269          | 397                   | 141          | 256          | 67           | 54             | 12         | 30           | 18         | 12          | العلوم الزراعية                    |                                    |           |
| Agricultural science      |                  | 1.0           | 56           | 25           | 31           | 26                    | 7            | 19           | 30           | 165            | 76         | 165          | 76         | 165         | العلوم الاجتماعية                  |                                    |           |
| Social science            |                  | 15.6          | 879          | 319          | 560          | 638                   | 154          | 484          | 241          | 297            | 134        | 89           | 45         | 45          | العلوم الإنسانية                   |                                    |           |
| Humanities                |                  | 8.6           | 484          | 188          | 296          | 350                   | 99           | 251          | 134          | 89             | 45         | 251          | 134        | 89          | غير محددة في مكان آخر              |                                    |           |
| Not specified elsewhere   |                  | 4.0           | 224          | 65           | 159          | 207                   | 57           | 150          | 17           | 8              | 9          | 29           | 23         | 6           | المجموع                            |                                    |           |
| <b>Total</b>              |                  | <b>61.8</b>   | <b>3,480</b> | <b>1,109</b> | <b>2,371</b> | <b>2,699</b>          | <b>625</b>   | <b>2,074</b> | <b>781</b>   | <b>484</b>     | <b>297</b> | <b>1,105</b> | <b>313</b> | <b>792</b>  | <b>165</b>                         | <b>106</b>                         | <b>59</b> |
| Natural science           |                  | 2.5           | 142          | 49           | 93           | 113                   | 26           | 87           | 29           | 23             | 6          | 30           | 12         | 30          | العلوم الطبيعية والهندسة والتقنيات |                                    |           |
| Engineering & technology  |                  | 11.0          | 618          | 51           | 567          | 576                   | 39           | 537          | 42           | 12             | 30         | 133          | 54         | 13          | العلوم الطبية والصحية              |                                    |           |
| Medical & health sciences |                  | 4.6           | 259          | 207          | 52           | 222                   | 177          | 45           | 37           | 30             | 7          | 30           | 7          | 2           | العلوم الزراعية                    |                                    |           |
| Agricultural science      |                  | 0.7           | 40           | 15           | 25           | 33                    | 10           | 23           | 7            | 5              | 2          | 23           | 7          | 5           | العلوم الاجتماعية                  |                                    |           |
| Social science            |                  | 1.3           | 71           | 24           | 47           | 52                    | 13           | 39           | 19           | 11             | 8          | 19           | 11         | 8           | العلوم الإنسانية                   |                                    |           |
| Humanities                |                  | 1.0           | 55           | 34           | 21           | 35                    | 16           | 19           | 20           | 18             | 2          | 20           | 18         | 2           | غير محددة في مكان آخر              |                                    |           |
| Not specified elsewhere   |                  | 1.5           | 85           | 39           | 46           | 74                    | 32           | 42           | 11           | 7              | 4          | 42           | 11         | 7           | المجموع                            |                                    |           |
| <b>Total</b>              |                  | <b>22.6</b>   | <b>1,270</b> | <b>419</b>   | <b>851</b>   | <b>1,105</b>          | <b>313</b>   | <b>792</b>   | <b>165</b>   | <b>106</b>     | <b>59</b>  | <b>1,105</b> | <b>313</b> | <b>792</b>  | <b>165</b>                         | <b>106</b>                         | <b>59</b> |
| Natural science           |                  | 1.1           | 62           | 33           | 29           | 42                    | 18           | 24           | 20           | 15             | 5          | 17           | 11         | 6           | العلوم الطبيعية والهندسة والتقنيات |                                    |           |
| Engineering & technology  |                  | 1.2           | 68           | 28           | 40           | 51                    | 17           | 34           | 17           | 11             | 6          | 51           | 17         | 11          | العلوم الطبية والصحية              |                                    |           |
| Medical & health sciences |                  | 2.6           | 144          | 124          | 20           | 120                   | 101          | 19           | 24           | 23             | 1          | 19           | 24         | 1           | العلوم الزراعية                    |                                    |           |
| Agricultural science      |                  | 0.5           | 28           | 13           | 15           | 16                    | 3            | 13           | 12           | 10             | 2          | 10           | 12         | 2           | العلوم الاجتماعية                  |                                    |           |
| Support Staff             |                  |               |              |              |              |                       |              |              |              |                |            |              |            |             | موظفو الدعم                        |                                    |           |
| Social science            |                  | 3.2           | 182          | 118          | 64           | 117                   | 66           | 51           | 65           | 52             | 13         | 66           | 51         | 65          | العلوم الإنسانية                   |                                    |           |
| Humanities                |                  | 0.8           | 45           | 26           | 19           | 38                    | 22           | 16           | 7            | 4              | 3          | 38           | 22         | 16          | العلوم الابداعية                   |                                    |           |
| Not specified elsewhere   |                  | 6.2           | 349          | 41           | 308          | 314                   | 31           | 283          | 35           | 10             | 25         | 31           | 283        | 35          | غير محددة في مكان آخر              |                                    |           |
| <b>Total</b>              |                  | <b>15.6</b>   | <b>878</b>   | <b>383</b>   | <b>495</b>   | <b>698</b>            | <b>258</b>   | <b>440</b>   | <b>180</b>   | <b>125</b>     | <b>55</b>  | <b>1,105</b> | <b>313</b> | <b>792</b>  | <b>165</b>                         | <b>106</b>                         | <b>59</b> |
| Natural science           |                  | 13.3          | 749          | 247          | 502          | 569                   | 123          | 446          | 180          | 124            | 56         | 123          | 446        | 180         | 124                                | العلوم الطبيعية والهندسة والتقنيات |           |
| Engineering & technology  |                  | 26.9          | 1,514        | 231          | 1,283        | 1,294                 | 144          | 1,150        | 220          | 87             | 133        | 133          | 87         | 133         | 133                                | العلوم الطبية والصحية              |           |
| Medical & health sciences |                  | 15.4          | 867          | 526          | 341          | 739                   | 419          | 320          | 128          | 107            | 21         | 320          | 107        | 128         | 107                                | العلوم الزراعية                    |           |
| Agricultural science      |                  | 2.2           | 124          | 53           | 71           | 75                    | 20           | 55           | 49           | 33             | 16         | 55           | 49         | 33          | 33                                 | العلوم الاجتماعية                  |           |
| Total                     |                  | 20.1          | 1,132        | 461          | 671          | 807                   | 233          | 574          | 325          | 228            | 97         | 807          | 233        | 574         | 325                                | المجموع                            |           |
| Social science            |                  | 10.4          | 584          | 248          | 336          | 423                   | 137          | 286          | 161          | 111            | 50         | 336          | 137        | 286         | 161                                | العلوم الإنسانية                   |           |
| Humanities                |                  | 11.7          | 658          | 145          | 513          | 595                   | 120          | 475          | 63           | 25             | 38         | 120          | 475        | 63          | 25                                 | غير محددة في مكان آخر              |           |
| Not specified elsewhere   |                  |               |              |              |              |                       |              |              |              |                |            |              |            |             |                                    | المجموع                            |           |
| <b>Total</b>              |                  | <b>100.0</b>  | <b>5,628</b> | <b>1,911</b> | <b>3,717</b> | <b>4,502</b>          | <b>1,196</b> | <b>3,306</b> | <b>1,126</b> | <b>715</b>     | <b>411</b> | <b>1,126</b> | <b>715</b> | <b>411</b>  | <b>411</b>                         | <b>المجموع</b>                     |           |

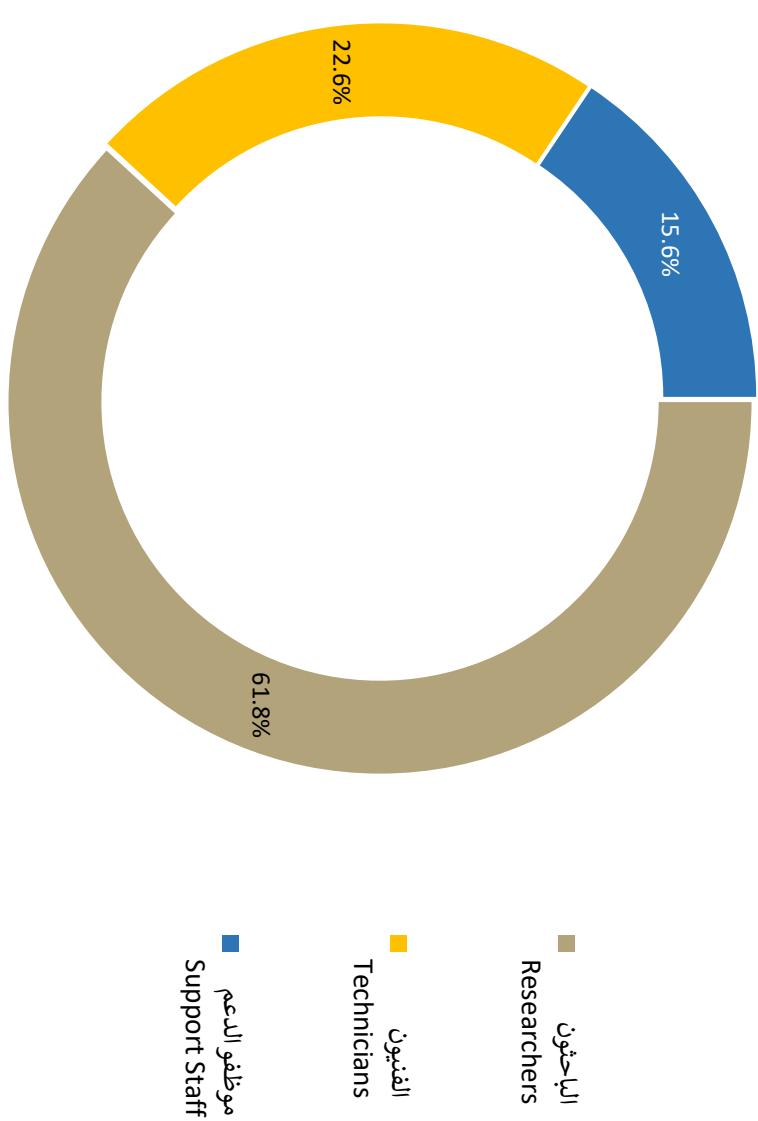
موظفو البحث والنوع والمهنة  
RESEARCH AND DEVELOPMENT PERSONNEL BY NATIONALITY  
GENDER AND OCCUPATION

2021



الشكل رقم (٥)

موظفو البحث والتطوير حسب المهنة  
RESEARCH AND DEVELOPMENT PERSONNEL BY OCCUPATION  
2021



الشكل رقم (٦) (رسم)  
Graph No. (6) (R&D)

## مخرجات النشر لقطاع التعليم العالي

### PUBLICATION OUTPUTS OF HIGHER EDUCATION SECTOR

2018-2021

TABLE NO. (17)

| Publication Outputs | المجموع  |                      | ملخصات السياسات وغيرها |              | تقارير العملاء                                  |                   | الكتب    |              | المقالات الموثقة |              |
|---------------------|----------|----------------------|------------------------|--------------|---|-------------------|----------|--------------|------------------|--------------|
|                     | Total    | Policy briefs; other | Client reports         | Books        | Peer reviewed articles (Web of Science; Scopus) | Mexriyat al-nashr |          |              |                  |              |
|                     | النسبة % | العدد Number         | النسبة %               | العدد Number | النسبة %  | العدد Number      | النسبة % | العدد Number | النسبة %         | العدد Number |
| 2018                | 100.0    | 4,531                | 17.1                   | 776          | 0.0   | 0                 | 11.5     | 523          | 71.3             | 3,232        |
| 2021                | 100.0    | 6,269                | 12.2                   | 764          | 0.1   | 8                 | 5.7      | 360          | 81.9             | 5,137        |

جدول رقم (١٧)

\* خاص بقطاع التعليم العالي

مخرجات النشر حسب القطاعات (الأعمال، حكومي، التعليم العالي)

PUBLICATION OUTPUTS BY SECTORS (BUSINESS, GOVERNMENT & HIGHER EDUCATION)

2021

TABLE No. (18)

جدول رقم (١٨)

| Publication Outputs                                | قطاع التعليم العالي |                 | القطاع الحكومي |                 | قطاع الأعمال |                 | مخرجات النشر                 |
|--|---------------------|-----------------|----------------|-----------------|--------------|-----------------|------------------------------|
|  | %                   | المعد<br>Number | %              | المعد<br>Number | %            | المعد<br>Number |                              |
| Peer reviewed articles<br>(Web of Science, Scopus) | 36.2                | 5,137           | 26.8           | 1,252           | 8.3          | 344             | مقالات المؤثفة               |
| Books  | 2.5                 | 360             | 2.5            | 117             | 1.6          | 68              | الكتب                        |
| Client reports                                     | 0.1                 | 8               | 0.2            | 10              | 37.1         | 1,531           | تقارير العملاء               |
| Policy briefs, other                               | 5.4                 | 764             | 1.6            | 74              | 3.1          | 129             | ملخصات السياسات وغيرها       |
| Number of local research                           | 4.0                 | 569             | 31.6           | 1,474           | 1.9          | 80              | عدد الأبحاث المحلية          |
| Number of international research                   | 9.3                 | 1,317           | 11.2           | 524             | 1.5          | 61              | عدد الأبحاث الدولية          |
| Number of papers published                         | 28.8                | 4,093           | 3.6            | 166             | 2.2          | 91              | عدد المنشورة                 |
| Number of scientific journals                      | 7.5                 | 1,062           | 3.8            | 178             | 36.7         | 1,516           | عدد الدوريات العلمية         |
| Number of local research projects                  | 3.8                 | 545             | 13.4           | 624             | 0.6          | 24              | عدد المنشرات البحثية المحلية |
| Number of international research projects          | 1.5                 | 215             | 1.1            | 52              | 0.3          | 13              | عدد المنشرات البحثية الدولية |
| Other  | 0.9                 | 122             | 4.2            | 198             | 6.6          | 272             | أخرى                         |
| <b>Total</b>                                       | <b>100</b>          | <b>14,192</b>   | <b>100</b>     | <b>4,669</b>    | <b>100</b>   | <b>4,129</b>    | <b>المجموع</b>               |

## Annexes



## Annex (1)

### Research and Development Survey Form 2021



#### المسح الوطني لمدخلات البحث والتطوير

#### National Survey of Research and Development (R&D) Input

[Data are Confidential by Law]

Year ( )

السنة ( )

[البيانات سرية طبقاً للقانون]

| Sector:                               | الأعمال<br>Business      | الحكومي<br>Government    | التعليم العالي<br>Higher Education | القطاع:<br>ضع علامة (✓) لقطاع مؤسستكم |
|---------------------------------------|--------------------------|--------------------------|------------------------------------|---------------------------------------|
| Tick (✓) for your organization sector | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>           |                                       |

#### PART ONE: GENERAL INFORMATION

#### الجزء الأول: معلومات عامة

|  |  |
|--|--|
| 1. Name of Institution                   | 1. اسم المؤسسة                                 |
| 2. Name of reporting unit (e.g. faculty) | 2. اسم الوحدة المصرحة (على سبيل المثال الكلية) |

##### Business Sector

2.1 List the principal activities and/or National Classification / International Standard Industrial Classification (ISIC) code (see Appendix C) from which your company derives its main income.

٢.١ اذكر قائمة الأنشطة الرئيسية وأورمز التصنيف الوطني/التصنيف الصناعي الدولي الموحد (انظر الملحق ج الذي تسمى به شركتك دخلها الأساسي).

| مداخيل الشركة التي تم الحصول عليها (%)<br>Company income obtained (%) | التصنيف الصناعي الدولي الموحد للأنشطة الاقتصادية<br>International Standard Industrial Classification (ISIC) | الأنشطة<br>Activities |
|---|---|-----------------------|
|   |   |                       |
|   |   |                       |

2.2 Parent Company (if applicable) with % ownership

٢.٢ الشركة الأم (إن وجدت) مع النسبة المئوية للملكية

| النسبة المئوية للملكية<br>Ownership % | الشركة الأم<br>Parent company |
|---------------------------------------|-------------------------------|
|                                       |                               |

2.3 Approximate foreign/local ownership split (By ultimate ownership if complex holding structures exist.)

٢.٣ نسبة الاملاك الأجنبية/المحلية (الملكية النهائية في حال وجود هيكل معقد.)

| المجموع<br>Total | آخر<br>Other | الصين<br>China | الولايات المتحدة الأمريكية<br>USA | الاتحاد الأوروبي<br>EU | محلي<br>Domestic |
|------------------|--------------|----------------|-----------------------------------|------------------------|------------------|
| %100             |              |                |                                   |                        |                  |

2.4 Gross sales revenue or turnover local currency (1000 QR) (Optional)

٤. إجمالي الإيرادات بالعملة المحلية  
(ألف ريال قطري) (اختياري)

|   |   |
|---|---|
| 3. Financial Year   | 3. السنة المالية  |
| 4. Annual budget Qatari Riyal (Optional)  | ٤. الميزانية السنوية بالريال القطري (اختياري)   |
| 5. Total number of all employees (Optional)   | ٥. إجمالي عدد العاملين (اختياري)  |
| 6. Did the reporting unit perform any R&D during the fiscal year ( ) ?                                  | ٦. هل أنجزت الوحدة المصرحة بـ <b>بحث وتطوير</b> خلال السنة المالية ( ) ؟                                    |
| 6.1 If the answer is "Yes"  | ٦.١ في حالة الإجابة بـ "نعم"  |
| A. Extramural R&D (move to page 13)<br>B. In-House R&D or both (In-House & Extramural R&D) (continue)   | أ. خارجي (انتقل إلى صفحة ١٣)<br>ب. داخلي أو الاثنين معاً (داخلي وخارجي) (استمر)                             |
| 6.2 If the unit does not perform any R&D, tick this box and return the questionnaire as a NIL response. | ٦.٢ إذا كانت الوحدة لا تنجذب أنشطة بحث وتطوير، ضع علامة في هذه الخانة والرجاء إرجاع الاستبيان كاجابة سلبية. |

#### Person Completing the Questionnaire:

#### الشخص الذي استوفى الاستبيان:

|                |                   |
|----------------|-------------------|
| Name           | الاسم             |
| Job / Position | الوظيفة           |
| Mobile         | رقم الهاتف        |
| E-mail         | البريد الإلكتروني |
| Website        | الموقع الإلكتروني |
| Signature      | التاريخ           |
|                | التوقيع           |

The following definitions are important in the completion of the survey questionnaire:

إن التعريفات التالية مهمة لإكمال الاستبيان:

### Definition of R&D:

This survey follows the Frascati Manual guidelines for conducting surveys on the inputs to R&D (OECD, 2002).

It defines research and development (R&D) as:

- **Research** is creative work and original investigation undertaken on a systematic basis to gain new knowledge, including knowledge of humanity, culture and society.
- **Development** is the application of research findings or their scientific knowledge for the creation of new or significantly improved products, applications or processes.

The basic criterion for distinguishing R&D from related activities is the presence in R&D of an appreciable element of novelty and the resolution of scientific and/or technological uncertainty, i.e. when the solution to a problem is not readily apparent to someone familiar with the basic stock of commonly used knowledge and techniques in the area concerned.

يتبّع هذا الاستبيان المبادئ التوجيهية للدليل فراسكتي لإجراء الاستبيانات على مدخلات البحث والتطوير (منظمة التعاون الاقتصادي والتنمية، ٢٠٠٢).

وهي تعرّف البحث والتطوير كالتالي:

- البحث هو العمل الإبداعي والمنتظم يتم القيام به لزيادة مخزون المعرفة بما في ذلك معرفة الإنسان والثقافة والمجتمع.
- التطوير هو تطبيق نتائج البحث أو المعرف العلمية بهدف إنتاج منتجات أو تطبيقات أو أساليب جديدة أو تحسينها بشكل كبير.

إن المعيار الأساسي لتمييز البحث والتطوير عن الأنشطة ذات الصلة هو احتواه على عنصر لا يسْتَهِن به من التجديد وتبييد الشك العلمي /أو التكنولوجي، أي عندما لا يبدو حل مشكلة ما بديهيًا بالنسبة لشخص مُحلّع على جملة المعرف والتقييمات الأساسية المستعملة في القطاع المعنى.

### نطاق الاستبيان:

- يطلب الاستبيان بيانات عن البحث والتطوير الداخلي المنجز من طرف منظمتكم على التراب الوطني.

يتميز أي نشاط مصنف كبحث وتطوير بأصالته؛ وينبغي أن يكون البحث هدفه الأساسي، وأن يمتلك القدرة على إنتاج نتائج عامة تسمح بزيادة رصيد المعرف (النظرية وأو العملية) للبشرية.

يشمل البحث والتطوير ما يلي دون الاقتصر علىها:  
· أنشطة الأفراد الذين يعملون بوضوح في مجال البحث والتطوير.

بالإضافة إلى ذلك، يتضمن النشاط البحثي:

- تقديم دعم مادي أو تقني أو إداري أو مساعدة للموظفين الذين يشاركون مباشرةً في البحث والتطوير.

· إدارة الموظفين الذين يشاركون بشكل مباشر في البحث والتطوير أو تقديم الدعم أو المساعدة المادية أو الفنية أو الإدارية لأنشطة البحث والتطوير التي يقوم بها الطلاب في إطار دروس الدراسات العليا.

· تطوير برمجيات عندما يكون هدف هذا المشروع هو تبييد شك على.

· العمل البحثي في مجال العلوم الطبيعية، الهندسة، العلوم الطبية، العلوم الزراعية، العلوم الاجتماعية والعلوم الإنسانية.

· البحث والتطوير المنجز في إطار مشروع مفترض لا يتحذّل شكل شركة.

· مشاريع البحث والتطوير المنجزة بصورة تعاقدية لحساب كيانات قانونية أخرى، مثل مؤسسات الأعمال. **خاص بقطاع الأعمال والقطاع الحكومي**

· "ردد الفعل للبحث والتطوير" التي تهدف إلى حل المشاكل التي تحدث بعد مرحلة البحث والتطوير الصناعية - على سبيل المثال، المشاكل التقنية الناشئة خلال أشواط الإنتاج الأولى. **خاص بقطاع الأعمال والقطاع الحكومي**

· النماذج الأولية والمعامل التجريبية، طالما يكون الهدف الرئيسي هو تحقيق مزيد من التحسينات.

**خاص بقطاع الأعمال**

· التصميم والرسم الصناعي فقط إذا كان ذلك ضروريًا للبحث والتطوير. **خاص بقطاع الأعمال**

يسنتني البحث والتطوير:

يتم استبعاد الأنشطة المحددة التالية إلا إذا تم استخدامها في المقام الأول لدعم أو كجزء من أنشطة البحث والتطوير التي تجري في هذه الوحدة المصرفية:

· خدمات المعلومات العلمية والتقنية. · الهندسة والخدمات التقنية.

· جمع البيانات للأغراض العامة /الروتينية. · الاختبارات الروتينية وأعمال توحيد المعايير.

· دراسات الجدوى (ماعداً مشاريع البحث والتطوير).

· الرعاية الطبية المتخصصة الروتينية، على سبيل المثال خدمات علم الأمراض الروتينية.

· الجوانب التجارية والقانونية والإدارية لأنشطة تسجيل براءات الاختراع وحقوق التأليف أو الترخيص.

· برمجيات الكمبيوتر الروتينية، وعمل الأنظمة أو صيانة البرامج عندما لا يوجد شوك تكنولوجيا تستوجب تبييدها.

**الإعداد للتعليم. خاص بقطاع التعليم العالي والقطاع الحكومي**

· أنشطة التطوير الجامعية. **خاص بقطاع التعليم العالي والقطاع الحكومي**

### Scope of survey:

- The survey requests data on **R&D performed IN-HOUSE by your organization** on the national territory.

#### R&D in research institutions:

Any activity classified as R&D is characterised by originality; it should have investigation as a primary objective and should have the potential to produce results that are sufficiently general for humanity's stock of knowledge (theoretical and/or practical) to be recognisably increased.

R&D includes – but is not limited to:

Activities of personnel who are obviously engaged in R&D.

#### In addition, research activity includes:

- The provision of professional, technical, administrative or clerical support and/or assistance to personnel directly engaged in R&D.
- The management of personnel who are either directly engaged in R&D or are providing professional, technical or clerical support or assistance to those R&D activities of students undertaking postgraduate research courses.
- Software development where the aim of the project is the systematic resolution of a scientific uncertainty.
- Research work in the natural sciences, engineering, medical sciences, agricultural sciences, social sciences and the humanities.
- R&D carried out as a participant in any unincorporated joint venture.
- R&D projects performed on contract for other legal entities, such as businesses. **Business and Government Sector**
- "Feedback R&D" directed at solving problems occurring beyond the original R&D phase – for example, technical problems arising during initial production runs.. **Business and Government Sector**
- Prototypes and pilot plants, as long as long as the primary objective is to make further improvements. **Business Sector**
- Industrial design and drawing but only if required for R&D. **Business Sector**

### R&D excludes:

The following specific activities are excluded, except where they are used primarily for the support of or as part of R&D activities performed in this reporting unit:

- Scientific and technical information services.
- General purpose or routine data collection.
- Feasibility studies (except into R&D projects).
- Specialised routine medical care, for example routine pathology services.
- The commercial, legal and administrative aspects of patenting, copyrighting or licensing activities.
- Routine computer programming, systems work or software maintenance where there are no technological uncertainties to be resolved.
- Preparation for teaching. **Higher Education and Government Sector**
- Academic development activities. **Higher Education and Government Sector**
- Engineering and technical services.
- Standardisation and routine testing.

#### Examples : Business and Government Sector

- Investigating electrical conduction in crystals is basic research; application of crystallography to the properties of alloys is applied research.
- New chip designs involve development.
- Investigating the limiting factors in chip element placement lies at the border between basic and applied research, and increasingly involves nanotechnology.
- Much service R&D involves software development where the completion of the project is dependent on a scientific or technological advance and the aim of the project is the systematic resolution of a scientific or technological uncertainty.

#### الأمثلة : خاص بقطاع الأعمال والحكومي

- البحث في التوصيل الكهربائي للبلورات يدرج ضمن البحث الأساسية: تطبيق علم البلوريات على خصائص السبائك يتدرج ضمن البحث التطبيقية.
- النماذج الجديدة من الرقائق تشمل عملية تطوير.
- تقع دراسة العوامل التي تحد من إمكانية وضع عناصر الرقائق على الحدود بين البحث الأساسية والتطبيقية، وتحتوي على نسبة متزايدة من تكنولوجيا النانو.
- تشمل العديد من خدمات البحث والتطوير تطوير برمجيات عندما يعتمد انجاز المشروع على احراز تقدم على أو تكنولوجي وعندما يكون الهدف من المشروع هو التبديل المهي شك على أو تكنولوجي.

#### Borderline cases

##### Higher Education Sector:

Research institutes (such as specialised health care clinics or "attached" research institutions) that are not directly concerned with third-level teaching but host activities, R&D or otherwise, that are all the same closely associated with the higher education sector should be carefully considered:

- Entities initiated by a higher education institution (HEI) but subsequently became a not-for-profit or business entity should be classified as such and surveyed by not-for profit or business sectors even if there are close links with an HEI.
- Staff and R&D expenditure should be reported where it was incurred.
- Staff members on the payroll of the HEI (e.g. department heads) should be reported by the HEI concerned.
- Staff that appears on the payroll of the "borderline" institution should be reported by the institution concerned and not the HEI.
- The same applies to equipment and running costs.
- It would be appreciated if we were informed of all such institutions to ensure that they are surveyed by the appropriate sectors and to minimise double counting.

##### حالات تقع على الحدود

##### خاص بقطاع التعليم العالي:

- يجب تحصص معاهد البحث (مثل عيادات الرعاية الصحية المتخصصة أو مؤسسات البحث "المترتبة") التي لا يتم مباشرة بالتدريس في المستوى العالي غير أنها تستضيف أنشطة بحث وتطوير وغيرها، مرتبطة بشكل وثيق بقطاع التعليم العالي بعنوان:
- الكيانات التي تعاقدت معها مؤسسة التعليم العالي ولكنها أصبحت في وقت لاحق شركة أو مؤسسة لا تستهدفربح يجب تصنيفها على ذلك النوع وفحصها ضمن قطاعي مؤسسات الأعمال وممؤسسات خاصة لا تستهدفربح حتى لو كانت هناك روابط وثيقة مع مؤسسات التعليم العالي.
  - ينبغي التصريح بتكلفة اليد العاملة والبحث والتطوير عند حصولها.
  - مؤسسة التعليم العالي المنوية.
  - ينبغي التصريح بالموظفين ضمن رواتب مؤسسة التعليم العالي (مثل رؤساء الأقسام) من قبل المؤسسة المعنية وليس مؤسسة التعليم العالي.
  - الأنم نفسه ينطبق على المعدات وتکاليف التشغيل.
  - من المستحسن اعلامنا حول جميع هذه المؤسسات حتى يتم استقصاؤها من قبل القطاعات المناسبة والتقليل من ازدواجية الحساب.

##### المستشفيات الحكومية/الجامعة:

يُطلب من مؤسسات التعليم العالي الإبلاغ عن جميع الموظفين الأكاديميين والقيّمين الذين ينجزون أنشطة بحث وتطوير مع تعبيّنات مشتركة بين المستشفيات الحكومية/الجامعة ومؤسسات التعليم العالي، وهذا يشمل عدد الموظفين، المكافئون بالوقت الكامل، تكاليف اليد العاملة، التجهيزات وتکاليف التشغيل.

بطبيعة الحال، لا يمكن عكس بعض هذه التكاليف في بيانات نظام معلومات الإدارة في مؤسسات التعليم العالي أو البيانات المالية لكننا نطلب أن يتم تضمين أفضل تقدير عند الضرورة.

##### خاص بالقطاع الحكومي:

- تملك المؤسسات (مؤسسات البحث العامة والدوائر الحكومية الأخرى التي تعمل في البحث والتطوير) التي يكون نشاطها الرئيسي هو البحث والتطوير في كثير من الأحيان أنشطة ثانوية، غير البحث والتطوير (مثل المعلومات العلمية والتقنية، الاختبارات، مراقبة الجودة، التحليل، وثائق إعلامية والدراسات الصناعي السياسات). في حال انجاز النشاط الثانوي أساساً لصلاحية البحث والتطوير، يجب تضمينه في أنشطة البحث والتطوير؛ أما إذا وقع تصميم النشاط الثانوي أساساً لتلبية حاجيات لا تتعلق بالبحث والتطوير، فيجب استبعاده.
- تقوم مؤسسات خدمات العلوم والتكنولوجيا التي يكون هدفها الرئيسي خدمة/نشاطاً علمياً برتبط بالبحث والتطوير في كثير من الأحيان ببعض الأبحاث في إطار هذا النشاط. ينبغي عزل هذه البحوث وتضمينها عند قياس البحث والتطوير.

##### Government Sector:

- Institutions (public research institutions and other government departments engaged in R&D) whose principal activity is R&D often have secondary, non-R&D activities (e.g. scientific and technical information, testing, quality control, analysis, background papers and studies for policymakers). Insofar as a secondary activity is undertaken primarily in the interests of R&D, it should be included in R&D activities; if the secondary activity is designed essentially to meet needs other than R&D, it should be excluded.
- S&T service institutions whose main purpose is an R&D-related scientific service/activity often undertake some research in connection with this activity. Such research should be isolated and included when measuring R&D.

##### خاص بقطاع الأعمال:

- يتمثل أكبر مصدر للخطأ في قياس البحث والتطوير في صعوبة تحديد الخطأ الفاصل بين التطوير التجاري والأنشطة ذاتصلة المطلوبة لتحقيق الابتكار.
- يجب الحرص على استبعاد الأنشطة التي هي بلا شك جزءاً من عملية الابتكار، ونادرًا ما تنطوي على البحث والتطوير، على سبيل المثال تسجيل براءات الاختراع والتخيص، أبحاث السوق، بدء الصناعة، ولأدوات وإعادة تصميم عملية التصنيع.
  - من الصعب أيضاً تحديد الخطأ الفاصل بين التطوير التجاري والتطوير التجاري الذي يسبق الإنتاج، مثل إنتاج عرض واختبار، والإنتاج الذي ينطوي على جميع الحالات الصناعية. إذا كان الهدف الرئيسي هو إدخال المزيد من التحسينات الفنية على المنتج أو العملية، عندما يقع العمل ضمن تعرّف البحث والتطوير. في المقابل، إذا سبق تطوير المنتج أو العملية أو المقاربة بشكل كبير وكان الهدف الرئيسي هو تطوير الأسواق، والتخطيط لمرحلة ما قبل الإنتاج أو الحصول على نظام إنتاج أو تحكم يعمل بسلامة، لا يعتبر ذلك من قبيل البحث والتطوير.

##### Business Sector:

The greatest source of error in measuring R&D is the difficulty of locating the cut-off point between experimental development and the related activities required to realise an innovation.

- Care must be taken to exclude activities that although undoubtedly a part of the innovation process, rarely involve any R&D, e.g. patent filing and licensing, market research, manufacturing start-up, tooling up and redesign for the manufacturing process.
- It is also difficult to define precisely the cut-off point between experimental development and pre-production development, such as producing user demonstration models and testing, and production that is applicable to all industrial situations. If the primary objective is to make further technical improvements on the product or process, then the work falls within the definition of R&D. If, on the other hand, the product, process or approach is substantially set and the primary objective is to develop markets, to do pre-production planning or to get a production or control system working smoothly, the work is no longer R&D.

## PART TWO: IN-HOUSE R&D PERSONNEL

## الجزء الثاني: موظفو البحث والتطوير الداخلي

Report for all R&D personnel, both permanent and on contract (6 months or longer).

يجب الإبلاغ عن كل الموظفين العاملين في البحث والتطوير سواءً كانوا موظفين دائمين أم كانوا على عقود مؤقتة (٦ أشهر أو أكثر).

### Researchers

- Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the planning and management of the projects concerned.
- Managers and administrators engaged in the planning and management of the scientific and technical aspects of a researcher's work. Their rank is usually equal or superior to that of persons directly employed as researchers and they are often former or part-time researchers.
- Academic staff involved in research and also studying towards a Master's or Doctoral degree should be included as research staff (not students). **Higher Education Sector**
- All post-doctoral fellows in whichever capacity they are appointed by the institution. **Higher Education Sector**
- Doctoral students working on R&D. **Higher Education Sector**

### Exclude:

- Managers and directors concerned primarily with budgets and human resources rather than project management or content (include in "other personnel directly supporting R&D").
- Master's students. **Higher Education Sector**

### Technicians directly supporting R&D

Persons doing technical tasks in support of R&D, normally under the direction and supervision of a Researcher.

### Other personnel directly supporting R&D

- Other personnel include skilled and unskilled crafts persons, secretarial and clerical staff participating in R&D projects or directly associated with R&D Projects.
- Included are executives and directors concerned primarily with budgets and human resources in support of research rather than project management.

### Do not include the count of personnel indirectly supporting R&D.

Typical examples are transportation, storage, cleaning, repair, maintenance and security activities, as well as administration and clerical activities undertaken not exclusively for R&D (such as the activities of central finance and personnel departments).

Allowance for these should be made in other current R&D expenditure

### Headcount Of R&D Personnel

#### Headcount' (HC) :

HC data cover the total number of persons who are mainly or partially employed in R&D. This includes all staff employed whether permanent, contract, full-time or part-time.

### الباحثون

- هم مهنيون عاملون في تصميم وابتكار معارف ومنتجات ومنهجيات وأساليب جديدة وكذلك في إدارة المشروعات المعنية.
- الباحثون يشملون المدراء والمسؤولين الإداريين العاملين في تخطيط وإدارة الجوانب العلمية والتكنولوجية لعمل الباحثين. وعادة ما تكون رتبهم متساوية أو أعلى من الأشخاص العاملين مباشرةً كباحثين وغالباً ما يكونون باحثين سابقين أو باحثين بدوام جزئي.
- الموظفون الجامعيون الذين يشاركون في البحث ويجب إدراج الطالب في مستوى الماجستير أو الدكتوراه ضمن موظفي البحث (من غير الطلبة). **خاص بقطاع التعليم العالي**
- طلبة ما بعد الدكتوراه مهما كانت الصفة التي تجعل لهم من طرف المؤسسة. **خاص بقطاع التعليم العالي**
- طلبة الدكتوراه الذين يعملون في مجال البحث والتطوير. **خاص بقطاع التعليم العالي**

استثناء:

- المدراء والمسؤولين الإداريين الذين يتمتعون أساساً بالمسائل المالية وإدارة الموارد البشرية بدلاً من إدارة المشروع أو محتواه (الذين يتمتعون في "موظفي آخرين بدعم البحث والتطوير بشكل مباشر").
- طلبة مستوى الماجستير. **خاص بقطاع التعليم العالي**

### الفنيون الذين يساعدون مباشرةً في البحث والتطوير

هم أشخاص يشاركون في البحث والتطوير لتنفيذ مهام علمية وتقنية تتطلب تطبيق مفاهيم وأساليب تشغيلية، تكون عادةً تحت إشراف الباحثين.

### الموظفون الآخرون الذين يساعدون مباشرةً في البحث والتطوير

- يشملون الحرفيين المؤهلين وغير المؤهلين، وموظفي السكرتارية والأعمال الكتابية المشاركون في مشروعات البحث والتطوير أو المرتبطين ب المباشرة بها.
- يتم إدراج المدراء والمسؤولين الإداريين الذين يتمتعون أساساً بالمسائل المالية وإدارة الموارد البشرية بدلاً من إدارة المشروع.

### يجب عدم تضمين الموظفين المشاركون بشكل غير مباشر في دعم البحث والتطوير.

ومن أمثلة ذلك العاملون في مجال النقل والتغذية والتنظيف والإصلاح والصيانة وأنشطة الأمن، فضلاً عن أنشطة الإدارة والأعمال الكتابية الذين ينطون أنفسهم لتدخل في مجال البحث والتطوير (مثل الأنشطة المالية المركزية وموظفي الإدارات).

هذا النوع من البدلات ينبغي أن يُسجل ضمن النفقات الحالية الأخرى للبحث والتطوير.

### عدد موظفي البحث والتطوير

#### عدد الموظفين :

عدد الموظفين هو عبارة عن بيانات بشأن مجموع الأشخاص الموظفين بشكل رئيسي أو جزئي في البحث والتطوير. وهذا يتضمن كل الموظفين العاملين بصفة دائمة أو جزئية أو بعقد على حد سواء.

## 7. Headcount of R&D Personnel

### Calculating Headcount (HC) Data

HC data cover the total number of persons who are mainly or partially employed in R&D. This includes staff employed both full-time and part-time on R&D activities.

#### 7.1 Headcount of all R&D Personnel by Nationality, Gender and Highest Qualification

### ٧. عدد موظفي البحث والتطوير

#### احتساب بيانات عدد الموظفين

تحطى البيانات المتعلقة بعدد الموظفين عدد الأشخاص الذين يعملون بشكل رئيسي أو جزئي في مجال البحث والتطوير. وهي تشمل الأشخاص الذين يعملون بدوام كامل أو جزئي في مجال البحث والتطوير.

#### ١، عدد الموظفين في البحث والتطوير حسب الجنسية والنوع والمؤهل الأعلى

| Highest Qualification     | المجموع Total           |           |           | غير قطريين Non-Qataris |           | قطريون Qatars |           | المؤهل الأعلى              |
|---------------------------|-------------------------|-----------|-----------|------------------------|-----------|---------------|-----------|----------------------------|
|                           | المجموع<br>T            | إناث<br>F | ذكور<br>M | إناث<br>F              | ذكور<br>M | إناث<br>F     | ذكور<br>M |                            |
| RESEARCHERS               | Ph.D.                   |           |           |                        |           |               |           | دكتوراه                    |
|                           | M.A / M.Sc.             |           |           |                        |           |               |           | ماجستير                    |
|                           | Higher Diploma          |           |           |                        |           |               |           | دبلوم عالي                 |
|                           | University              |           |           |                        |           |               |           | بكالوريوس                  |
|                           | Pre-University. Diploma |           |           |                        |           |               |           | دبلوم أقل من الجامعية      |
|                           | Secondary               |           |           |                        |           |               |           | ثانوية                     |
|                           | Below Secondary         |           |           |                        |           |               |           | دون الثانوية               |
| Total Researchers         |                         |           |           |                        |           |               |           | مجموع الباحثين             |
| TECHNICIANS               | Ph.D.                   |           |           |                        |           |               |           | دكتوراه                    |
|                           | M.A / M.Sc.             |           |           |                        |           |               |           | ماجستير                    |
|                           | Higher Diploma          |           |           |                        |           |               |           | دبلوم عالي                 |
|                           | University              |           |           |                        |           |               |           | بكالوريوس                  |
|                           | Pre-University. Diploma |           |           |                        |           |               |           | دبلوم أقل من الجامعية      |
|                           | Secondary               |           |           |                        |           |               |           | ثانوية                     |
|                           | Below Secondary         |           |           |                        |           |               |           | دون الثانوية               |
| Total Technicians         |                         |           |           |                        |           |               |           | مجموع الفنيين              |
| OTHER SUPPORT STAFF       | Ph.D.                   |           |           |                        |           |               |           | دكتوراه                    |
|                           | M.A / M.Sc.             |           |           |                        |           |               |           | ماجستير                    |
|                           | Higher Diploma          |           |           |                        |           |               |           | دبلوم عالي                 |
|                           | University              |           |           |                        |           |               |           | بكالوريوس                  |
|                           | Pre-University. Diploma |           |           |                        |           |               |           | دبلوم أقل من الجامعية      |
|                           | Secondary               |           |           |                        |           |               |           | ثانوية                     |
|                           | Below Secondary         |           |           |                        |           |               |           | دون الثانوية               |
| Total Other Support Staff |                         |           |           |                        |           |               |           | مجموع موظفي الدعم الآخرون  |
| Total R&D Personnel       |                         |           |           |                        |           |               |           | مجموع موظفي البحث والتطوير |

7.2 Headcount of All R&D Personnel by Nationality, Gender and Fields of Science

٧.٢ عدد الموظفين في البحث والتطوير حسب الجنسية والنوع والمجال العلمي

| Highest Qualification                             | المجموع Total               |        |        | غير قطريين Non-Qataris |        | قطريون Qatari |        | المجال العلمي  |
|---|-----------------------------|--------|--------|------------------------|--------|---------------|--------|--|
|   | المجموع T                   | إناث F | ذكور M | إناث F                 | ذكور M | إناث F        | ذكور M |  |
| RESEARCHERS                                       | Natural sciences            |        |        |                        |        |               |        | العلوم الطبيعية  |
|   | Engineering and technology  |        |        |                        |        |               |        | الهندسة والتكنولوجيا   |
|   | Medical and health sciences |        |        |                        |        |               |        | العلوم الطبية والصحية  |
|   | Agricultural sciences       |        |        |                        |        |               |        | العلوم الزراعية  |
|   | Social sciences             |        |        |                        |        |               |        | العلوم الاجتماعية  |
|   | Humanities                  |        |        |                        |        |               |        | العلوم الإنسانية   |
|   | Not specified elsewhere     |        |        |                        |        |               |        | غير محدد في مكان آخر   |
| <b>Total Researchers</b><br>(same as 7.1)         |                             |        |        |                        |        |               |        | <b>مجموع الباحثين</b><br>(نفس ما جاء في الإجابة على السؤال ٧.١)            |
| TECHNICIANS                                       | Natural sciences            |        |        |                        |        |               |        | العلوم الطبيعية  |
|   | Engineering and technology  |        |        |                        |        |               |        | الهندسة والتكنولوجيا   |
|   | Medical and health sciences |        |        |                        |        |               |        | العلوم الطبية والصحية  |
|   | Agricultural sciences       |        |        |                        |        |               |        | العلوم الزراعية  |
|   | Social sciences             |        |        |                        |        |               |        | العلوم الاجتماعية  |
|   | Humanities                  |        |        |                        |        |               |        | العلوم الإنسانية   |
|   | Not specified elsewhere     |        |        |                        |        |               |        | غير محدد في مكان آخر   |
| <b>Total Technicians</b><br>(same as 7.1)         |                             |        |        |                        |        |               |        | <b>مجموع الفنيين</b><br>(نفس ما جاء في الإجابة على السؤال ٧.١)             |
| OTHER SUPPORT STAFF                               | Natural sciences            |        |        |                        |        |               |        | العلوم الطبيعية  |
|   | Engineering and technology  |        |        |                        |        |               |        | الهندسة والتكنولوجيا   |
|   | Medical and health sciences |        |        |                        |        |               |        | العلوم الطبية والصحية  |
|   | Agricultural sciences       |        |        |                        |        |               |        | العلوم الزراعية  |
|   | Social sciences             |        |        |                        |        |               |        | العلوم الاجتماعية  |
|   | Humanities                  |        |        |                        |        |               |        | العلوم الإنسانية   |
|   | Not specified elsewhere     |        |        |                        |        |               |        | غير محدد في مكان آخر   |
| <b>Total Other Support Staff</b><br>(same as 7.1) |                             |        |        |                        |        |               |        | <b>مجموع موظفي الدعم الآخرين</b><br>(نفس ما جاء في الإجابة على السؤال ٧.١) |
| <b>Total R&amp;D Personnel</b>                    |                             |        |        |                        |        |               |        | <b>مجموع موظفي البحث والتطوير</b>  |

#### 8. Research Full-Time Equivalents (FTEs) in R&D and Cost To Institutions.

Provide an estimate of person-years of effort on R&D (or Full-time equivalents), according to the categories below.

Using the male and female headcounts of all R&D personnel reported for in Question 7, provide the research full-time equivalents (time devoted to R&D). Then, calculate the total labour costs of R&D using the average annual full cost-to-company for full-time staff (including annual wages, salaries and all associated costs or fringe benefits, such as bonus payments, contributions to pension and medical aid funds, payroll tax, unemployment insurance fund and all other statutory payments) per category below.

#### Calculating Full-Time Equivalent (FTE) Persons

FTE data measure the volume of human resources in R&D. One FTE may be thought of as one person-year. That is 1 FTE is equal to 1 person working full-time on R&D for a period of 1 year or more persons working part-time or for a shorter period corresponding to one person-year.

For the purpose of this survey, an employee can work a maximum of 1 FTE in a year.

The following is a theoretical approach to calculating FTE:

**FTE: (Dedication to the employment: Full-time/Part-time) x (Portion of the year active on R&D) x (Time or portion spent on R&D)**

#### See the following examples:

- A full-time employee spending 100% of time on R&D during a year:  $(1 \times 1 \times 1) = 1 \text{ FTE}$
- A full-time employee spending 30% of time on R&D during a year:  $(1 \times 1 \times 0.3) = 0.3 \text{ FTE}$
- A full-time R&D worker who is spending 100% of time on R&D and is employed at an R&D institution for only six months:  $(1 \times 0.5 \times 1) = 0.5 \text{ FTE}$
- A full-time employee spending 40% of time on R&D during half of the year (person is only active for 6 months per year):  $(1 \times 0.5 \times 0.4) = 0.2 \text{ FTE}$
- A part-time employee (working 40% of a full time year) engaged only in R&D (spending 100% of time on R&D) during a year:  $(0.4 \times 1 \times 1) = 0.4 \text{ FTE}$
- A part-time employee (working 40% of a full-time year) spending 60% of time on R&D during half of the year (person is only active for 6 months per year):  $(0.4 \times 0.5 \times 0.6) = 0.12 \text{ FTE}$
- 20 full-time employees spending 40% of time on R&D during a year:  $20 \times (1 \times 1 \times 0.4) = 8 \text{ FTE}$

**NOTE: please calculate FTEs for all R&D personnel.**

#### ٨. المكافى بوقت كامل في البحث والتطوير وتكلفة البحث في المؤسسات

تقدير تدبير بحساب لجهود البحث والتطوير للشخص في السنة (أو ما يكافئ بوقت كامل) حسب الفئات أدناه.

باستخدام عدد الموظفين من الذكور والإناث في إجمالي موظفي البحث والتطوير في السؤال ٧، قم بتقدير المكافى بوقت كامل للبحث (الوقت المخصص للبحث والتطوير). ثم حساب التكاليف الإجمالية للشركة بالنسبة للموظفين بدوام كامل ( بما في ذلك الأجر السنوي والرواتب وجميع التكاليف المرتبطة بها أو المزايا الاجتماعية الإضافية مثل المكافآت، والمساهمات في المعاشات والمساعدات الطيبة والضرورية على الرواتب وصندوق التأمين ضد البطالة وجميع المدفوعات النظامية الأخرى) لكل فئة أدناه.

#### حساب المكافئين بوقت كامل

تقدير بيانات المكافئين بوقت كامل حجم الموارد البشرية في مجال البحث والتطوير. ١. مكافى بوقت كامل هو مساو لواحد شخص سنة. وهذا يعني أن ١ مكافى بوقت كامل يساوي ١ شخص يعمل بدوام كامل في البحث والتطوير لمدة ١ سنة أو عدة أشخاص يعملون بدوام جزئي أو لفترة أقصر تساوي مدة الشخص في السنة. فيما يتعلق بهذا المسح، يمكن لموظفي أن يعمل مكافى بوقت كامل واحد في السنة على أقصى تدبير.

فيما يلي مقاربة نظرية لاحتساب المكافى بوقت كامل:

**المكافى بوقت كامل: (النفر للعمل: دوام كامل/دوام جزئي) × (نسبة مدة النشاط في البحث والتطوير خلال السنة) × (الوقت أو الجزء المضهي على البحث والتطوير)**

#### أنظر الأمثلة التالية:

- موظف بوقت كامل يقضى ١٠٠ % من الوقت في البحث والتطوير خلال سنة:  $= (1 \times 1 \times 1) = 1 \text{ مكافى بوقت كامل}$
- موظف بوقت كامل يقضي ٣٠ % من الوقت في البحث والتطوير خلال سنة:  $= (0.3 \times 1 \times 1) = 0.3 \text{ مكافى بوقت كامل}$
- موظف الباحث والتطوير بوقت كامل ١٠٠ % من الوقت في البحث والتطوير ويعمل في مؤسسة البحث والتطوير مدة ٦ أشهر فقط:  $= (0.5 \times 0.5 \times 0.5) = 0.5 \text{ مكافى بوقت كامل}$
- موظف بوقت كامل يقضي ٤٠ % من الوقت في البحث والتطوير نصف سنة (شخص ينشط ٦ أشهر في السنة فقط):  $= (0.5 \times 0.5 \times 0.5) = 0.25 \text{ مكافى بوقت كامل}$
- موظف بوقت جزئي (يعلم ٤٠ % من السنة بوقت كامل) يعمل فقط في البحث والتطوير (يقضي ٤٠ % في البحث والتطوير) خلال السنة:  $= (0.4 \times 1 \times 1) = 0.4 \text{ مكافى بوقت كامل}$
- موظف بوقت جزئي (يعلم ٤٠ % من السنة بوقت كامل) يقضى ٦٠ % من الوقت في البحث والتطوير خلال نصف سنة (شخص ينشط ٦ أشهر في السنة فقط):  $= (0.4 \times 0.5 \times 0.6) = 0.12 \text{ مكافى بوقت كامل}$
- موظف بوقت جزئي (يعلم ٤٠ % من السنة بوقت كامل) يقضى ٦٠ % من الوقت في البحث والتطوير خلال نصف سنة (شخص ينشط ٦ أشهر في السنة فقط):  $= (0.4 \times 0.5 \times 0.6) = 0.12 \text{ مكافى بوقت كامل}$
- موظف بوقت جزئي (يعلم ٤٠ % من السنة بوقت كامل) يقضى ٤٠ % من الوقت في البحث والتطوير خلال السنة:  $= (0.4 \times 1 \times 0.4) = 0.16 \text{ مكافى بوقت كامل}$

**ملاحظة: يرجى احتساب المكافى بوقت كامل لجميع موظفي البحث والتطوير.**

8.1 FTE in R&D by Nationality, Gender And Highest Qualification

٨.١ المكافنون في البحث والتطوير بوقت كامل حسب الجنسية والنوع والمؤهل الأعلى

| Highest Qualification            |                            | المكافنون بوقت كامل<br>Full-Time Equivalent |                           |           |                   |           |                  | (٧,١)<br>Headcounts (From Q 7.1) |           |                   |           |  |                                       | المؤهل الأعلى          |
|----------------------------------|----------------------------|---|---------------------------|-----------|-------------------|-----------|------------------|----------------------------------|-----------|-------------------|-----------|--|---------------------------------------|------------------------|
|                                  |                            | المجموع<br>Total                            | غير قطريين<br>Non-Qataris |           | قطريون<br>Qataris |           | المجموع<br>Total | غير قطريين<br>Non-Qataris        |           | قطريون<br>Qataris |           |  |                                       |                        |
|                                  |                            |   | إناث<br>F                 | ذكور<br>M | إناث<br>F         | ذكور<br>M |                  | إناث<br>F                        | ذكور<br>M | إناث<br>F         | ذكور<br>M |  |                                       |                        |
| RESEARCHERS                      | Ph.D.                      |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دكتوراه                               | الباحثين<br>القدرات    |
|                                  | M.A / M.Sc.                |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ماجستير                               |                        |
|                                  | Higher Diploma             |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم عالي                            |                        |
|                                  | University                 |   |                           |           |                   |           |                  |                                  |           |                   |           |  | بكالوريوس                             |                        |
|                                  | Pre-University.<br>Diploma |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم أقل من<br>الجامعة               |                        |
|                                  | Secondary                  |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ثانوية                                |                        |
|                                  | Below Secondary            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دون الثانوية                          |                        |
| <b>Total Researchers</b>         |                            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | <b>مجموع الباحثين</b>                 |                        |
| TECHNICIANS                      | Ph.D.                      |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دكتوراه                               | الفنين<br>القدرات      |
|                                  | M.A / M.Sc.                |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ماجستير                               |                        |
|                                  | Higher Diploma             |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم عالي                            |                        |
|                                  | University                 |   |                           |           |                   |           |                  |                                  |           |                   |           |  | بكالوريوس                             |                        |
|                                  | Pre-University.<br>Diploma |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم أقل من<br>الجامعة               |                        |
|                                  | Secondary                  |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ثانوية                                |                        |
|                                  | Below Secondary            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دون الثانوية                          |                        |
| <b>Total Technicians</b>         |                            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | <b>مجموع الفنانين</b>                 |                        |
| Other Support Staff              | Ph.D.                      |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دكتوراه                               | موظفي الدعم<br>الآخرون |
|                                  | M.A / M.Sc.                |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ماجستير                               |                        |
|                                  | Higher Diploma             |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم عالي                            |                        |
|                                  | University                 |   |                           |           |                   |           |                  |                                  |           |                   |           |  | بكالوريوس                             |                        |
|                                  | Pre-University.<br>Diploma |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دبلوم أقل من<br>الجامعة               |                        |
|                                  | Secondary                  |   |                           |           |                   |           |                  |                                  |           |                   |           |  | ثانوية                                |                        |
|                                  | Below Secondary            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | دون الثانوية                          |                        |
| <b>Total Other Support Staff</b> |                            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | <b>مجموع موظفي الدعم الآخرون</b>      |                        |
| <b>Total R&amp;D Personnel</b>   |                            |   |                           |           |                   |           |                  |                                  |           |                   |           |  | <b>مجموع موظفي البحث<br/>والتطوير</b> |                        |

8.2 FTE in R&D by Nationality, Gender And Field Of Science

المكافنون في البحث والتطوير بوقت كامل حسب النوع والجنسية والمجال العلمي ٨,٢

| Field of science                                  | المجموع                     | المكافنون بوقت كامل  |        |           |        | عدد الموظفين (من المسؤل ٧,٢) |           |        |           | المجال العلمي  |  |
|---|-----------------------------|----------------------|--------|-----------|--------|------------------------------|-----------|--------|-----------|--|--|
|   |                             | Full-Time Equivalent |        |           |        | Headcounts (From Q 7.2)      |           |        |           |  |  |
|   |                             | غيرقطريين            | قطريون | غيرقطريين | قطريون | المجموع                      | غيرقطريين | قطريون | غيرقطريين |  |  |
| RESEARCHERS                                       | Total                       | إناث F               | ذكور M | إناث F    | ذكور M | Total                        | إناث F    | ذكور M | إناث F    | ذكور M   |  |
|   | Natural sciences            |                      |        |           |        |                              |           |        |           | العلوم الطبيعية  |  |
|   | Engineering and technology  |                      |        |           |        |                              |           |        |           | المهندسة والتكنولوجيا  |  |
|   | Medical and health sciences |                      |        |           |        |                              |           |        |           | العلوم الطبية والصحية  |  |
|   | Agricultural sciences       |                      |        |           |        |                              |           |        |           | العلوم الزراعية  |  |
|   | Social sciences             |                      |        |           |        |                              |           |        |           | العلوم الاجتماعية  |  |
|   | Humanities                  |                      |        |           |        |                              |           |        |           | العلوم الإنسانية   |  |
| Not specified elsewhere                           |                             |                      |        |           |        |                              |           |        |           | غير محدد في مكان آخر   |  |
| <b>Total Researchers</b><br>(same as 7.1)         |                             |                      |        |           |        |                              |           |        |           | <b>مجموع الباحثين</b><br>(نفس ما جاء في الإجابة على السؤال ٧,١)            |  |
| TECHNICIANS                                       | Natural sciences            |                      |        |           |        |                              |           |        |           | العلوم الطبيعية  |  |
|   | Engineering and technology  |                      |        |           |        |                              |           |        |           | المهندسة والتكنولوجيا  |  |
|   | Medical and health sciences |                      |        |           |        |                              |           |        |           | العلوم الطبية والصحية  |  |
|   | Agricultural sciences       |                      |        |           |        |                              |           |        |           | العلوم الزراعية  |  |
|   | Social sciences             |                      |        |           |        |                              |           |        |           | العلوم الاجتماعية  |  |
|   | Humanities                  |                      |        |           |        |                              |           |        |           | العلوم الإنسانية   |  |
|   | Not specified elsewhere     |                      |        |           |        |                              |           |        |           | غير محدد في مكان آخر   |  |
| <b>Total Technicians</b><br>(same as 7.1)         |                             |                      |        |           |        |                              |           |        |           | <b>مجموع الفنيين</b><br>(نفس ما جاء في الإجابة على السؤال ٧,١)             |  |
| Other Support Staff                               | Natural sciences            |                      |        |           |        |                              |           |        |           | العلوم الطبيعية  |  |
|   | Engineering and technology  |                      |        |           |        |                              |           |        |           | المهندسة والتكنولوجيا  |  |
|   | Medical and health sciences |                      |        |           |        |                              |           |        |           | العلوم الطبية والصحية  |  |
|   | Agricultural sciences       |                      |        |           |        |                              |           |        |           | العلوم الزراعية  |  |
|   | Social sciences             |                      |        |           |        |                              |           |        |           | العلوم الاجتماعية  |  |
|   | Humanities                  |                      |        |           |        |                              |           |        |           | العلوم الإنسانية   |  |
|   | Not specified elsewhere     |                      |        |           |        |                              |           |        |           | غير محدد في مكان آخر   |  |
| <b>Total Other Support Staff</b><br>(same as 7.1) |                             |                      |        |           |        |                              |           |        |           | <b>مجموع موظفي الدعم الآخرين</b><br>(نفس ما جاء في الإجابة على السؤال ٧,١) |  |
| <b>Total R&amp;D Personnel</b>                    |                             |                      |        |           |        |                              |           |        |           | <b>مجموع موظفي البحث والتطوير</b>  |  |

خاص بقطاع التعليم العالي

Higher Education Sector

8.3 Headcount in R&D and FTE of Postgraduate Students by nationality, gender and type of certificate

عدد الموظفين في البحث والتطوير والمكافن بوقت كامل لطلبة الدراسات العليا حسب الجنسية والنوع ونوع الشهادة ٣,٨

Using the headcounts of all R&D post-doctoral fellows and postgraduate students provide the Full Time Equivalents (FTE) on R&D.

باستخدام أعداد موظفي البحث والتطوير من زملاء ما بعد الدكتوراه وطلبة الدكتوراه ستحصل على المكافن بوقت كامل للبحث والتطوير.

| Type of Certificate   | المجموع | المكافنون بوقت كامل  |        |           |        | عدد الموظفين |           |        |           | نوع الشهادة              |  |
|-----------------------|---------|----------------------|--------|-----------|--------|--------------|-----------|--------|-----------|--------------------------|--|
|                       |         | Full-Time Equivalent |        |           |        | Headcounts   |           |        |           |                          |  |
|                       |         | غيرقطريين            | قطريون | غيرقطريين | قطريون | المجموع      | غيرقطريين | قطريون | غيرقطريين |                          |  |
| Total                 | Total   | إناث F               | ذكور M | إناث F    | ذكور M | Total        | إناث F    | ذكور M | إناث F    | ذكور M                   |  |
| Doctoral students     |         |                      |        |           |        |              |           |        |           | طلبة الدكتوراه           |  |
| Postdoctoral Fellows* |         |                      |        |           |        |              |           |        |           | زملاء ما بعد الدكتوراه * |  |
| <b>Total</b>          |         |                      |        |           |        |              |           |        |           | <b>المجموع</b>           |  |

\* Postdoctoral Fellows: Students who have completed their doctorate and are still completing their thesis at the college or university until this dissertation is completed and they are appointed to their positions.

\* زملاء ما بعد الدكتوراه: هم الطلبة الذين تخرجوا بدرجة الدكتوراه وما زالوا يكملون اطروحتهم العلمية في الكلية أو الجامعة إلى أن تكتمل هذه الاطروحة ويعينون في مناصبهم.

## الجزء الثالث: الإنفاق على البحث والتطوير الداخلي

### PART THREE: IN-HOUSE R&D EXPENDITURE

The Definition and Calculation of In-House R&D Expenditure

تعريف واحتساب تفقات البحث والتطوير الداخلي

#### Other Current Expenditure

Including – but not limited to:

- Direct project costs, project consumables and running costs linked to research, such as materials, fuels and other inputs, including telephone and printing.
- Subsistence and travel expenses.
- Repair and maintenance expenses.
- Payments to outside organizations for use of specialised testing facilities, analytical work, engineering or other specialised services in support of R&D projects carried out by this reporting unit.
- Commission/consultant expenses for research projects carried out by this reporting unit.
- The relevant % of indirect and institutional costs and utility costs, such as rent, space charge, leasing and hiring expenses, furniture, water, electricity and any other overhead costs.
- The relevant % of labour costs of persons providing indirect services such as the head office, human resources, finances, security and maintenance personnel as well as staff of central libraries and IT departments..
- Where current expenses such as direct project costs and consumables are used solely for R&D, allocate the full cost of the items.
- If these current expenses are used for more than one activity, include only an estimate of the portion used for R&D.
- Only where such an estimate of the portion used for R&D is not available, such as indirect and utility costs and labour costs of staff providing indirect services, it is advised that respondents apply the percentage time that researchers in the reporting unit spent on R&D to the total of these current expenditures.
- So if a faculty's income and expenditure statement shows that the current expenditure for indirect and utility costs and labour costs of staff providing indirect services for the year was say USD 1,700,000 and that researchers on average spent 22% of their time to R&D, then this component of R&D current expenditure may be estimated as  $0.22 \times \text{USD } 1,700,000 = \text{USD } 374,000$ .

Excluding:

- Contract R&D expenses where the research project is carried out elsewhere by others on behalf of this reporting unit.
- Payments for purchases of technical know-how (goodwill).
- Licence fees.
- Depreciation provisions

#### CAPITAL EXPENDITURE

The full cost of capital expenses must be reported in the year of purchase (do not depreciate).

Including – but not limited to:

- Expenditure on fixed assets used in the R&D projects of this reporting unit.
- Acquisition of software, including license fees, expected to be used for more than one year.
- Purchase of databases expected to be used for more than one year.
- Major repairs, improvements and modifications on land and buildings.
- Where a capital item is used solely for R&D, allocate the full cost of the item.
- If the capital item is used for more than one activity, include only an estimate of the portion used for R&D. For example, a new piece of equipment that will be used for R&D (included), testing (excluded) and quality control (excluded). For instance, if the intended use of this new equipment for R&D purposes is 40% of the total usage (i.e. the other 60% for other activities), only 40% of the total equipment cost should be considered as relevant R&D expenditure.
- Only where such an estimate of the portion used for R&D is not available, apply the percentage time that researchers in the reporting unit spent on R&D to the cost of the item.

Excluding:

- Depreciation provisions.
- Other repairs and maintenance expenses.
- Proceeds from the sale of R&D assets.

#### المصروفات الجارية الأخرى

تشمل لكهذا لا تقتصر على:

- المصروفات الماشدة للمشروع والمواد الاستهلاكية للمشروع وتكاليف التشغيل المرتبطة بالبحوث، مثل المواد والوقود وغيرها من المدخلات، بما في ذلك الباتف والطباعة.
- مصروفات السفر والإقامة.
- مصروفات الإصلاح والصيانة.
- التدفوعات إلى المنظمات الخارجية لاستخدام مراافق الاختبار المتخصصة أو العمل التحليلي أو الهندسية أو غيرها من الخدمات المتخصصة في دعم مشاريع البحث والتطوير التي تنجزها هذه الوحدة المصرحة.
- مصروفات العمالات/الاستشاريين للمشاريع البحثية التي تقوم بها هذه الوحدة المصرحة.
- النسبة المئوية المعنية من التكاليف غير المباشرة والمؤسسة وتكاليف المراقب، مثل الإيجار ورسوم فضاء العمل والتاجير ونفقات التوظيف والأثاث والماء والكهرباء والنفقات العامة الأخرى.
- النسبة المئوية المعنية من تكاليف اليد العاملة للأشخاص الذين يقدمون خدمات غير مباشرة مثل المكتب الرئيسي والموارد البشرية والمالية وموظفي الأمن والصيانة بالإضافة إلى موظفي المكاتب المركزية وأقسام تكنولوجيا المعلومات.
- عندما يتم استخدام النفقات الجارية مثل تكاليف المشروع والمواد الاستهلاكية المباشرة للبحث والتطوير فقط، يجب تحصيص التكلفة الكلمة ل بهذه المواد.
- إذا تم استخدام هذه النفقات الجارية لأكثر من نشاط واحد، يجب إدراج تقدير واحد فقط للحصة المستخدمة في البحث والتطوير.
- فقط عندما يكون تقييم الحصة المستخدمة في البحث والتطوير غير متوفر، مثل التكاليف غير المباشرة والمراقب العاملة والمالي والموظفي الذين يقدمون خدمات غير مباشرة، ينصح أن يطبق المسؤولون عن تعبئة الاستبيان النسبة المئوية للوقت الذي يخصصه الباحثون في الوحدة المصرحة للبحث والتطوير على مجموع هذه النفقات الجارية.
- إذا أظهر الإبلاغ عن مداخل ونفقات الكلية أن المصروفات الجارية للنفقات غير المباشرة والمراقب العاملة وتكلفة اليد العاملة للموظفين الذين يقدمون خدمات غير مباشرة لسنة كانت في حدود ١٧..... دولار أمريكي وإن الباحثين يقضون في المتوسط ٢٪ من قيمهم للبحث والتطوير، يمكن تقدير المصروفات الجارية للبحث والتطوير كالتالي:  $0.2 \times 17 \times 2\% = 34000$  دولار أمريكي.

باستثناء:

- نفقات البحث والتطوير المجزء بموجب عقد عندما يتم تنفيذ مشروع بعثي في مكان آخر من قبل آخرين باسم هذه الوحدة المصرحة.
- الدفعات لشراء الدراية التقنية (الشهرة التجارية).
- رسوم الترخيص.
- اعتمادات الأسلحة.

#### المصروفات الرأسمالية

يجب التصرّف بالتكلفة الإجمالية للمصروفات الرأسمالية في سنة الشراء (يجب عدم الاستهلاك).

تشمل لكهذا لا تقتصر على:

- الإنفاق المتعلق بالأصول الثابتة المستخدمة في مشاريع البحث والتطوير لهذه الوحدة المصرحة.
- اقتناء البرمجيات، بما في ذلك رسوم الترخيص، التي من المتوقع استخدامها لأكثر من سنة واحدة.
- شراء قواعد البيانات المتوقعة استخدامها لأكثر من سنة واحدة.
- الإصلاحات، التحسينات والتحفيزات الرئيسية على الأرضي والمائي.
- حيث يتم استخدام منضر من رأس المال للبحث والتطوير فقط، يجب تحصيص التكلفة الإجمالية لهذا المنضر.
- إذا تم استخدام منضر من رأس المال لأكثر من نشاط واحد، يجب فقط إدراج تقدير للحصة المستخدمة في البحث والتطوير على سبيل المثال، قطعة جديدة من المعدات سيتم استخدامها للبحث والتطوير (مشمولة)، لاختبارات (مستبعدة)، ومراقبة الجودة (مستبعدة). مثلاً، إذا كان الاستخدام المتبقية ستخذلها لأنشطة أخرى، ينبغي اعتبار ٤٪ فقط من إجمالي تكلفة المعدات كنفقات ذات صلة بالبحث والتطوير.
- عندما يكون تقدير الحصة المستخدمة للبحث والتطوير غير متوفر، يجب تطبيق النسبة المئوية للوقت الذي يخصصه بباحث الوحدة المصرحة للبحث والتطوير على تكلفة المنضر.

باستثناء:

- اعتمادات الأسلحة.
- مصاريف الإصلاح والصيانة الأخرى.
- عائدات بيع أصول البحث والتطوير.

## 9. In-House R&D Expenditure

### 9.1 Labour Costs of R&D

| Personnel categories      | بالريال القطري Qatari Riyal | تكلفة اليد العاملة المختسدة للبحث والتطوير Calculated labour cost of R&D (A x B) | متوسط تكلفة اليد العاملة لكل شخص Average annual labour cost per person (B) | المكافدون بوقت كامل (من السؤال ٨,١) Full-Time Equivalent (FTE) (From Q 8.1) (A) | فئات الموظفين             |
|---------------------------|-----------------------------|--|--|---|---------------------------|
| Total researchers         |                             |  |  |   | مجموع الباحثين            |
| Total technicians         |                             |  |  |   | مجموع الفنيين             |
| Total other support staff |                             |  |  |   | مجموع موظفي الدعم الآخرين |
| Total Doctoral students*  |                             |  |  |   | مجموع طلبة الدكتوراه*     |
| <b>Total Labour Cost</b>  |                             |  |  |   | مجموع تكلفة اليد العاملة  |

\*Higher Education Sector

٩. الإنفاق على البحث والتطوير الداخلي

٩.١ تكلفةقوى العاملة في البحث والتطوير

### 9.2 Other Current Expenditure On R&D

(See the definition of current expenditure and how to calculate current expenditure devoted to R&D on the previous page)

(أنظر تعريف النفقات الجارية وكيفية احتساب النفقات الجارية المخصصة للبحث والتطوير في الصفحة السابقة)

بالريال القطري Qatari Riyal

| Other current expenditure  | نفقات الجارة الأخرى   |
|--|---|
| ٩.٣ النفقات الرأسمالية على البحث والتطوير  |   |
| (See the definition of capital expenditure and how to calculate capital expenditure on R&D on the previous page) | (أنظر تعريف النفقات الرأسمالية وكيفية احتساب النفقات الرأسمالية المخصصة للبحث والتطوير في الصفحة السابقة) |
| ٩.٣ Capital Expenditure On R&D   | ٩.٣   |
| ٩.٤ Total R&D Expenditure (9.1 + 9.2 + 9.3)  | ٩.٤ مجموع نفقات البحث والتطوير (٩.٣ + ٩.٢ + ٩.١)  |

## 10. Sources Of Funds For In-House R&D

Provide a breakdown of total R&D expenditure by the sources of funds.

١٠. مصادر التمويل للبحث والتطوير الداخلي

اعطِ توزيع إجمالي إنفاق البحث والتطوير حسب مصادر التمويل

| ١٠.١ المؤسسات  | ١٠.١.١ التمويل الخاص                              |
|--|---|
| ١٠.١.١ Own funds   |   |
| ١٠.٢ الحكومة (يتضمن الوزارات والإدارات والمعاهد المقدمة للمنح)   | ١٠.٢.١ ذلك من الطلاب                              |
| ١٠.٢.١ Grants, especially general purpose including studentships |   |
| ١٠.٢.٢ Contracts to perform directed R&D                         | ١٠.٢.٢ عقود ل القيام بالبحث والتطوير المباشر      |
| ١٠.٣ Local Businesses  | ١٠.٣.١ عقود ل القيام بالبحث والتطوير              |
| ١٠.٣.١ Contracts to perform R&D                                  |   |
| ١٠.٤ المصادر الوطنية الأخرى                                      |   |
| ١٠.٤.١ Not for Profit Organizations (including Foundations)      | ١٠.٤.١ المنظمات غير الربحية (بما في ذلك المؤسسات) |
| ١٠.٤.٢ Individual Donations                                      | ١٠.٤.٢ التبرعات الفردية                           |
| ١٠.٤.٣ Other Higher Education institutions                       | ١٠.٤.٣ مؤسسات التعليم العالي الأخرى               |
| ١٠.٥ المصادر الأجنبية  |   |
| ١٠.٥.١ Parent Institution  | ١٠.٥.١ المؤسسة الأم                               |
| ١٠.٥.٢ Philanthropic organizations and Foundations               | ١٠.٥.٢ المؤسسات والمنظمات الخيرية                 |
| ١٠.٥.٣ All other foreign sources                                 | ١٠.٥.٣ جميع المصادر الأجنبية                      |
| ١٠.٦ إجمالي نفقات البحث والتطوير                                 |   |
| ١٠.٦ Total R&D Expenditure                                       |   |

## الجزء الرابع: فئات نفقات البحث والتطوير الداخلي

### PART FOUR: CATEGORIES OF IN-HOUSE R&D EXPENDITURE

#### 11. In-House R&D Expenditure By Type Of R&D

##### 11.1 Basic research

|   |                                  |   |
|---|----------------------------------|---|
| <ul style="list-style-type: none"> <li>Work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts without a specific application in view</li> <li>Analyses of properties, structures and relationships with a view to formulating and testing hypotheses, theories or laws.</li> <li>The results of basic research are usually published in peer-reviewed scientific journals.</li> </ul> | (النسبة المئوية)<br>(Percentage) | <ul style="list-style-type: none"> <li>عمل مهتم أساساً لاكتساب معرفة جديدة عن الأساس الكامنة وراء الظواهر والحقائق المشاهدة، دون أي تطبيق أو استخدام معين في البال.</li> <li>تحليل الخصائص والهيكل وال العلاقات بهدف صياغة فرضيات أو نظريات أو قوانين وأختبارها.</li> <li>عادةً ما يتم نشر نتائج البحوث الأساسية في مجلات علمية.</li> </ul> |
|   |                                  |   |

##### 11.2 Applied research

|   |                                  |   |
|---|----------------------------------|---|
| <ul style="list-style-type: none"> <li>Original investigation to acquire new knowledge with a specific application in view.</li> <li>Activities that determine the possible uses for the findings of basic research.</li> <li>The results of applied research are intended primarily to be valid for a single or limited number of products, operations, methods or systems.</li> <li>Applied research develops ideas into operational form.</li> <li>Information or knowledge derived from applied research may be published in peer-reviewed journals or subjected to other forms of intellectual property protection.</li> </ul> | (النسبة المئوية)<br>(Percentage) | <ul style="list-style-type: none"> <li>يتمثل البحث التطبيقي في عمل متذكر بهدف لاكتساب معرفة جديدة موجهة إلى تطبيق محدد.</li> <li>أنشطة تحدّد الاستعمالات الممكنة لنتائج البحوث الأساسية.</li> <li>يهدف نتائج البحث التطبيقي في المقام الأول لتكون صالحة لمنتج أو عملية أو أسلوب أو نظام واحد أو عدد محدود منها.</li> <li>يحوّل البحث التطبيقي الأفكار إلى حقيقة ملموسة.</li> <li>يمكن نشر المعلومات أو المعرف المستمدّة من البحث التطبيقي في المجالات العلمية أو أن تخضع لأشكال أخرى من حماية الملكية الفكرية.</li> </ul> |
|   |                                  |   |

##### 11.3 Experimental development

|   |                                  |  |
|---|----------------------------------|--|
| <ul style="list-style-type: none"> <li>Systematic work using existing knowledge for creating new or improved materials, products, processes or services, or improving substantially those already produced or installed.</li> </ul> | (النسبة المئوية)<br>(Percentage) | <ul style="list-style-type: none"> <li>العمل المبني على المعرفة الحالية بهدف إنتاج مواد أو منتجات أو أجهزة جديدة أو إنشاء أساليب وأنظمة وخدمات جديدة أو لتحسينها بشكل كبير.</li> </ul> |
|   |                                  |  |

Total (11.1+11.2+11.3)

1

0

0

المجموع (11.3+11.2+11.1)

#### 12. Detailed Fields of Science (FoS)

Classify R&D according to two-digit field of science (FoS) with associated percentage expenditure (see Appendix A)

- The FoS codes are based on recognised academic disciplines and emerging areas of study.

تصنيف أنشطة البحث والتطوير حسب المجال العلمي برميّن مع النسبة المئوية للنفقات (انظر الملحق أ)

- تستند رموز المجالات العلمية على التخصصات الأكademie المعترف بها ومجالات الدراسة الجديدة.

| رموز المجالات العلمية<br>FoS codes | النسبة المئوية<br>Percentage | رموز المجالات العلمية<br>FoS codes | النسبة المئوية<br>Percentage |
|------------------------------------|------------------------------|------------------------------------|------------------------------|
| FoS                                |                              | FoS                                |                              |
| المجموع                            |                              | 1 0 0                              |                              |

#### 13. Socio-Economic Objectives (SEO)

Classify R&D according to socio-economic objective (SEO) with associated percentage expenditure (see Appendix B)

- The SEO classification provides an indication of the main beneficiary of your R&D activities.

تصنيف البحث والتطوير حسب المهد الاجتماعي والاقتصادي مع النسبة المئوية للنفقات (انظر الملحق ب)

- يُبيّن تصنيف المهد الاجتماعي والاقتصادي المستفيد الرئيسي من أنشطة البحث والتطوير الخاصة بك.

| رموز<br>الأهداف الاجتماعية والاقتصادية<br>SEO codes | النسبة المئوية<br>Percentage | رموز<br>الأهداف الاجتماعية والاقتصادية<br>SEO codes | النسبة المئوية<br>Percentage |
|---|------------------------------|---|------------------------------|
| SEO   |                              | SEO   |                              |
| المجموع   |                              | 1 0 0   |                              |

### خاص بقطاع الأعمال

#### ١٤. التوزيع الصناعي المفصل

تصنيف التوجه الصناعي الفعلي للبحث والتطوير المنجز من طرف مؤسسات الأعمال، وفقاً للتصنيف الصناعي الوطني أو التصنيف الصناعي الدولي الموحد مع النسبة المئوية للنفقات (أنظر الملحق ج)

- التصنيف الصناعي الدولي الموحد بين التصنيف الذي يناسب أكثر البحث والتطوير الذي تتجهه الشركة حسب الاستعمال المقصود للمنتج.

| Business Sector   |                              |                                    |                              |       |
|---|------------------------------|------------------------------------|------------------------------|-------|
| 14. Detailed Industrial Breakdown   |                              |                                    |                              |       |
| <b>Classify the actual industrial orientation of the R&amp;D carried out by the business, according to the National Industrial Classification or ISIC with associated percentage expenditure (see Appendix C)</b> |                              |                                    |                              |       |
| <ul style="list-style-type: none"> <li>• ISICs indicate the classification that best describes company R&amp;D according to the intended use of the product.</li> </ul>   |                              |                                    |                              |       |
| رموز التوزيع الصناعي<br>ISIC codes  | النسبة المئوية<br>Percentage | رموز التوزيع الصناعي<br>ISIC codes | النسبة المئوية<br>Percentage |       |
| ISIC  |                              | ISIC                               |                              |       |
| Total   |                              |                                    |                              | 1 0 0 |

### الجزء الخامس: البحث والتطوير الخارجي

#### PART FIVE : EXTRAMURAL R&D

##### Extramural R&D refers to:

يشير البحث والتطوير الخارجي إلى:

- Extramural expenditures are the sums a reporting unit paid or committed to pay to another organization for the performance of R&D during a specific period.
- This includes acquisition of R&D performed by and/or grants given to other organizations for performing R&D (FM § 408).

##### 15. Detailed Fields of Science (FoS)

##### المجالات العلمية المفصلة

. ١٥

تصنيف أنشطة البحث والتطوير حسب المجال العلمي برقمين مع النسبة المئوية للنفقات (أنظر الملحق أ)

- تستند رموز المجالات العلمية على التخصصات الأكademie المعرف بها ومجالات الدراسة الجديدة.

- الأبحاث التي نفذت خارج الجهة (داخل الدولة محلياً) حسب مجال البحث والنسبة المئوية والقيمة التقديرية للتكلفة واسم الجهة المنفذة . ١٥,١

| رموز المجالات العلمية<br>FoS codes | النسبة المئوية<br>Percentage | القيمة التقديرية (ر.ق)<br>Approximate value (Q.R) | اسم الجهة التي أجرت البحث والتطوير<br>The organization(s) that conducted the extramural R&D |
|------------------------------------|------------------------------|---|---|
| FoS                                |                              |   |   |
| Total                              | 1 0 0                        |   | المجموع   |

- الأبحاث التي نفذت خارج الجهة (خارج الدولة) حسب مجال البحث والنسبة المئوية والقيمة التقديرية للتكلفة واسم الجهة المنفذة . ١٥,٢

| رموز المجالات العلمية<br>FoS codes | النسبة المئوية<br>Percentage | القيمة التقديرية (ر.ق)<br>Approximate value (Q.R) | اسم الجهة التي أجرت البحث والتطوير<br>The organization(s) that conducted the extramural R&D |
|------------------------------------|------------------------------|---|---|
| FoS                                |                              |   |   |
| Total                              | 1 0 0                        |   | المجموع   |

## الجزء السادس: مخرجات النشر من الإنفاق على البحث والتطوير الداخلي

### PART SIX : PUBLICATION OUTPUTS OF IN-HOUSE R&D EXPENDITURE

#### 16. Publication Outputs

- Indicate the number of publications by publication type that Researchers at your organization authored during the Survey period.
- Only count publications that include at least one author that lists the address of the organization e.g. University – Qatar.

| المقالات المؤلفة<br>(Web of Science; Scopus)  | النوع   | القيمة |
|---|---|--------|
| 16.1 Peer reviewed articles<br>(Web of Science; Scopus)   |   | ١٦,١   |
| 16.2 Books  | الكتب   | ١٦,٢   |
| 16.3 Client reports   | تقارير العملاء  | ١٦,٣   |
| 16.4 Policy briefs; other   | ملخصات السياسات وغيرها  | ١٦,٤   |
| 16.5 Number of local research<br>(Research conducted and published locally)   | عدد الأبحاث المحلية<br>(أبحاث تم إنجازها محلياً وتم النشر محلياً)                           | ١٦,٥   |
| 16.6 Number of international research<br>(Research conducted and published)   | عدد الأبحاث الدولية<br>(هي أبحاث أُنجزت ونشرت دولياً في وسائل نشر الأبحاث العلمية المختلفة) | ١٦,٦   |
| 16.7 Number of papers published<br>(Officially printed and published)   | عدد الأبحاث المنشورة<br>(المطبوعة ورقياً والمنشورة رسمياً)                                  | ١٦,٧   |
| 16.8 Number of scientific journals<br>(Official bulletins, magazines or publications)   | عدد الدوريات العلمية<br>(عبارة عن نشرة أو مجلة أو مطبوعة رسمية)                             | ١٦,٨   |
| 16.9 Number of local research projects<br>(Local funding and ownership)   | عدد المشروعات البحثية المحلية<br>(التمويل والملكية محلياً)                                  | ١٦,٩   |
| 16.10 Number of international research projects<br>(Joint funding and ownership with an international body, organization or agency) | عدد المشروعات البحثية الدولية<br>(التمويل والملكية مشتركة مع جهة أو منظمة أو هيئة دولية)    | ١٦,١٠  |

#### 17. Studies and Consultations:

These are considered as part of R&D and its activities. The number of studies and consultations, staff, and expenditures are included in this report

عملية جمع ومعالجة وتحليل البيانات الازمة لاتخاذ القرارات ورسم السياسات ووضع الخطط، وغالباً ما تكون جزء لا يتجزأ من عمل المؤسسة، وقد صنفت الدراسات والاستشارات كجزء من عملية البحث والتطوير

#### 17. الدراسات والاستشارات:

| النوع                                    | القيمة |
|--|--------|
| 17.1 Number of Studies and Consultations | ١٧,١   |

شكراً على وقتكم وجهدكم

THANK YOU FOR YOUR TIME AND EFFORT

## APPENDIXES

## الملاحق

### Appendix A: Two Digit Field of Science Classification

### الملحق أ : تصنيف مجالات العلوم والتكنولوجيا الثاني

#### 1. Natural sciences

##### 1.1 Mathematics

- Pure mathematics; Applied mathematics; Statistics and probability (Includes research on statistical methodologies, but excludes research on applied statistics which should be classified under the relevant field of application (e.g. Economics, Sociology, etc.)

##### 1.2 Computer and information sciences

- Computer sciences, information science and bioinformatics (hardware development to 2.2, social aspect to 5.8);

##### 1.3 Physical sciences

- Atomic, molecular and chemical physics (physics of atoms and molecules including collisions, interaction with radiation; magnetic resonances; Moessbauer effect); Condensed matter physics (including formerly solid state physics, superconductivity); Particles and fields physics; Nuclear physics; Fluids and plasma physics (including surface physics); Optics (including laser optics and quantum optics); Acoustics; Astronomy (including astrophysics, space science);

##### 1.4 Chemical sciences

- Organic chemistry; Inorganic and nuclear chemistry; Physical chemistry, Polymer science, Electrochemistry (dry cells, batteries, fuel cells, corrosion metals, electrolysis); Colloid chemistry; Analytical chemistry;

##### 1.5 Earth and related Environmental sciences

- Geosciences, multidisciplinary; Mineralogy; Palaeontology; Geochemistry and geophysics; Physical geography; Geology; Volcanology; Environmental sciences (social aspects to 5.7);
- Meteorology and atmospheric sciences; climatic research;
- Oceanography, Hydrology, Water resources;

##### 1.6 Biological sciences (Medical to be 3, and Agricultural to be 4)

- Cell biology, Microbiology; Virology; Biochemistry and molecular biology; Biochemical research methods; Mycology; Biophysics;
- Genetics and heredity (medical genetics to be 3); reproductive biology (medical aspects to be 3); developmental biology;
- Plant sciences, botany;
- Zoology, Ornithology, Entomology, Behavioural sciences biology;
- Marine biology, freshwater biology, limnology; Ecology; Biodiversity conservation;
- Biology (theoretical, mathematical, thermal, cryobiology, biological rhythm), Evolutionary biology; other biological topics;

##### 1.7 Other natural sciences

#### 2. Engineering and technology

##### 2.1 Civil engineering

- Civil engineering; Architecture engineering; Construction engineering, Municipal and structural engineering; Transport engineering;

##### 2.2 Electrical engineering, Electronic engineering, Information engineering

- Electrical and electronic engineering; Robotics and automatic control; Automation and control systems; Communication engineering and systems; telecommunications; Computer hardware and architecture;

##### 2.3 Mechanical engineering

- Mechanical engineering; Applied mechanics; Thermodynamics;
- Aerospace engineering;
- Nuclear related engineering; (nuclear physics to be 1.3);
- Audio engineering, reliability analysis;

##### 2.4 Chemical engineering

- Chemical engineering (plants, products); Chemical process engineering;

##### 2.5 Materials engineering

- Materials engineering; Ceramics; Coating and films; Composites (including laminates, reinforced plastics, cermets, combined natural and synthetic fibre fabrics; filled composites); Paper and wood; textiles; including synthetic dyes, colours, fibres; (nanoscale materials to be 2.10; biomaterials to be 2.9);

#### 1. العلوم الطبيعية

##### 1.1 رياضيات

- رياضيات أساسية-رياضيات تطبيقية- الإحصاء والاحتمالات (يشمل البحث على المجاليات الإحصائية، ويستثنى البحث في الإحصاء التطبيقي الذي ينبغي أن يصنف ضمن الحقوق ذات الصلة بالتطبيق (على سبيل المثال الاقتصاد، علم الاجتماع، الخ)).

##### 1.2 حاسب آلي ومعلومات

- علم الحاسوب - معلوماتية - معلوماتية حيوية (تطوير أجهزة الحاسوب تحت النواحي الاجتماعية تحت 5.8).

##### 1.3 علوم فيزيائية

- الفيزياء النووية والجزئية والكميّانية (الفيزياء النووية والجزئيات بما فيها التفاعل التصادمي والتفاعل مع الإشعاع والرين المغناطيسي وتأثير مويسارو)-فيزياء المادة المكثفة (مختضناً فيزياء الجوامد والمواد فائقة التوصيل).-فيزياء الجسيمات والمجالات-فيزياء نووية-فيزياء السوائل والبلازما (مختضناً فيزياء السطوح)-بصريات (مختضناً بصريات الليزر وبصريات الكم)-السمعيّات - علم الفلك (مختضناً فيزياء الفلكية وعلوم الفضاء).

##### 1.4 علوم كيميائية

- كيماء عضوية-كيماء غير عضوية وكيماء نووية-كيماء فيزيائية-كيماء للدان (الولني)-كيماء كبريتانية (الغالباً الجافة-المطارات-مخاليا الوقود-تآكل المعادن-التحليل الكهربائي)-كيماء العروبات -كيماء تحويلية.

##### 1.5 علوم الأرض والبيئة المرتبطة بها

- علوم جيولوجيا - علوم جيولوجية متعددة التخصصات - جيولوجيا المعادن - العقارات الأثرية- كيماء جيولوجية وفيزياء جيولوجية - جغرافيا فيزيائية - جيولوجيا - علم البراكين - علوم بيئية (الجانب الاجتماعي).
- علوم الأرصاد الجوية والظواهر الجوية والبحوث المناخية.
- علوم البخار - علوم المياه (هيدرولوجيا) - مصادر المياه.

##### 1.6 العلوم الحياتية (الطبية تحت 3 والزراعية تحت 4)

- بيولوجيا الخلية - الكائنات الدقيقة - الفيروسات - كيماء حيوية وبيولوجيا جزيئية - طرق البحوث الكيماء الحيوية - علم الفطريات- الفيزياء الحيوية.
- علم الوراثة (الجينات الطبية تحت 3) - بиولوجيا التناسل (الطبية تحت 3) - بيولوجيا طورجوية.

##### 1.7 علوم طبيعية أخرى

- علوم النبات، الحياة النباتية.
- علم الحيوان - علم الطيور - علم الحشرات - علم بиولوجيا السلوكيات.
- علم الأحياء البحرية، علم أحياي المياه العذبة، علم المسطحات المائية الداخلية، علم البيئة، حفظ التنوع الإحيائي.
- بيولوجيا (النظيرية- رياضيات حرارية- بيولوجيا الصقيع- التواتر البيولوجي)، علم الأحياء التطوري - مجالات بيولوجيا أخرى.

#### 2. هندسة وتقنيات

##### 2.1 هندسة مدنية

- هندسة مدنية - هندسة معمارية- هندسة إنشائية- هندسة بلدية وهيكيلية- هندسة النقل.

##### 2.2 هندسة كهربائية والكترونية وهندسة معلومات

- هندسة كهربائية والكترونية- إنسان آلي وتحكم آلي- الاتصالات ونظم التحكم- هندسة ونظم الاتصالات- اتصالات عن بعد- تصميم وهندسة معدات الحاسوب.

##### 2.3 هندسة ميكانيكية:

- هندسة ميكانيكية- ميكانيكا طبقية- ديناميكية حرارة
- هندسة فضائية
- هندسة الطاقة الذرية (فيزياء ذرية تحت 3-1).
- هندسة السمعيات - تحليل الدقة.

##### 2.4 هندسة كيميائية:

- هندسة كيميائية (منشآت ومنتجات) هندسة خطوط الانتاج

##### 2.5 هندسة المواد

- هندسة المواد- السيراميك- الخلاط والأشيبية- المواد المركبة (مختضنة الصفائح والبلاستيك المقوى والأسمنت والخيوط المخلوطة من طبيعية ومصنعة) - الخشب والورق- النسيج (مختضنة الأصباغ الصناعية والألوان والخيوط)- (المواد النانوية الجرم تحت 2.10) والمواد البيولوجية تحت 2.9).

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|--|---|
| <p><b>2.6 Medical engineering</b></p> <ul style="list-style-type: none"> <li>Medical engineering; Medical laboratory technology (including laboratory samples analysis; diagnostic technologies); (Biomaterials to be 2.9 [physical characteristics of living material as related to medical implants, devices, sensors]);</li> </ul>  | <p><b>٢,٦ هندسة طبية</b></p> <ul style="list-style-type: none"> <li>هندسة طبية - تكنولوجيا المختبرات الطبية (مختبرات معمل تحليل العينات المختبرية - تكنولوجيا التشخيص) (مواد بيولوجية تحت ٢,٩ وتنقسم إلى المفہومية للمادة الحية المرتبط بعمليات الاسترداد الطبي، المعدات، أدوات الاستشعار).</li> </ul>  |
| <p><b>2.7 Environmental engineering</b></p> <ul style="list-style-type: none"> <li>Environmental and geological engineering, geotechnics; Petroleum engineering, (fuel, oils), Energy and fuels; Remote sensing; Mining and mineral processing; Marine engineering, sea vessels; Ocean engineering;</li> </ul>   | <p><b>٢,٧ هندسة بيئية:</b></p> <ul style="list-style-type: none"> <li>هندسة بيئية بيولوجية - تكنولوجيات جيولوجية - هندسة البترول والطاقة والوقود. الاستشعار عن بعد- المناجم واستخلاص المعادن. هندسة بحرية- السفن- هندسة المحيطات.</li> </ul>  |
| <p><b>2.8 Environmental biotechnology</b></p> <ul style="list-style-type: none"> <li>Environmental biotechnology; Bioremediation, diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management; environmental biotechnology related ethics;</li> </ul>  | <p><b>٢,٨ التكنولوجيا الحيوية البيئية:</b></p> <ul style="list-style-type: none"> <li>التكنولوجيا الحيوية البيئية - العلاج البيولوجي- التكنولوجيا الحيوية التشخيصية في الادارة البيئية (شرايين الحمض النووي (DNA) واجهزه الاستشعار البيولوجي)</li> <li>- اخلاقيات التكنولوجيا الحيوية البيئية.</li> </ul>   |
| <p><b>2.9 Industrial biotechnology</b></p> <ul style="list-style-type: none"> <li>Industrial biotechnology; Bioprocessing technologies (industrial processes relying on biological agents to drive the process) biocatalysis, fermentation; bioproducts (products that are manufactured using biological material as feedstock) biomaterials, bioplastics, biofuels, bioderived bulk and fine chemicals, bio-derived novel materials;</li> </ul>   | <p><b>٢,٩ التكنولوجيا الحيوية الصناعية:</b></p> <ul style="list-style-type: none"> <li>التكنولوجيا الحيوية الصناعية - تكنولوجيا المعالجة الحيوية (المعالجات الصناعية القائمة على العناصر الحيوية لقيادة العملية) - المحفزات البيولوجية- التخمير- منتجات ثانوية (منتجات مصنعة باستخدام مواد بيولوجية - مواد بيولوجية - لدائن (باستيك) بيولوجية - وقود بيولوجي- كيميات دقيقة مشتقة بيولوجياً- مواد مستحدثة بيولوجياً).</li> </ul>   |
| <p><b>2.10 Nano-technology</b></p> <ul style="list-style-type: none"> <li>Nano-materials [production and properties];</li> <li>Nano-processes [applications on nano-scale]; (biomaterials to be 2.9);</li> </ul>   | <p><b>٢,١٠ النانو-تكنولوجيا (التكنولوجيات متناهية الصغر)</b></p> <ul style="list-style-type: none"> <li>المواد متناهية الصغر (إنتاج و خواص).</li> <li>عملية صناعة المواد متناهية الصغر (التطبيق على نطاق متناهي الصغر) (المواد البيولوجية تحت ٢,٩).</li> </ul>  |
| <p><b>2.11 Other engineering and technologies</b></p> <ul style="list-style-type: none"> <li>Food and beverages;</li> <li>Other engineering and technologies;</li> </ul>   | <p><b>٢,١١ هندسة وتكنولوجيا أخرى</b></p> <ul style="list-style-type: none"> <li>الغذاء والمشربات.</li> <li>هندسة وتكنولوجيا أخرى</li> </ul>   |
| <b>٣. العلوم الطبية والصحية</b>  |   |
| <p><b>3.1 Basic medicine</b></p> <ul style="list-style-type: none"> <li>Anatomy and morphology (plant science to be 1.6); Human genetics; Immunology; Neurosciences (including psychophysiology); Pharmacology and pharmacy; Medicinal chemistry; Toxicology; Physiology (including cytology); Pathology;</li> </ul>   | <p><b>٢,١ طب أساسي</b></p> <ul style="list-style-type: none"> <li>تشريح ومورفولوجي (علم النبات ١,٦)- وراثة بشرية- المناعة- الجهاز العصبي (متضمن البيفيزيولوجيا النفسية- الصيدلة والعقاقير- كيمياء الدواء- السموم- علم وظائف الأعضاء (فيزيولوجي) (متضمن علم الخلية)- علم الأمراض).</li> </ul>  |
| <p><b>3.2 Clinical medicine</b></p> <ul style="list-style-type: none"> <li>Andrology; Obstetrics and gynaecology; Paediatrics; Cardiac and Cardiovascular systems; Peripheral vascular disease; Hematology; Respiratory systems; Critical care medicine and Emergency medicine; Anaesthesiology; Orthopaedics; Surgery; Radiology; nuclear medicine and medical imaging; Transplantation; Dentistry; oral surgery and medicine; Dermatology and venereal diseases; Allergy; Rheumatology; Endocrinology and metabolism (including diabetes, hormones); Gastroenterology and hepatology; Urology and nephrology; Oncology; Ophthalmology; Otorhinolaryngology; Psychiatry; Clinical neurology; Geriatrics and gerontology; General and internal medicine; other clinical medicine subjects; Integrative and complementary medicine (alternative practice systems);</li> </ul> | <p><b>٢,٢ طب تشخيصي</b></p> <ul style="list-style-type: none"> <li>طب الذكور- النساء والولادة- طب الأطفال- القلب والأوعية الدموية- أمراض الدم- الجهاز التنفسى- الرعاية الطبية الجرحة والطوارئ- التخدير- العظام- الجراحة- الشعاع والطب النووي- الاسترداد- طب الإنسان- جراحة وطب الفم- أمراض جلدية وتناسلية- الحساسية- أمراض الروماتزم- الغدد الصماء (يتضمن أمراض السكري والبرمومات)- أمراض الجهاز البصري والكبد- أمراض الكلى والغدد والمسالك البولية- علم الأورام- أمراض العيون- آذن وأنف وحنجرة- طب النفس- أمراض الجهاز العصبي- أمراض الشيخوخة- الطب العام الباطنة- أمراض تشخيصية أخرى- الأمراض المتكاملة (متضمن الطب البديل).</li> </ul> |
| <p><b>3.3 Health sciences</b></p> <ul style="list-style-type: none"> <li>Health care sciences and services (including hospital administration, health care financing); Health policy and services;</li> <li>Nursing; Nutrition, Dietetics;</li> <li>Public and environmental health; Tropical medicine; Parasitology; Infectious diseases; epidemiology;</li> <li>Occupational health; Sport and fitness sciences;</li> <li>Social biomedical sciences (includes family planning, sexual health, psycho-oncology, political and social effects of biomedical research); Medical ethics; Substance abuse;</li> </ul>  | <p><b>٢,٣ العلوم الصحية</b></p> <ul style="list-style-type: none"> <li>الرعاية الطبية والخدمات (متضمن إدارة المستشفيات وتمويل الرعاية الصحية)- السياسة والخدمات الطبية.</li> <li>التمريض- التغذية- الأنظمة الغذائية.</li> <li>الصحة العامة والبيئة- طب المناطق الاستوائية- علم الطفيليـات- الأمراض المعدية- علم الأوبئة.</li> <li>الصحة المهنية- العلوم الرياضية واللياقة البدنية.</li> <li>علوم الطب الاحياني الاجتماعي (يتضمن تنظيم الأسرة والصحة الجنسية والعالج النفسي المرتبط بالأورام والتأثير الاجتماعي و السياسي لأبحاث الطب الاحياني)- أخلاقيات الطب- سوء استخدام المواد.</li> </ul>   |
| <p><b>3.4 Medical biotechnology</b></p> <ul style="list-style-type: none"> <li>Health-related biotechnology; Technologies involving the manipulation of cells, tissues, organs or the whole organism (assisted reproduction); Technologies involving identifying the functioning of DNA, proteins and enzymes and how they influence the onset of disease and maintenance of well-being (gene-based diagnostics and therapeutic interventions (pharmacogenomics, gene-based therapeutics); Biomaterials (as related to medical implants, devices, sensors); Medical biotechnology related ethics;</li> </ul>   | <p><b>٢,٤ التكنولوجيا الحيوية الطبية</b></p> <ul style="list-style-type: none"> <li>التكنولوجيا الحيوية المتعلقة بالصحة- التكنولوجيات المتعلقة باستخدام الخلايا والأنسجة والأعضاء أو أجزاء منها (التلقيح الصناعي)- التكنولوجيات المتعلقة بتحديد وظائف الحمض النووي (DNA) والبروتينات والأنزيمات وكيفية تأثيرها على بدء الأمراض وصيانة الصحة (التشخيص المبكر على الجينات والتدخل العلاجي- علم الجينوم الصيدلي والعلاجات القائمة على الجينات)- المواد الحيوية ( بما فيها الأجهزة المستزرعة وأجهزة الاستشعار)- الأخلاقيات المرتبطة بالเทคโนโลยيا الحيوية</li> </ul>  |
| <p><b>3.5 Other medical sciences</b></p> <ul style="list-style-type: none"> <li>Forensic science</li> <li>Other medical sciences</li> </ul>  | <p><b>٢,٥ علوم طبية أخرى</b></p> <ul style="list-style-type: none"> <li>علوم الطب الجنائي.</li> <li>علوم طبية أخرى.</li> </ul>  |
| <b>٤. العلوم الزراعية</b>  |   |

#### 4 Agricultural sciences

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|-----|--|--|---|
| 4.1 | Agriculture, Forestry, and Fisheries                 | • Agriculture; Forestry; Fishery; Soil science; Horticulture, viticulture; Agronomy, plant breeding and plant protection; (Agricultural biotechnology to be 4.4)   | 4,1<br>زراعة- الغابات- الثروة السمكية • زراعة- الغابات- الثروة السمكية- علوم التربية- علم البساتين- زراعة الأعشاب- علم الزراعة وإنتاج المحاصيل- إنتاج وقائية نباتية (تكنولوجيا حيوية للنباتات ٤.)   |
| 4.2 | Animal and Dairy science                             | • Animal and dairy science; (Animal biotechnology to be 4.4)<br>• Husbandry; Pets;   | 4,2<br>علوم الحيوان والألبان<br>• علم الحيوان والألبان (تكنولوجيا حيوية للحيوان ٤.)<br>• الدواجن- حيوانات اليف.   |
| 4.3 | Veterinary science                                   |  | 4,3<br>العلوم البيطرية  |
| 4.4 | Agricultural biotechnology                           | • Agricultural biotechnology and food biotechnology; GM technology (crops and livestock), livestock cloning, marker assisted selection, diagnostics (DNA chips and biosensing devices for the early/accurate detection of diseases) biomass feedstock production technologies, biopharming; agricultural biotechnology related ethics; | 4,4<br>تكنولوجيا حيوية زراعية<br>• تكنولوجيا حيوية زراعية وเทคโนโลยيا حيوية للأغذية- تكنولوجيا المعدلة وراثياً (محاصيل دوادب) واستنساخ الدواب وانتقاء باستخدام علامات- أدوات التشخيص (شريان الحمض النووي (DNA) وأجهزة الحسن الإيجابية لتحديد المضارض بدقة ودقة). تكنولوجيات إنتاج الماشي- الأخلاقيات المرتبطة بالتقنيات الزراعية الحيوية. |
| 4.5 | Other agricultural sciences                          |  | 4,5<br>علوم زراعية أخرى   |
| 5   | Social sciences                                      |  | 5. العلوم الاجتماعية<br>5,1 علم النفس   |
| 5.1 | Psychology   | • Psychology (including human - machine relations);<br>• Psychology, special (including therapy for learning, speech, hearing, visual and other physical and mental disabilities);   | • علم النفس (يتضمن علاقات الإنسان بالأجهزة).<br>• علم النفس وعلم النفس الخاص (يتضمن العلاج التعليمي والكلام والسمع وغيرها من الأنظمة البصرية والجسدية والعقلية).  |
| 5.2 | Economics and Business                               | • Economics, Econometrics; Industrial relations;<br>• Business and Management;   | 5,2<br>الاقتصاد والأعمال<br>• الاقتصاد والمؤشرات الاقتصادية وال العلاقات الصناعية.<br>• الأعمال والإدارة.   |
| 5.3 | Educational sciences                                 | • Education, general; including training, pedagogy, didactics;<br>• Education, special (to gifted persons, those with learning disabilities);  | 5,3<br>العلوم التعليمية<br>• التعليم العام (يتضمن التدريب وعلم أصول التدريس ومهنة التعليم).<br>• التعليم الخاص (يتضمن الأشخاص الموهوبين وأصحاب الإعاقات).   |
| 5.4 | Sociology  | • Sociology; Demography; Anthropology, ethnology,<br>• Social topics (Women's and gender studies; Social issues; Family studies, Social work);   | 5,4<br>علم الاجتماع<br>• الاجتماع والديموغرافيا وعلم الإنسان وعلم الأجانب.<br>• مواضيع اجتماعية (دراسات المرأة والجنس ومواضيع اجتماعية والدراسات الأسرية والعمل الاجتماعي).   |
| 5.5 | Law  | • Law, criminology, penology;  | 5,5<br>القانون<br>• القانون وعلم الجريمة وعلم السجون ومعاملة المجرمين.  |
| 5.6 | Political science                                    | • Political science; public administration; organisation theory;   | 5,6<br>علوم سياسية<br>• العلوم السياسية والإدارة العامة، والنظريات التنظيمية.   |
| 5.7 | Social and economic geography                        | • Environmental sciences (social aspects); Cultural and economic geography; Urban studies (Planning and development); Transport planning and social aspects of transport (transport engineering to 2.1);   | 5,7<br>الجغرافيا والاقتصاد الجغرافي<br>• علوم بيئية (الجانب الاجتماعي)- جغرافيا اقتصادية وثقافية- دراسات حضرية (تخطيط وتنمية)- تخطيط المواصلات والجانب الاجتماعي للنقل (هندسة المواصلات ٢.).  |
| 5.8 | Media and communications                             | • Journalism; Information science (social aspects); Library science; Media and socio-cultural communication;   | 5,8<br>الإعلام والاتصالات<br>• الصحافة- علم المعلومات (الجانب الاجتماعي)- علوم المكتبات- الإعلام والثقافة الاجتماعية للاتصالات.   |
| 5.9 | Other social sciences                                | • Social sciences, interdisciplinary;<br>• Other social sciences;  | 5,9<br>علوم اجتماعية أخرى<br>• علوم اجتماعية- متعددة التخصصات.<br>• علوم اجتماعية أخرى.   |
| 6.  | Humanities   |  | 6. العلوم الإنسانية<br>6,1 تاريخ وأثار  |
| 6.1 | History and Archaeology                              | • History (history of science and technology to be 6.3, history of specific sciences to be under the respective headings); Archaeology;  | 6,1<br>تاريخ (تاريخ العلم والتكنولوجيا ٣-٦-٣- تاريخ العلوم المحددة تحت العناوين المحددة)، علم الآثار.   |
| 6.2 | Languages and Literature                             | • General language studies; Specific languages; General literature studies; Literary theory; Specific literatures; Linguistics;  | 6,2<br>اللغات والأدب<br>• الدراسات اللغوية العامة- لغات خاصة- دراسات عامة للأدب- نظريات أدبية- أداب خاصة- لغويات (الألسنية).  |
| 6.3 | Philosophy, Ethics and Religion                      | • Philosophy, History and philosophy of science and technology;<br>• Ethics (except ethics related to specific subfields); Theology; Religious studies;  | 6,3<br>الفلسفة والأخلاقيات والدين<br>• الفلسفة- تاريخ وفلسفة العلم والتكنولوجيا.<br>• الأخلاقيات (فيما عدا الأخلاقيات المرتبطة بالفروع المحددة)- اللاهوت- دراسات دينية.   |
| 6.4 | Arts (arts, history of arts, performing arts, music) | • Arts, Art history; Architectural design; Performing arts studies (Musicology, Theater science, Dramaturgy); Folklore studies;<br>• Studies on Film, Radio and Television;  | 6,4<br>الفنون (الفنون وتاريخ الفنون والفنون المسرحية والموسيقى)<br>• الفنون- تاريخ الفنون- تصميم هندسي- دراسات الفنون المسرحية (علم الموسيقى- علم المسرح- التمثيل المسرحي)- دراسات الفنون الشعبية.<br>• دراسات عن الأفلام والراديو والتلفزيون.  |
| 6.5 | Other humanities                                     |  | 6,5<br>علوم إنسانية أخرى<br>OECD: DSTI/EAS/STP/NESTI(2006)19/FINAL المصدر:  |

Source:OECD:DSTI/EAS/STP/NESTI(2006)19/FINAL

### Appendix B: One Digit Socio-Economic Objective Classification

1. Exploration and Exploitation of the Earth.
2. Environment.
3. Exploration and Exploitation of Space.
4. Transport, telecommunication and other infrastructures.
5. Energy.
6. Industrial production and technology.
7. Health.
8. Agriculture.
9. Education.
10. Culture, recreation, religion and mass media.
11. Political and social systems, structures and processes.
12. General advancement of knowledge.
13. Defence.

### الملحق بـ: تصنیف الأهداف الاجتماعيةـ الاقتصادیة الأحادي

- .١ استكشاف واستغلال الأرض.
- .٢ البيئة.
- .٣ استكشاف واستغلال الفضاء.
- .٤ النقل والاتصالات وغيرها من البنية التحتية.
- .٥ الطاقة.
- .٦ الانتاج الصناعي والتكنولوجيا.
- .٧ الصحة.
- .٨ الزراعة.
- .٩ التعليم.
- .١٠ الثقافة والترفيه والدين ووسائل الإعلام.
- .١١ النظم السياسية والاجتماعية، والهيئات والعمليات.
- .١٢ تقدم المعرفة العامة.
- .١٣ الدفاع.

### Appendix C: (ISIC) (Rev. 4)

International Standard Industrial Classification (ISIC) of Economic Activities

#### A : Agriculture, forestry and fishing

1. Crop and animal production, hunting and related service activities
2. Forestry and logging
3. Fishing and aquacult

#### B : Mining and quarrying

5. Mining of coal and lignite
6. Extraction of crude petroleum and natural gas
7. Mining of metal ores
8. Other mining and quarrying
9. Mining support service activities

#### C : Manufacturing

10. Manufacture of food products
11. Manufacture of beverages
12. Manufacture of tobacco products
13. Manufacture of textiles
14. Manufacture of wearing apparel
15. Manufacture of leather and related products
16. Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17. Manufacture of paper and paper products
18. Printing and reproduction of recorded media
19. Manufacture of coke and refined petroleum products
20. Manufacture of chemicals and chemical products
21. Manufacture of basic pharmaceutical products and pharmaceutical preparations
22. Manufacture of rubber and plastics products
23. Manufacture of other non-metallic mineral products
24. Manufacture of basic metals
25. Manufacture of fabricated metal products, except machinery and equipment
26. Manufacture of computer, electronic and optical products
27. Manufacture of electrical equipment
28. Manufacture of machinery and equipment n.e.c.
29. Manufacture of motor vehicles, trailers and semi-trailers
30. Manufacture of other transport equipment
31. Manufacture of furniture
32. Other manufacturing
33. Repair and installation of machinery and equipment

#### D : Electricity, gas, steam and air conditioning supply

35. Electricity, gas, steam and air conditioning supply

### الملحق جـ: (ISIC) (التقسيم ٤)

التصنيف الصناعي الدولي الموحد لجميع الأنشطة الاقتصادية (ISIC)

#### ألف : الزراعة والزراعة وصيد الأسماك

- .١ أنشطة زراعة المحاصيل والإنتاج الحيواني والصيد والخدمات المتصلة
- .٢. الحراجة وقطع الأخشاب
- .٣ صيد الأسماك وتربية المائيات

#### باء : التعدين واستغلال المحاجر

- .٥ تعدين الفحم والبليت
- .٦ استخراج النفط الخام والغاز الطبيعي
- .٧ تعدين بكرات الفلزات
- .٨ الأنشطة الأخرى للتعدين واستغلال المحاجر
- .٩ أنشطة خدمات دعم التعدين

#### جيم : الصناعة التحويلية

- .١٠ صنع المنتجات الغذائية
- .١١ صنع المشروبات
- .١٢ صنع منتجات التبغ
- .١٣ صنع المنسوجات
- .١٤ صنع الملبوسات
- .١٥ صنع المنتجات الجلدية والمنتجات ذات الصلة
- .١٦ صنع الخشب ومنتجات الخشب والفلين، باستثناء الأثاث: صنع أصناف من القش ومواد الخفر
- .١٧ صنع الورق ومنتجاته الورق
- .١٨ الطباعة واستنساخ وسائل الإعلام المسجلة
- .١٩ صنع فحم الكوك والمنتجات النفطية المكررة
- .٢٠ صنع المواد الكيميائية والمنتجات الكيميائية
- .٢١ صنع المنتجات الصيدلانية الأساسية والمستحضرات الصيدلانية
- .٢٢ صنع منتجات المطاط وللدان
- .٢٣ صنع منتجات المعادن الألفاريزية الأخرى
- .٢٤ صنع الفلزات القاعدية
- .٢٥ صنع منتجات المعادن المشكّلة، باستثناء الآلات والمعدات
- .٢٦ صنع الحواسيب والمنتجات الإلكترونية والبصرية
- .٢٧ صنع المعدات الكهربائية
- .٢٨ صنع الآلات والمعدات غير المصنفة في موضع آخر
- .٢٩ صنع المركبات ذات المحركات والمركبات المقطرة ونصف المقطرة
- .٣٠ صنع معدات النقل الأخرى
- .٣١ صنع الأثاث
- .٣٢ الصناعات التحويلية الأخرى
- .٣٣ إصلاح وتركيب الآلات والمعدات

#### DAL : إمدادات الكهرباء والغاز والبخار وتكييف الهواء

- .٣٥ توصيل الكهرباء والغاز والبخار وتكييف الهواء

**E : Water supply; sewerage, waste management and remediation activities**

- 36. Water collection, treatment and supply
- 37. Sewerage
- 38. Waste collection, treatment and disposal activities; materials recovery
- 39. Remediation activities and other waste management services

هاء : إمدادات المياه: أنشطة المجاري، وإدارة الفضلات والمعالجة

٣٦. تجميع المياه ومعالجتها وتوصيلها

٣٧. الصرف الصحي

٣٨. أنشطة جمع النفايات ومعالجتها وتصريفها، واسترجاع المواد

٣٩. أنشطة المعالجة وخدمات إدارة النفايات الأخرى

**F : Construction**

- Construction of buildings
- Civil engineering
- Specialized construction activities

**G : Wholesale and retail trade; repair of motor vehicles and motorcycles**

- |    |   |
|----|---|
| 45 | 45. Wholesale and retail trade and repair of motor vehicles and motorcycles |
| 46 | 46. Wholesale trade, except of motor vehicles and motorcycles               |
| 47 | 47. Retail trade, except of motor vehicles and motorcycles                  |

زاي : تجارة الجملة والتجزئة: إصلاح المركبات ذات المحركات والدراجات النارية

٤٥. تجارة الجملة والتجزئة واصلاح المركبات ذات المحركات والدراجات النارية

٤٦. تجارة الجملة، باستثناء المركبات ذات المحركات والدراجات النارية

٤٧. تجارة التجزئة، باستثناء المركبات ذات المحركات والدراجات النارية

**H : Transportation and storage**

- 49. Land transport and transport via pipelines
- 50. Water transport
- 51. Air transport
- 52. Warehousing and support activities for transportation
- 53. Postal and courier activities

حاء : النقل والتخزين

٤٩. النقل البري والنقل عبر الأنابيب

٥٠. النقل المائي

٥١. النقل الجوي

٥٢. التخزين وأنشطة الدعم للنقل

٥٣. أنشطة البريد ونقل الطرود بواسطة مندوبي

**I : Accommodation and food service activities**

- 55. Accommodation
- 56. Food and beverage service activities

طاء : أنشطة الإقامة والخدمات الغذائية

٥٥. الإقامة

٥٦. أنشطة خدمات الأطعمة والمشروبات

**J : Information and communication**

- 58. Publishing activities
- 59. Motion picture, video and television programme production, sound recording and music publishing activities
- 60. Programming and broadcasting activities
- 61. Telecommunications
- 62. Computer programming, consultancy and related activities
- 63. Information service activities

باء : المعلومات والاتصالات

٥٨. أنشطة النشر

٥٩. أنشطة إنتاج الأفلام والبرامج التلفزيونية والتسجيلات الصوتية ونشر الموسيقى

٦٠. أنشطة البرمجة والإذاعة

٦١. الاتصالات

٦٢. أنشطة البرمجة الحاسوبية والخبرة الاستشارية وما يتصل بها من أنشطة

٦٣. أنشطة خدمات المعلومات

**كاف : الأنشطة المالية وأنشطة التأمين**

٦٤. أنشطة الخدمات المالية، بما تمويل التأمين وصناديق المعاشات

٦٥. تمويل التأمين وإعادة التأمين وصناديق المعاشات التقاعدية باستثناء الضمان الاجتماعي الإلزامي

٦٦. الأنشطة المساعدة لأنشطة الخدمات المالية وأنشطة التأمين

**لام : الأنشطة العقارية**

٦٨. الأنشطة العقارية

**مم : الأنشطة المهنية والعلمية والتقنية**

٦٩. الأنشطة القانونية وأنشطة المحاسبة

٧٠. أنشطة المكاتب الرئيسية، والأنشطة الاستشارية في مجال الإدارة

٧١. الأنشطة المعمارية وال الهندسية، والاختبارات الفنية والتحليل

٧٢. البحث والتطوير في المجال العلمي

٧٣. أبحاث الإعلان والسوق

٧٤. الأنشطة المهنية والعلمية والتقنية الأخرى

٧٥. الأنشطة البيطرية

**نون : أنشطة الخدمات الإدارية وخدمات الدعم**

٧٧. الأنشطة الإيجارية

٧٨. أنشطة الاستخدام

٧٩. وكالات السفر ومتطلعو الجولات السياحية وخدمات الحجز وأنشطة المتعلقة بها

٨٠. أنشطة الأ隼 والتحقيقات

٨١. أنشطة تقديم الخدمات للمباني وتحجيم الواقع

٨٢. الأنشطة الإدارية للمكاتب، وأنشطة الدعم للمكاتب وغير ذلك من أنشطة الدعم للأعمال

**K : Financial and insurance activities**

- 64. Financial service activities, except insurance and pension funding
- 65. Insurance, reinsurance and pension funding, except compulsory social security
- 66. Activities auxiliary to financial service and insurance activities

**L : Real estate activities**

- 68. Real estate activities

**M : Professional, scientific and technical activities**

- 69. Legal and accounting activities
- 70. Activities of head offices; management consultancy activities
- 71. Architectural and engineering activities; technical testing and analysis
- 72. Scientific research and development
- 73. Advertising and market research
- 74. Other professional, scientific and technical activities
- 75. Veterinary activities

**N : Administrative and support service activities**

- 77. Rental and leasing activities
- 78. Employment activities
- 79. Travel agency, tour operator, reservation service and related activities
- 80. Security and investigation activities
- 81. Services to buildings and landscape activities
- 82. Office administrative, office support and other business support activities

**O : Public administration and defence; compulsory social security**  
84. Public administration and defence; compulsory social security

سين : الإدارة العامة والدفاع: الضمان الاجتماعي الإجباري  
٨٤. الإدارة العامة والدفاع: والضمان الاجتماعي الإلزامي

**P : Education**  
85. Education

عين : التعليم  
٨٥. التعليم

**Q : Human health and social work activities**

86. Human health activities  
87. Residential care activities  
88. Social work activities without accommodation

فاء : أنشطة الصحة البشرية والخدمة الاجتماعية  
٨٦. الأنشطة في مجال صحة الإنسان  
٨٧. أنشطة الرعاية مع الإقامة  
٨٨. أنشطة العمل الاجتماعي، دون إقامة

**R : Arts, entertainment and recreation**

90. Creative, arts and entertainment activities  
91. Libraries, archives, museums and other cultural activities  
92. Gambling and betting activities  
93. Sports activities and amusement and recreation activities

صاد : الفنون والتربية والترفيه  
٩٠. الأنشطة الإبداعية والفنون وأنشطة الترفيه  
٩١. أنشطة المكتبات والمخطوطات والمتاحف والأنشطة الثقافية الأخرى  
٩٢. أنشطة العاب القمار والراهنة  
٩٣. الأنشطة الرياضية وأنشطة التسلية والترفيه

**S : Other service activities**

94. Activities of membership organizations  
95. Repair of computers and personal and household goods  
96. Other personal service activities

قاف : أنشطة الخدمات الأخرى  
٩٤. أنشطة المنظمات ذات العضوية  
٩٥. إصلاح أجهزة الكمبيوتر والسلع الشخصية والمنزلية  
٩٦. أنشطة الخدمات الشخصية الأخرى

**T : Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use**

97. Activities of households as employers of domestic personnel  
98. Undifferentiated goods- and services-producing activities of private households for own use

راء : أنشطة الأسر المعيشية كصاحب عمل: أنشطة الأسر المعيشية لإنتاج سلع وخدمات غير مميزة لاستعمالها الخاص  
٩٧. أنشطة الأسر المعيشية التي تستخدم أفراداً للعمل المنزلي  
٩٨. أنشطة غير المميزة لإنتاج السلع والخدمات التي تقوم بها الأسر المعيشية لاستعمالها الخاص

**U : Activities of extraterritorial organizations and bodies**

99. Activities of extraterritorial organizations and bodies

شين : أنشطة المنظمات والهيئات الخارجية عن نطاق الولاية الإقليمية  
٩٩. أنشطة المنظمات والهيئات غير الخاضعة للتشریعات الوطنية

Source: [stats.un.org/unsd/cr/registry/regcst.asp?CI=27](http://stats.un.org/unsd/cr/registry/regcst.asp?CI=27)

المصدر: [stats.un.org/unsd/cr/registry/regcst.asp?CI=27](http://stats.un.org/unsd/cr/registry/regcst.asp?CI=27)

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