REPUBLIC OF RWANDA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

National Council for Science and Technology

RWANDA NATIONAL RESEARCH AND EXPERIMENTAL DEVELOPMENT (R&D) SURVEY FOR 2018/2019

FINAL ANALYSIS REPORT

November 11, 2021

Launched on 11th November 2021

Background

Rwanda Vision 2050: Importance of R&D

Agrarian society

- Vision 2035 (*middle-income*) and 2050 (*high-income*)
- Invention and innovation: Key driver NST-1 (2017-24)

Industrial society

- Driven by use of technology, mass production
- Increased R&D output, and more Innovation (by 2035)

Knowledge based society

- High R&D, knowledge creation, more innovation (2050)
- Target frontier industries, job creation, entrepreneurship

R&D Survey Methodology

- OECD in the Frascati Manual (OECD, 2015
- Coherence and international comparability

Target Population

- Government sector,
- Higher Education sector
- Private Non-Profit (PNP)
- Business enterprise

Indicators assessed

27 R&D Indicators

Four (4) Domains

- R&D Expenditure
- R&D Financing
- R&D personnel
- R&D Output

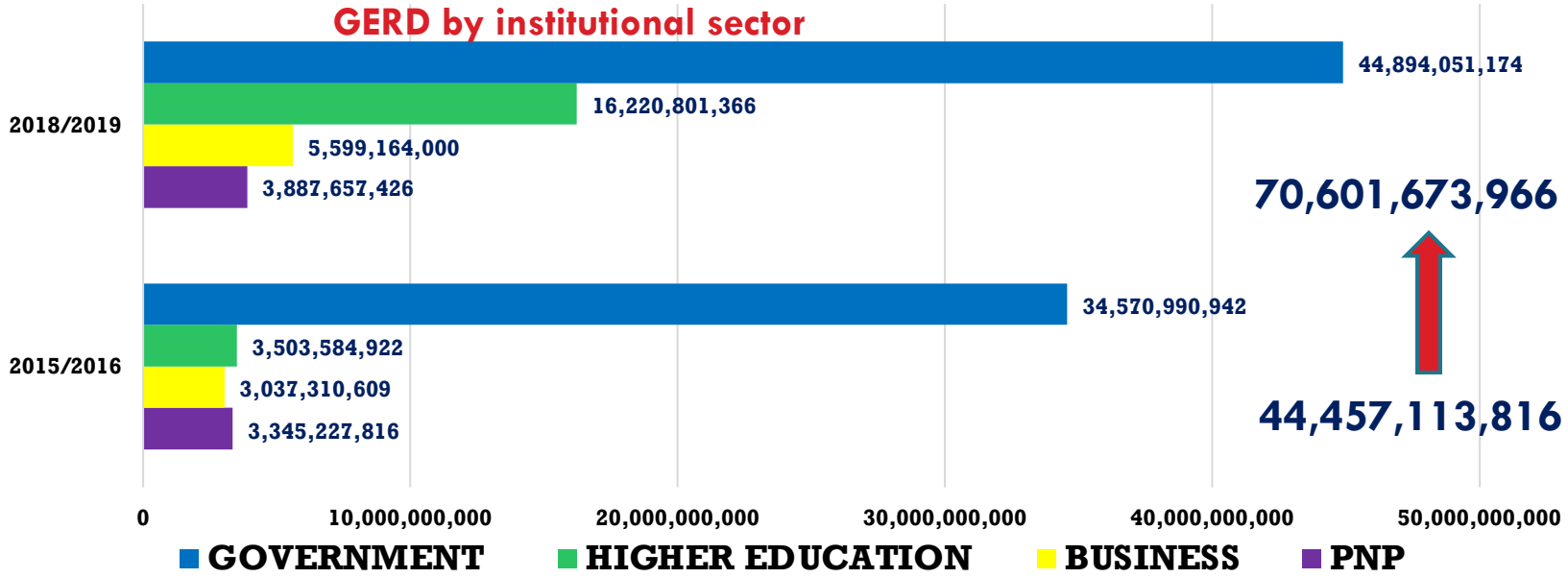
Findings: R&D Expenditure

- Gross Domestic Expenditure on R&D (GERD) in 2018/19 increased. GERD amounted to 70,601,673,966 Rwf in 2018/2019 from 44,457,113,816 Rwf in 2015/2016.

- R&D intensity, which is the GERD as a percentage of GDP increased slightly, rising by only three basis points from 0.66% in 2015/2016 to 0.69% in 2018/2019.

Indicator	Value	
	2015/2016	2018/2019
Gross domestic expenditure on R&D (GERD) (Rwf)	44,457,113,816	70,601,673,966
GERD as a percentage of GDP (%)	**0.66**	**0.69**

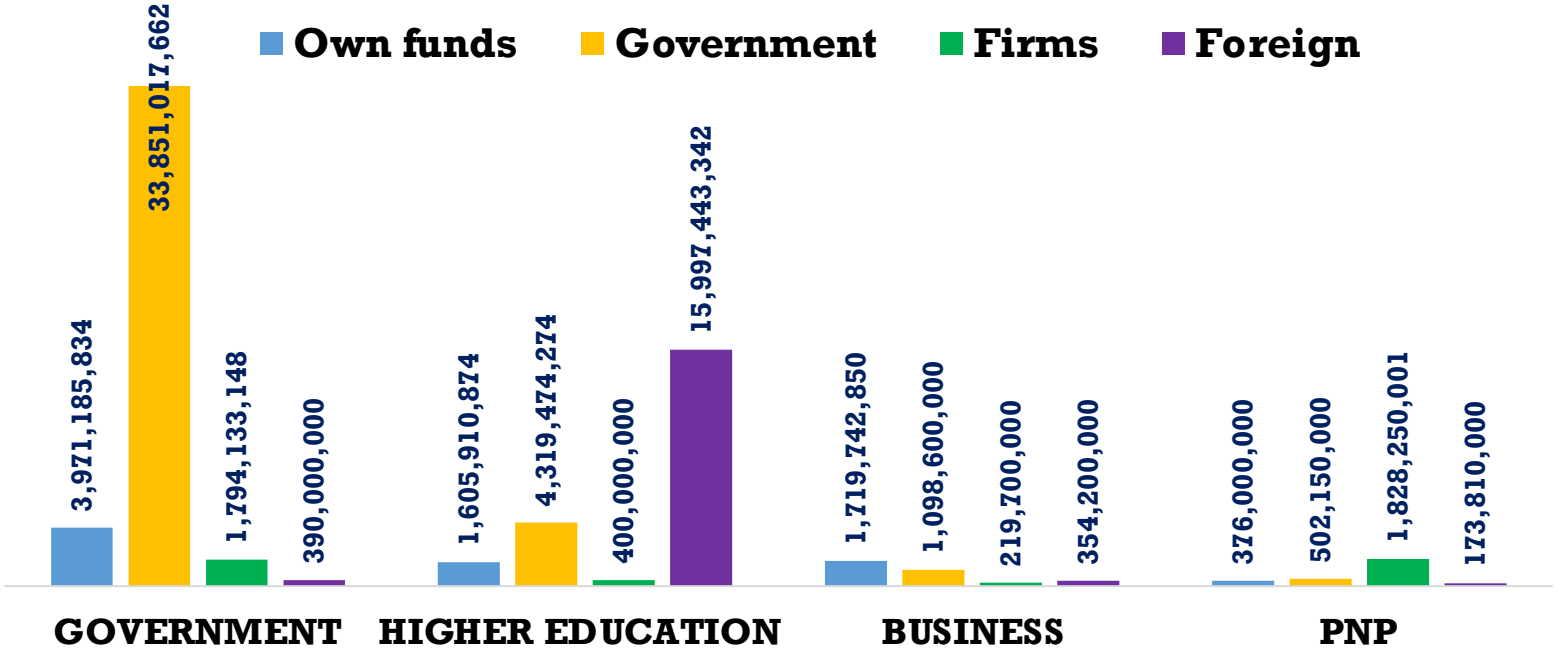
GERD by institutional sector



Definition	**The Frascati Manual (OECD, 2015) defines the R&D-performing sectors as the government, higher education, business and Private Non-Profit (PNP) sectors. The current survey followed this approach in order to maintain consistency with the recommended categorization of institutional sectors.**
Data sources	**Rwanda National Survey of Research and Experimental Development, 2015/2016 to 2018/2019.**

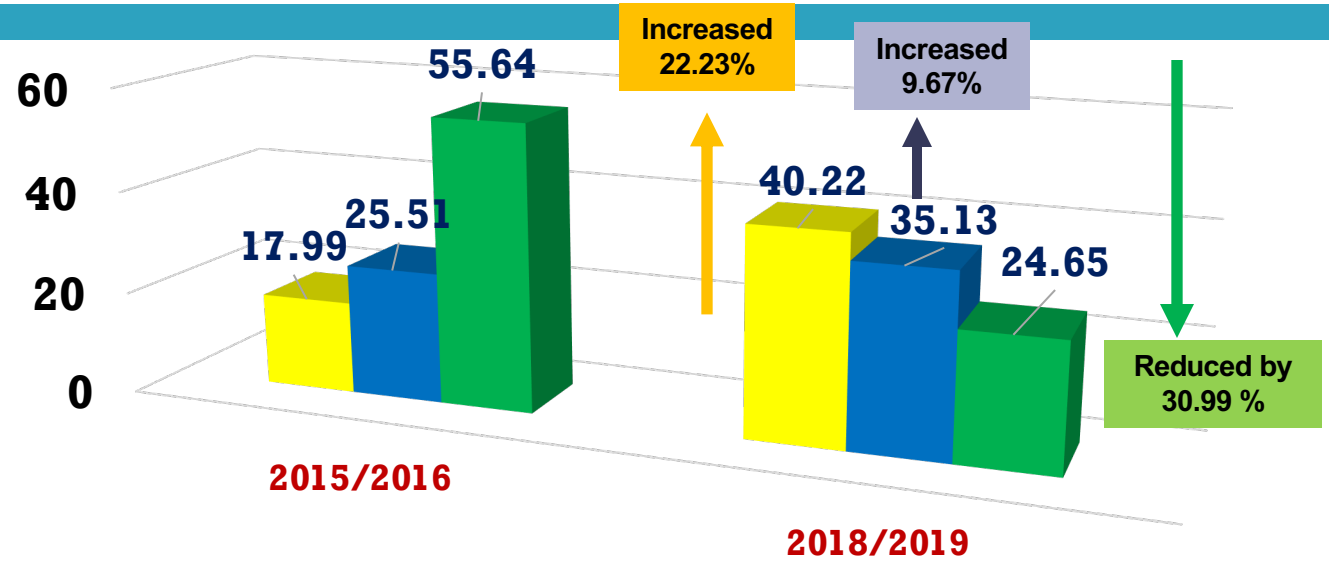
Findings: Funding for R&D

GERD by sources of funds (*Sector comparison on source of funding*)



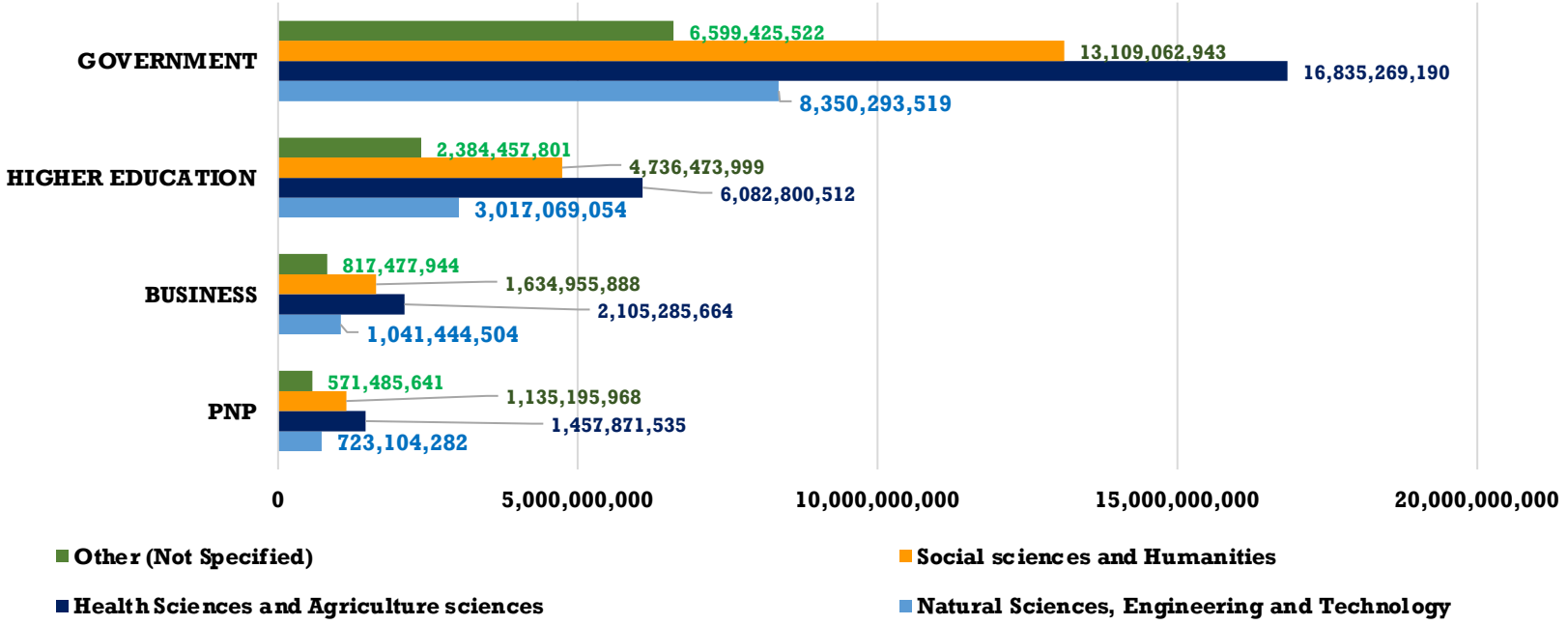
Data sources	Own funds is the funding from the R&D-performing unit own budget
Data sources	Rwanda National Survey of Research and Experimental Development, 2018/2019.

GERD by type of research (Percentage)



Data note	The OECD's Frascati Manual defines three types of research: Basic research, Applied research and Experimental development (for more details, refer to Definition of Terms).
Data sources	Rwanda National Survey of Research and Experimental Development, 2015/2016 to 2018/2019.

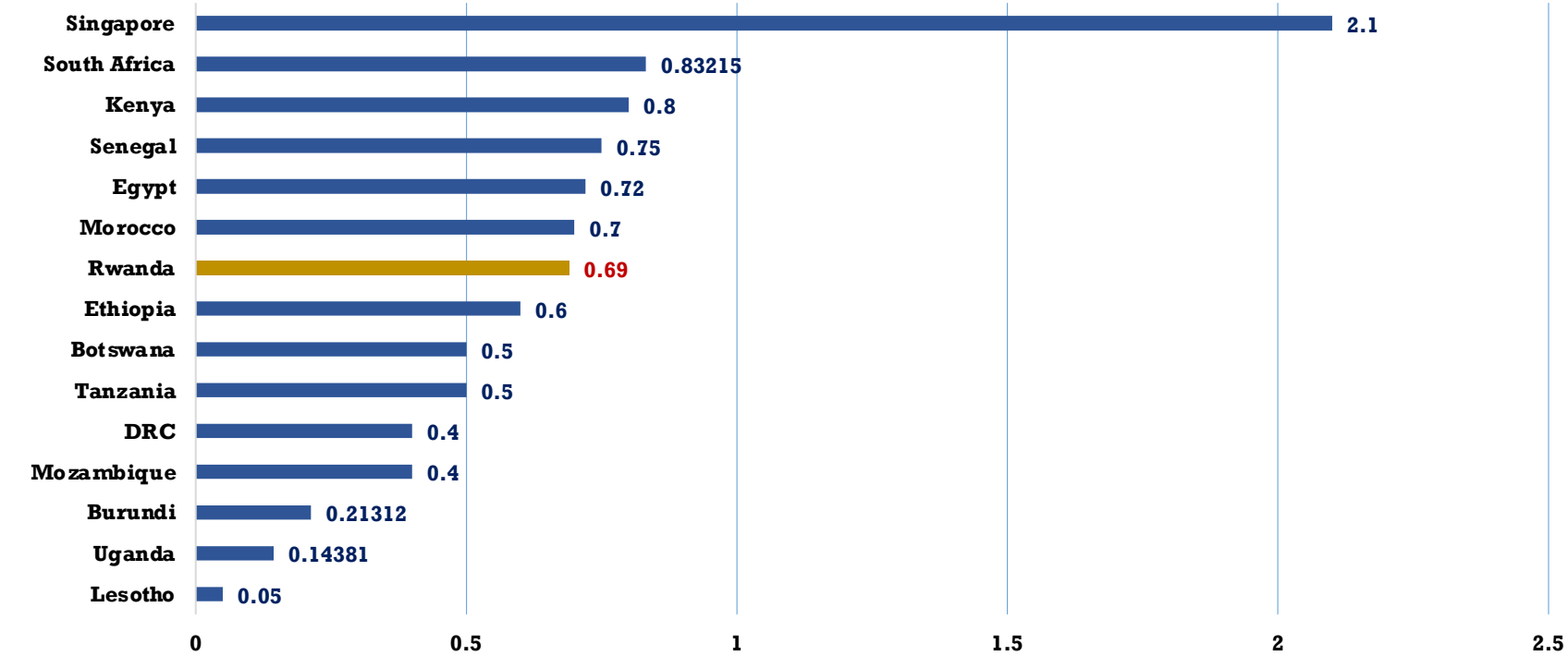
GERD by research field and sector of performance



Data note	The 2015 Frascati Manual classifies the Fields of Research (FORD) as follows: 1. natural sciences, 2. engineering and technology, 3. medical and health sciences, 4. agricultural and veterinary sciences, 5. social sciences, 6. humanities and art sciences and 7. other (not specified). Data in Rwanda is collected according to these FORD. Here it is aggregated into 3 categories and other for convenience.
Data sources	Rwanda National Survey of Research and Experimental Development, 2018/2019.

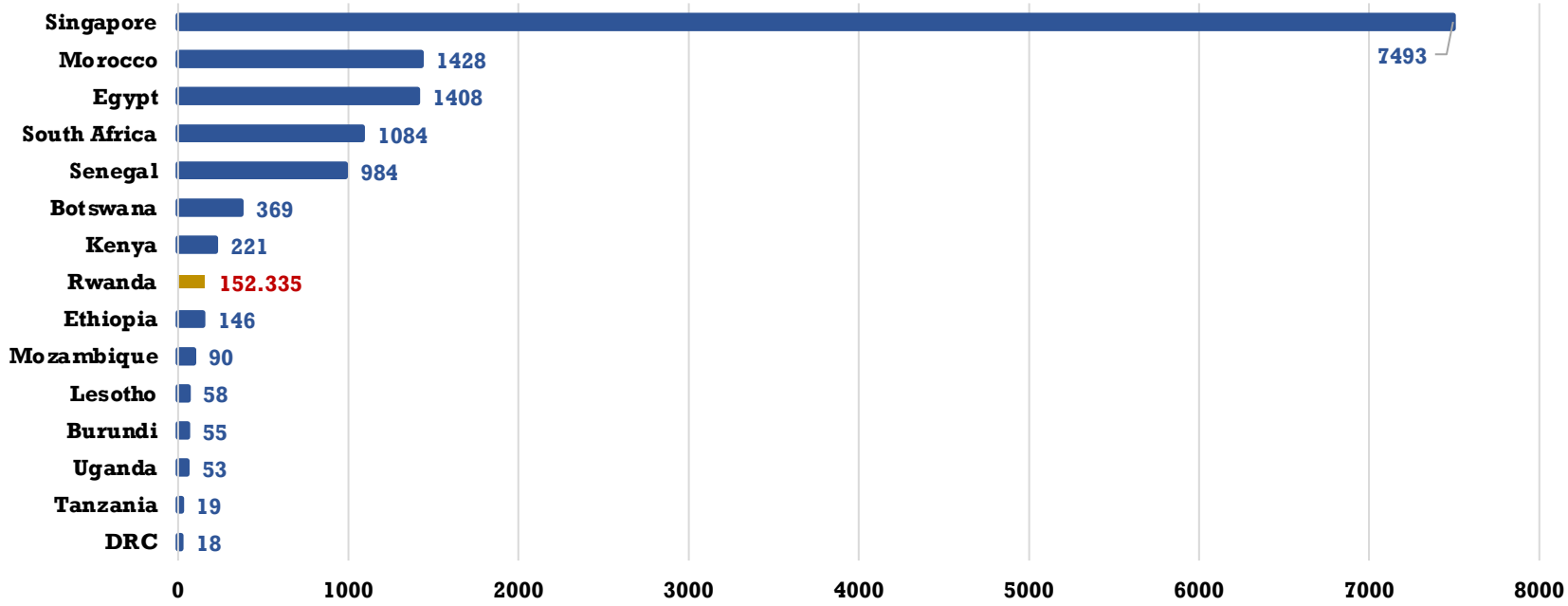
International comparisons

Gross domestic expenditure on R&D



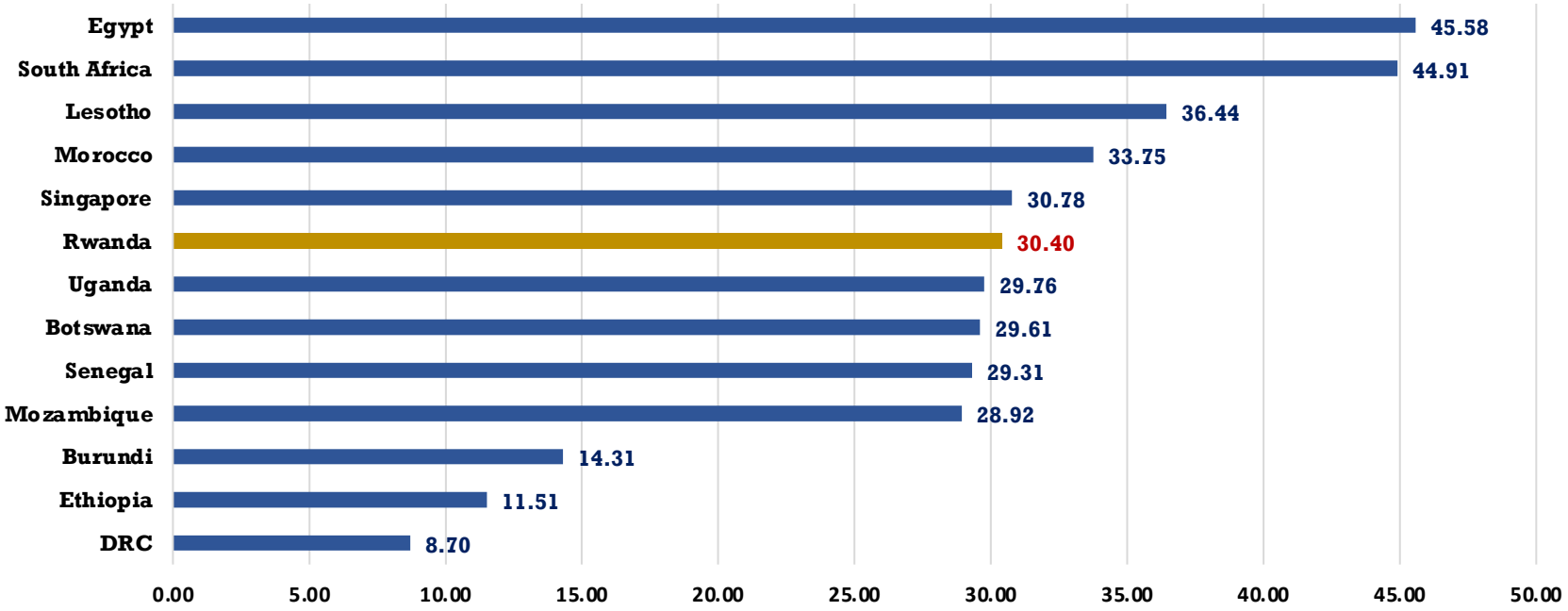
Source: UNESCO Institute of statistics, R&D Survey 2018/2019

Researcher per 1 million inhabitants for some African countries



Source: UNESCO Institute of statistics, R&D Survey 2018/2019

Female researchers as a percentage of total researchers



Source: UNESCO Institute of statistics, OECD and R&D Survey 2018/2019

Conclusions: R&D data

- Evidence to inform the status, setting, and performance of policy targets and programs.
- As an important tool for monitoring the performance of the National Innovation System (NIS),
- R&D survey findings indicate gaps to be addressed so that the NIS can contribute optimally to Rwanda's socio-economic development targets.

Key recommendations

- There is a need to continue increasing the overall Gross Domestic Expenditure on R&D (GERD) (**R&D Financing is Critical**)

- A special funding **scheme attracting women** is recommended to build the capacity and increase the number of women involved in R&D activities.

- The country's human capital and its research outputs need to be increased.

Key recommendations *(Continued)*

- Public-Private sector collaboration needs to be strengthened in a way that stimulates business R&D investment. Moreover, there is also a need to increase academia-industry collaboration for the up-take of collaborative R&D projects.

- There is a need to sensitize businesses to develop and implement R&D strategy as well as invest in R&D projects in order to boost business innovations.