

# Promoting the growing and access to scientific literature through NRENs in Africa

**Marangaze Munhepe Mulhanga<sup>1</sup>, Solange Rito Lima<sup>1</sup>, Venâncio Massingue<sup>2</sup> and João Nuno Ferreira<sup>3</sup>**

<sup>1</sup> Centro Algoritmi, Universidade do Minho, Portugal

<sup>2</sup> Universidade Eduardo Mondlane, Mozambique

<sup>3</sup> Fundação para a Ciência e a Tecnologia, Portugal

Email: [mmunhepe@di.uminho.pt](mailto:mmunhepe@di.uminho.pt), [solange@di.uminho.pt](mailto:solange@di.uminho.pt), [venancio.massingue@uem.mz](mailto:venancio.massingue@uem.mz), [ferreira@fccn.pt](mailto:ferreira@fccn.pt)

# Agenda

- The access to scientific literature through digital libraries
- OA initiatives regarding repositories and journals
- OA policies and mandates
- The Portuguese experience
- The African context
- Mozambique as a case study

# Unrestricted Access to Scientific Literature

1. The commercialization of scientific journals by commercial publishers:
  - monopoly of the commercial scientific publishers
2. Open Access (OA):
  - provide access to scientific and academic literature free of restrictions
  - supported by ICT, which allow accessing data via the Internet
  - Repositories are the most used platforms
  - journals and self-archiving publications: *Gold OA and Green OA*

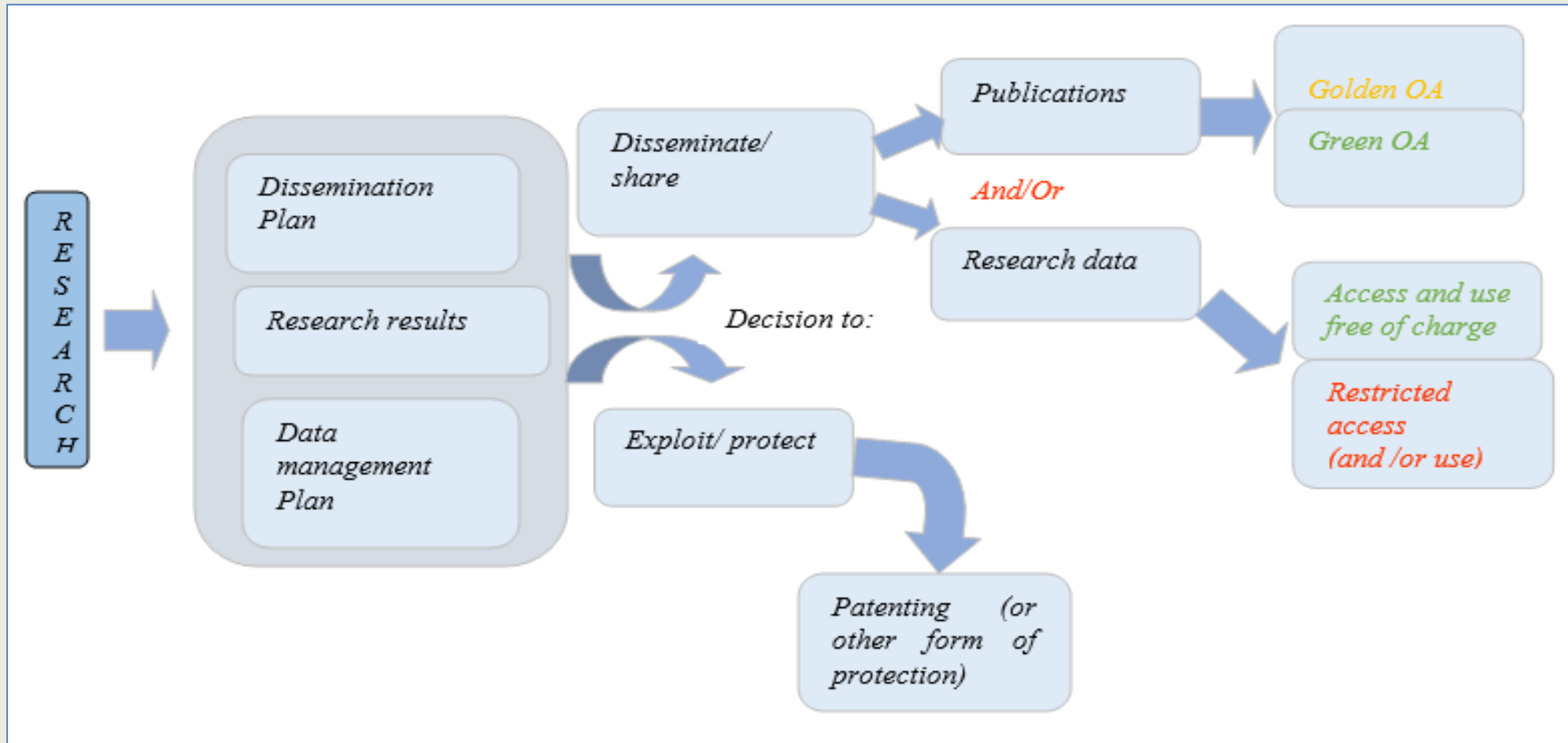
# OA Benefits

- Visibility and use of research results
- Balance in accessing information
- Visibility to authors, and valuation of intellectual property
- The return on research investment
- Production of new knowledge, promoting the use and transformation of already existent knowledge
- To foster interdisciplinary research

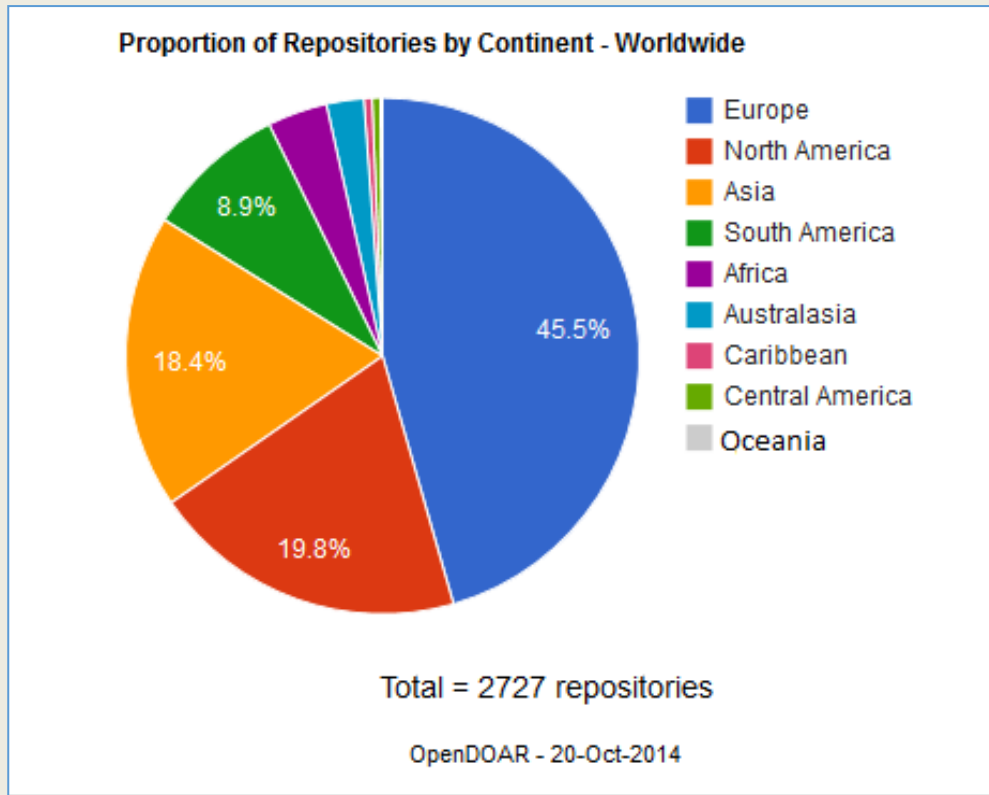
# Policies and Mandates

- For a country level: OA policies and mandates involve institutions, government and research funding agencies
- Institutional policies:
  - Teachers and researchers who are authors and co-authors of publications
  - Other documents; research centers and departments; authors of theses and dissertations approved by the institutions to promote self-archiving.
- The results of publicly funded research be made available in OA, including the data resulting from research
  - USA , 2013: the directive from the Office of Science and Technology Policy
  - EU: European Council (EC) has launched community guidelines and projects, being the OA Pilot in FP7 in 2008 and new guidelines of OA launched under Horizon 2020

# OA – Decision Process



# Repositories, Policies and Mandates



Asia	Africa	Europe	North America	Oceania	South America
45	18	302	173	42	30

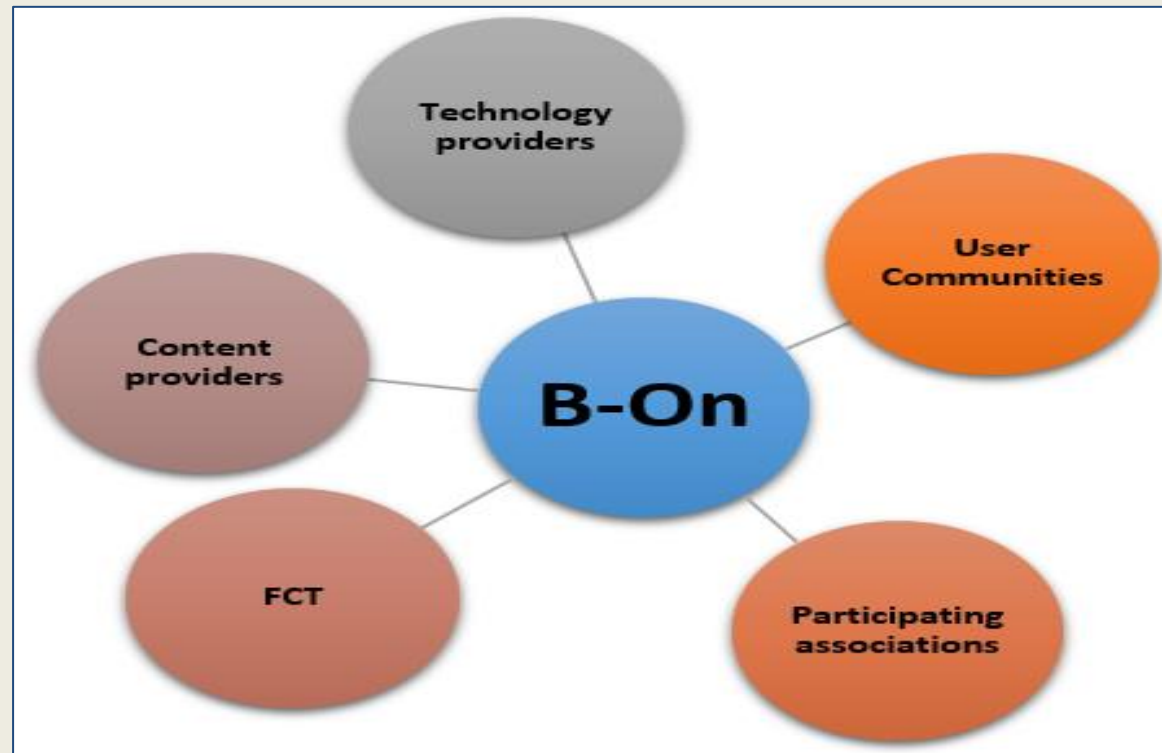
Policies and Mandates (including proposals) –  
ROARMAP (Oct , 2014)

# The Portuguese experience

- **FCT** (through FCCN unit):the managing body of the Portuguese NREN
- **B-on**: The national digital library
  - To access scientific contents
  - To acquire and manage the access to the information
- **RCAAP**: The National OA repository
  - 35 institutional repositories and 5 journals
  - exceeding 100,000 documents
  - within RCAAP : SARI, a service which allows institutions to have their own repository hosted in the cloud.

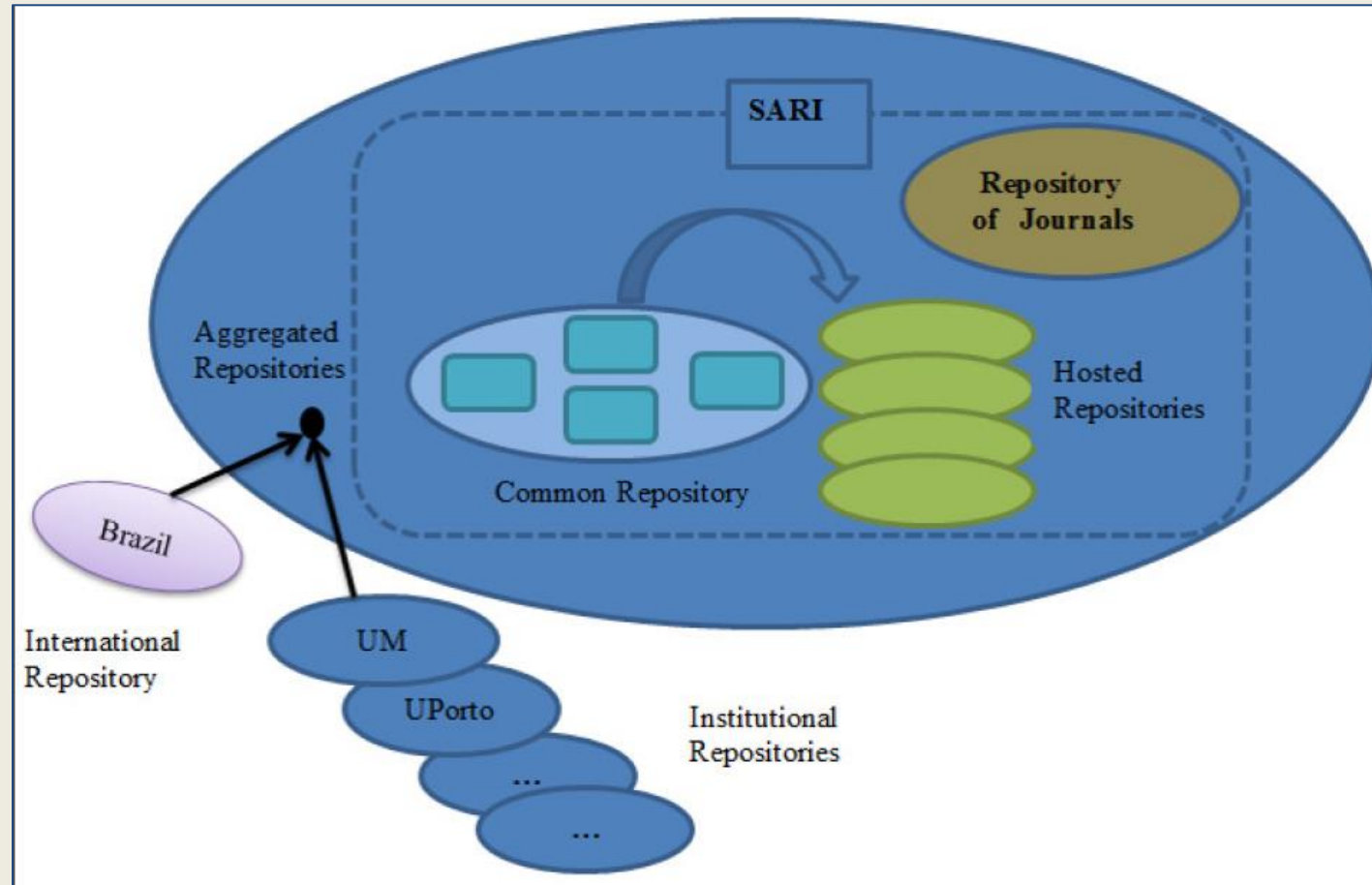


# B-On: The Digital Library Service entities and Processes



B-on: Service entities

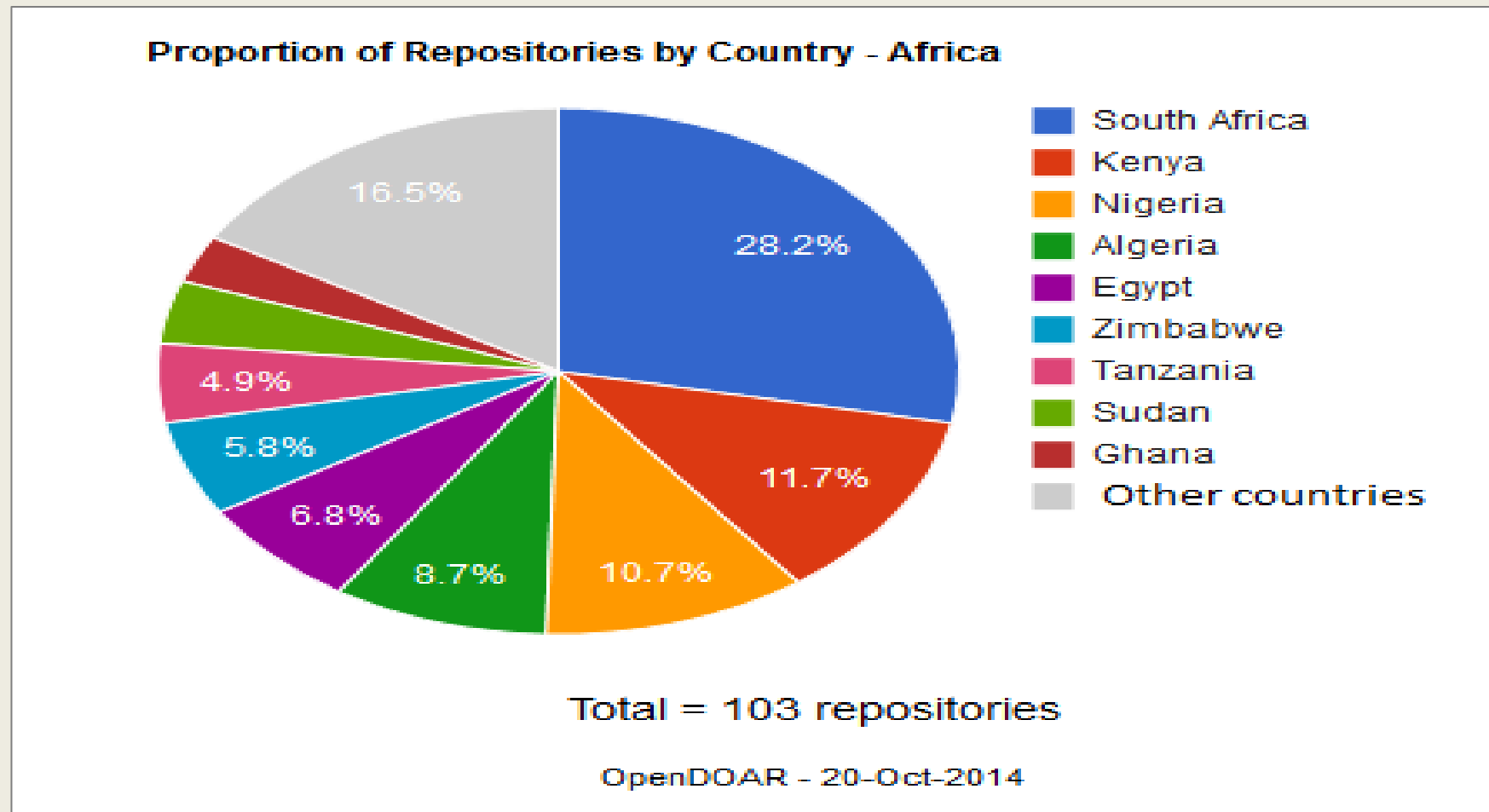
# Portugal: The National OA Repository RCAAP

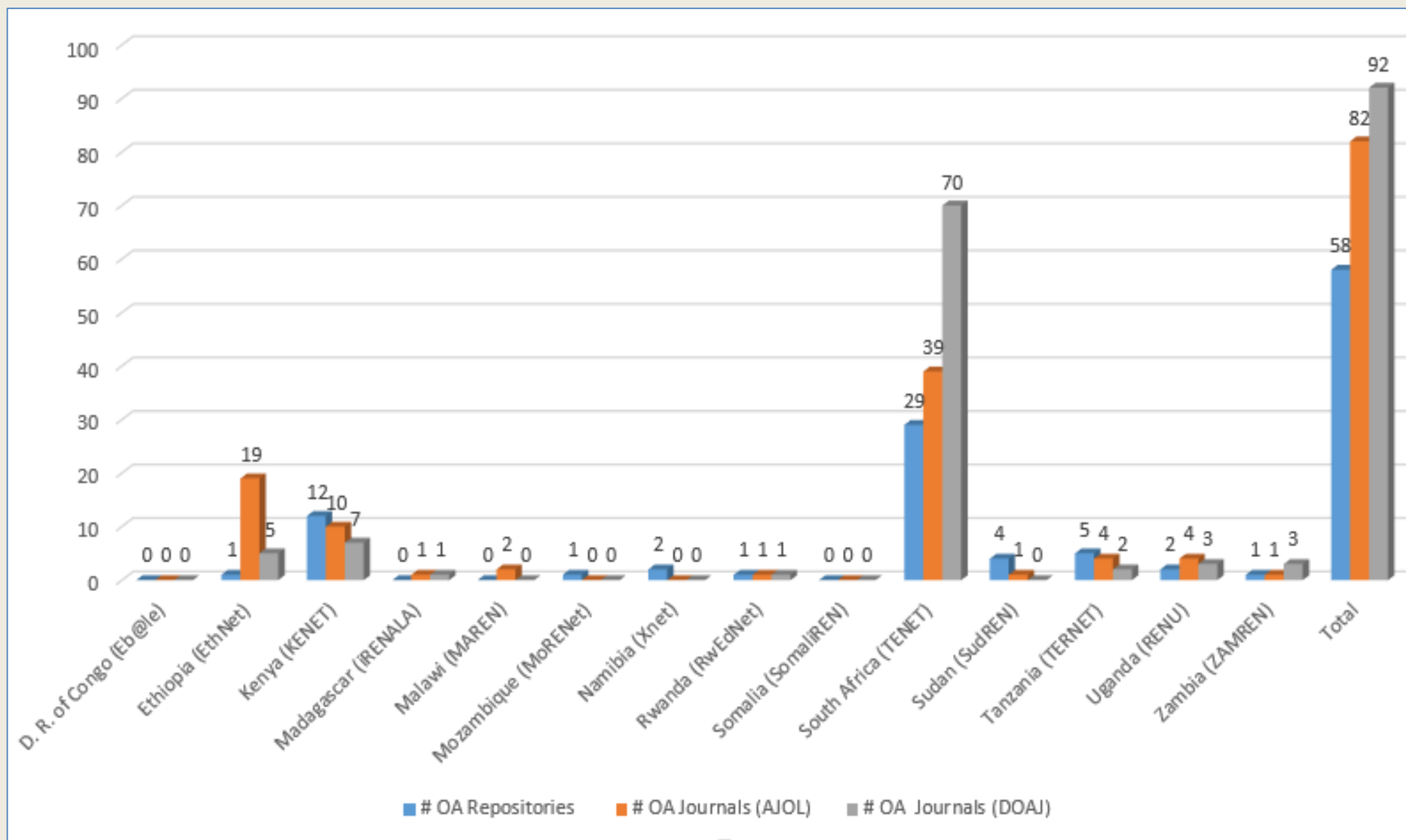


# The African Context

- The highest costs for the use of mobile telephony and Internet
- Africa grew by 5.2% between 2000 and 2014
- 8.6% of Internet users in the world [Internet World Stats]
- UbuntuNet Alliance is an African association of NRENs
- **Accessing knowledge in Africa**
  - several African institutions provide the scientific community needs resorting to organizations that support and promote access and sharing of knowledge.
  - INASP, AAS, Research4, EIFL, UNESCO ...

# Repositories in Africa





Country (#)	Type of mandate	Institution(s) or Funder(s)
<b>Algeria (1))</b>	Institutional Mandate	Université M'hamed Bougara - Boumerdes
<b>Kenya (5)</b>	Institutional Mandate	University of Nairobi
	Institutional Mandate	Strathmore University
	Institutional Mandate	Jomo Kenyatta University of Agriculture and Technology
	Institutional Mandate	Kenyatta University
	Thesis Mandate	Pwani University
<b>Nigeria (2)</b>	Institutional Mandate	Covenant University
	Thesis Mandate	Covenant University
<b>South Africa (5)</b>	Thesis Mandate	University of Pretoria
	Institutional Mandate	University of Pretoria
	Thesis Mandate	University of Stellenbosch/Stellenbosch University
	Thesis Mandate	TWAS & OWSD
	Institutional Mandate	University of South Africa (UNISA)
<b>Zimbabwe (2)</b>	Institutional Mandate	Midlands State University
	Institutional Mandate	Bindura University of Science Education

# Mozambique as a Case Study

- National Research System (NRS)
  - 2000: emerged a ministry specifically dedicated to science and technology (MST)
  - 2005: created the National Research Fund (NRF)
  - 2006: Science, Technology and Innovation Strategy of Mozambique (STISM)
    - Mozambique Research and Education Network (MoRENet)
    - 13 institutions, with 34Mbps and 155Mbps shared Internet via SEACOM

# Mozambique

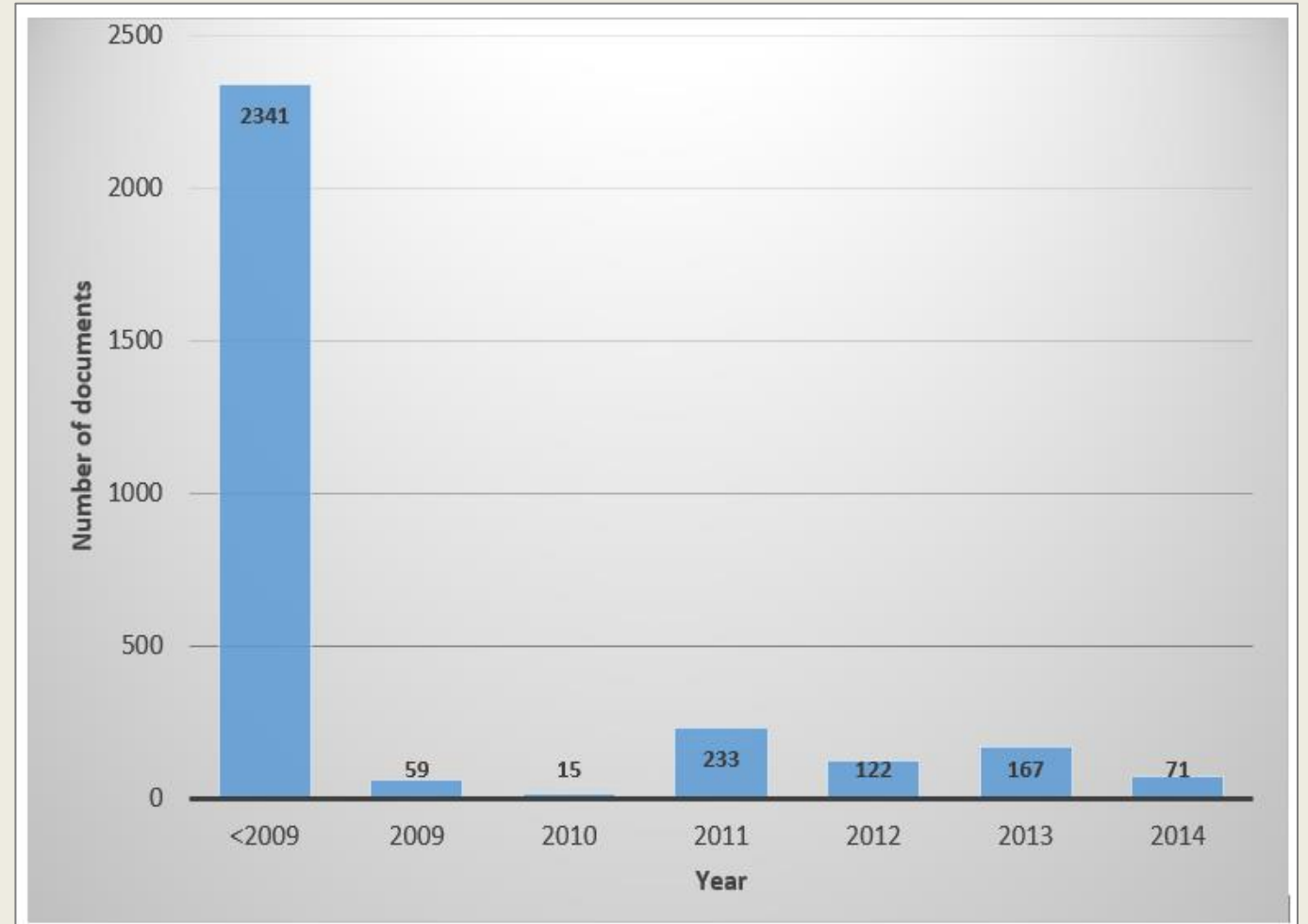
## Accessing to Scientific Contents

- The lack of budget in research and education institutions
  - The big challenge to provide international scientific contents
  - The acquisition model is not associated with the academy of sciences of the country
  - UEM is the national coordinator of the consortium of universities
- The effort of UEM
  - Enabled through the INASP program (since 2001)
  - INASP negotiate with international publishers the access to journals and books (without charge or at low cost price)
  - Mozambican institutions of high education access about 23 000 titles (90-10)
  - other organizations (specific areas ): HINARI, for biomedical, OARE, in the environmental field and AGORA for agriculture



# OA in Mozambique: SABER Repository

Institution	# Documents
Eduardo Mondlane University	2941
Higher Institute of Science and Technology of Mozambique	0
Judicial Training Centre	20
Pedagogical University	9
Polytechnic University	38
University of St. Thomas of Mozambique	0



# OA Journals in Mozambique

## "Revista Científica da UEM" (RC-UEM)

- UEM began in 2010 with the process of implementing the RC-UEM
- The results of national scientific production
  - involving UEM academic
  - research community and other institutions of higher education and research
- Biannual journal attempts to cover specific areas
- The first edition (Number 0) was launched in 2012 with two series
  - "Series of Letters and Social Sciences": 5 articles
  - "Series of Sciences Biomedical and Public Health ": 4 articles.
  - in 2014 was launched another series (Number 1): the "Science of Education Series" with 7 papers.

# Conclusions

- MoRENet in Mozambique is still in its implementation phase.
- The deployment of MoRENet could result in an increased collaboration on OA initiatives developed by UEM
  - allowing the expansion of the repository SABER and of the scientific journal RC-UEM
- With the creation of SABER launched in 2009
  - It is important to gain political support to the OA initiative
  - define policies and mandates
- Intellectual property protection
- The strategy launched by the MST exists but remains to be implemented, being one of the barriers to the growth of the OA initiative