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Open Access Policies and Mandates of SAARC Nations: An Analysis of ROARMAP

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The present study highlights the current scenario of open access mandates and policies with respect to SAARC nations. ROARMAP (Registry of Open Access Repository Mandates and Policies) tool is used to find out the current position of Open access adoption in these countries. The results indicated that research organisation of these nations have major share in adoption and implementation of open access mandates. The study also finds that only India and Pakistan are represented in ROARMAP while other south Asian countries have negligible contribution in ROARMAP.

Keyword: *Open access, ROARMAP, HORIZON2020, Open access mandates, E-prints.*

1 INTRODUCTION

To circulate and make accessible new and innovative ideas to wider research community only possible with the help of open access movement or initiative. ROARMAP Stands for Registry of Open Access Repository Mandates and Policies. ROARMAP is an international searchable registry depicting the growth of open access mandates and policies. ROARMAP is developed by University of Southampton using Eprints3 software. Open access mandates and policies developed by the Universities and research institutions and funding bodies with regard to uploading of their peer-reviewed articles in open access repositories.

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Table1: Continent wise Distributions of Open Access Mandates and Policies

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Europe (622)	Eastern Europe (60)	Belarus	4
		Bulgaria	1
		Czech Republic	5
		Hungary	4
		Poland	7
		Republic of Moldova	9
		Romania	1
		Russian Federation	8
		Slovakia	1
		Ukraine	20
	Northern Europe (218)	Denmark	9
		Estonia	3
		Finland	33
		Iceland	5
		Ireland	12
		Latvia	2
		Lithuania	11
		Norway	11
		Sweden	12
		United Kingdom of Britain and North Ireland	120
	Southern Europe (181)	Croatia	2
		Greece	5
		Italy	28
		Malta	1
		Portugal	27
		Serbia	11
		Slovenia	8
		Spain	42
		Turkey	57
	Western Europe (163)	Austria	14
		Belgium	19
		France	23
		Germany	75
		Luxembourg	1
		Netherlands	12
		Switzerland	19
		Australia	33
Oceania (40)	Australia and New Zealand (40)	New Zealand	7

From the Table1, it is clearly indicated that European countries (622) have maximum open access mandates and policies followed by Americas (226), Asia (75), Oceania (40) and Africa (33). The main dominance of European countries in adoption of open access policies is due to the origin of open access in Europe. This fact gives impetus for further development of the open access in Europe and America. Fig2: depicts the quarterly growth of policies worldwide up to 2019. Similarly, Fig3: represents the growth (in terms of number) of open access policies worldwide by policymaker. Here policymaker includes:

- Funder
- Research Organisation (e.g.University or research institution)
- Funder and Research Organisation

2 WORLDWIDE GROWTH SCENARIO OF OPEN ACCESS MANDATES AND POLICIES

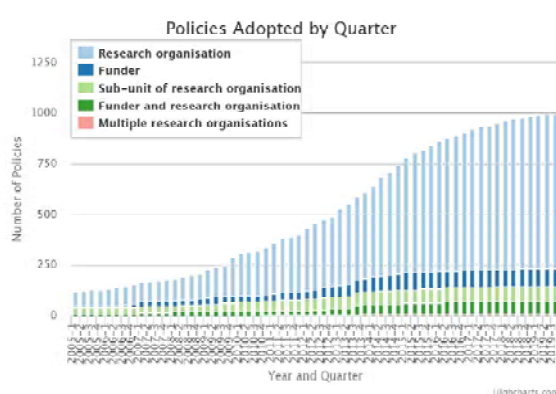


Fig 2: Worldwide Growth Scenario of Open Access Mandates and Policies as visualised in ROARMAP

- Multiple research organisations
- Subunit of research organisations (e.g. faculty, department and school)

From the fig2, it is clearly indicated that research organisation have maximum share in developing open access policies. The reason behind this fact is that in all country research Organisations and Universities are the major funding agencies to promote and carry out research. Therefore, maximum share of open access policies are developed by them. Further depicted from the fig2 that research organisation have 72% share followed by funder (10%), research organisation subunit (9%), funder and research organisation (7%) and multiple research organisation(1%). The second part of the fig4.2 depicts the position of policymakers in terms of Green and Gold criteria adopted for deposit of items. For deposit of item, three parameters are adopted by the policymakers i.e., required, requested and unspecified. On these parameters, policymakers' contribution in deposit of item is calculated.

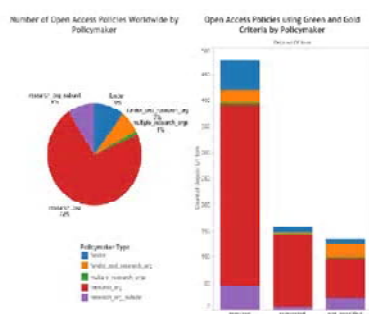


Fig 3: Number of Open Access Policies Worldwide by Policymaker and Open Access Policies using Green and Gold Criteria by Policymaker

3 GROWTH OF ASIAN COUNTRIES OPEN ACCESS MANDATES AND POLICIES

ROARMAP for Asian continent shows that Eastern Asia and Southern-Eastern Asia are leading in adoption and following the open access mandates and policies with share of (25) and (26) followed by Southern Asia (19), Western Asia (4) and Central Asia (1). This highlights the fact that India is far ahead in disseminating the message of open access than its neighbouring countries like Pakistan, Sri Lanka, Bangladesh, Nepal and Afghanistan. Except from India and Pakistan, no other South Asian countries have open access mandates and policies till date. Fig4: depicts the quarterly growth of open access mandates and policies in Asian Continent upto 2019.

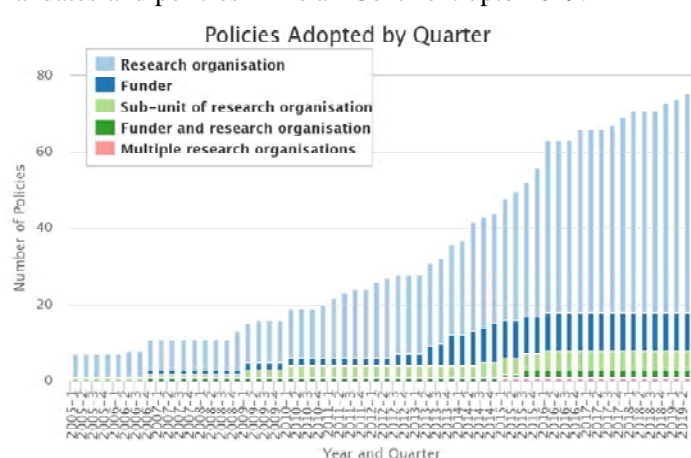


Fig 4: Representing the growth of Asian Countries Open Access Mandates and Policies as visualised in ROARMAP

4 ASIAN CONTINENT OPEN ACCESS MANDATES AND POLICIES ALIGNMENT TO THE HORIZON 2020

Further Fig5, highlights the alignment of Open access policies and mandates of Asian continent with the Horizon 2020 policy. Horizon 2020 is the European Union largest research and innovation programme. This programme has €80 billion funding support available for seven years (2014-2020). Horizon 2020 aimed at promoting new innovations, discoveries and world-firsts in the European Union. (<https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>)

Horizon 2020 considered the fact that development of the society only happened when there is hassle free scientific communication and this results into the building up of new knowledge and improvement of the earlier work done. Horizon 2020 promotes open access to scientific publications which results from the funds supported by it and documented this under Article 29.2 of the Model Grant Agreement which sets out detailed legal requirements on open access.

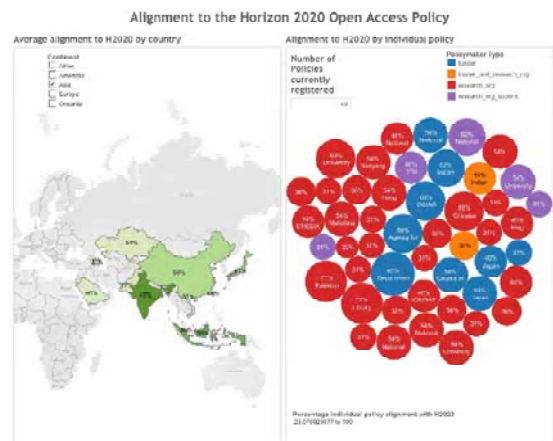


Fig 5: Asian Continent Open Access Mandates and Policies Alignment to the Horizon 2020 Open Access Policy

The present chapter is dedicated to study the state of affairs of development of open access in South Asia. Southern Asia is represented by India and Pakistan in ROARMAP. India has (16) and Pakistan (2) open access mandates and policies as registered in ROARMAP. Fig6: depicts the quarterly growth of open access mandates and policies in South Asia upto 2016.



Fig 6: Representing the growth of South Asian Countries Open Access Mandates and Policies as visualised in ROARMAP

41 INDIA

Fig7: visualises the quarterly growth of open access mandates and policies in India by research organizations, funder, sub-unit of research organisation, funder and research organization and multiple research organisations towards upto 2015.

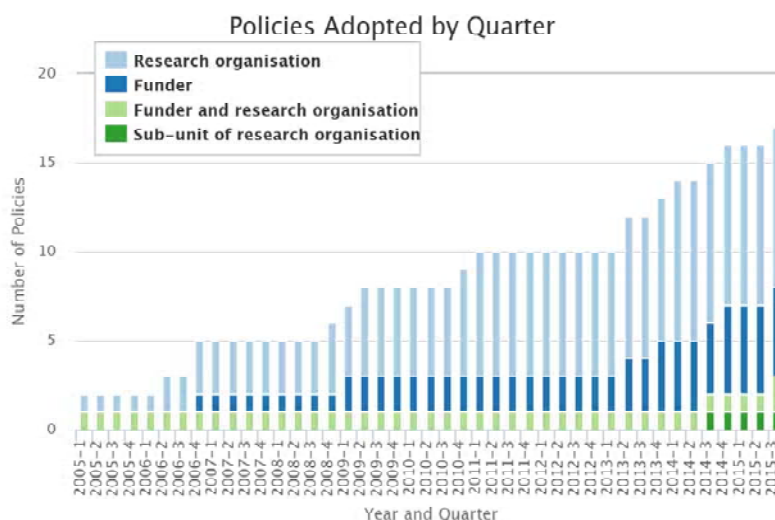


Fig7: Representing the Quarterly growth of Open Access Mandates and Policies in India as indexed in ROARMAP

In context of India (17) open access mandates and policies are defined and implemented by different Universities, Research organisations, funders, funders and research organisations and sub-unit of research organisations. The main contributors in the ROARMAP are mentioned below:

- Bharatidasan University
- CGIAR
- Council of Scientific and Industrial Research
- Council of Scientific and Industrial Research (India)
- Department of Biotechnology and Department of science and Technology, Ministry of Science & Technology
- ICRISAT International Crops Research Institute for the Semi-Arid Tropics
- IITH Indian Institute of Technology, Hyderabad
- Indian Council of Agricultural Research
- Indian Institute of Horticultural Research, Bengaluru
- Institutional Repository@AIKTC
- M S University
- Madurai Kamaraj University
- Mahatma Gandhi University
- National Institute of Oceanography
- National Institute of Technology, Rourkela
- National Knowledge Commission
- Society of Open Science

Alignment of open access mandates and policies of India with each element of Horizon 2020 policy is depicted in fig8. The fig also highlights the policymaker percentage contribution towards Horizon 2020. Open access policy of Department of Biotechnology and Department of Science and Technology is 85% aligned with H2020 followed by CGIAR 69% and Indian Council of Agricultural Research 62%.

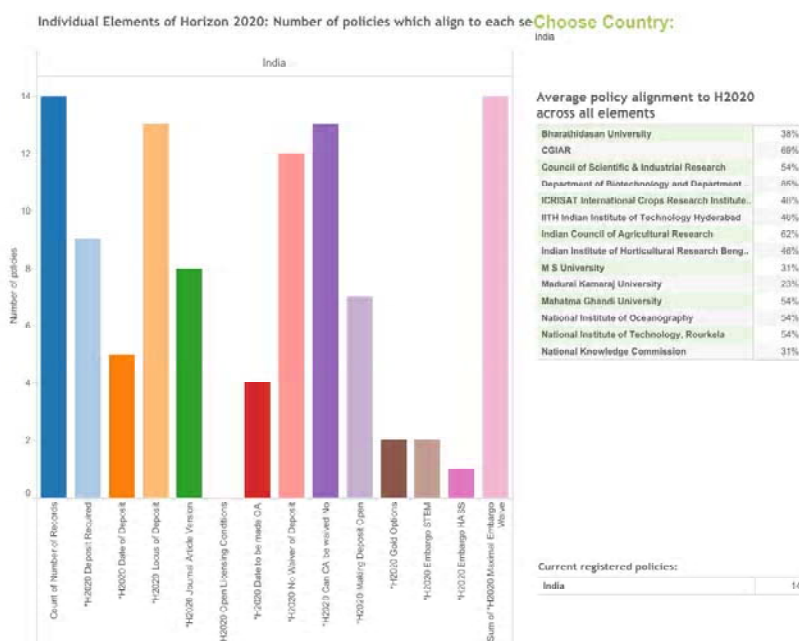


Fig 8: Individual Elements of Horizon 2020: Number of Policies which align to each section of the H 2020 Policy: India

42 PAKISTAN

Pakistan has two open access mandates and policies indexed in ROARMAP. Research organization namely Society for Gene and Cell Therapy and Advanced Educational Institute & Research Centre are the two-research organisation that defined this policy. These policies were implemented in the year of 2015 and 2016. After 2016, there is no addition of policy in ROARMAP. Fig9visualise the quarterly growth of open access mandates and policies in Pakistan as indexed in ROARMAP.



Fig 9: Representing the Quarterly growth of Open Access Mandates and Policies in Pakistan as indexed in ROARMAP

Fig10 highlights the alignment of open access policy with Horizon 2020 policy. It is clear from the fig that the open access policy of Pakistan Society for Gene and Cell Therapy is 77% aligned with elements of Horizon 2020.

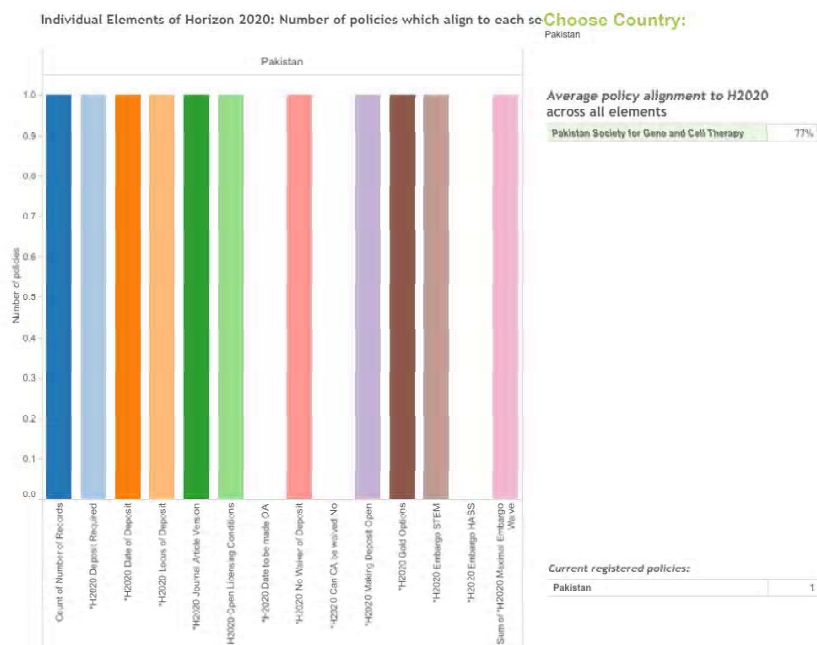


Fig10: Individual Elements of Horizon 2020: Number of Policies which align to each section of the H2020 Policy: Pakistan

5 CONCLUSION

In the modern era of information and technology, open access phenomenon has emerged as boon for scholarly communication at global level. Repositories are organised collection of valuable information for research community. The analysis presents the ROARMAP criteria which describe the latest adoption of SAARC nations. From the Continent wise distribution, it cleared that European countries have maximum open access mandates and policies followed by Americas and Asia. It is found that research organisations have major contribution to develop open access policies. The assessment of Asian continent viewed that Eastern Asia and Southern-Eastern Asia are premier in adoption and following the open access mandates and policies and further in South Asian countries, India is major developer of open access policies followed by only nation Pakistan.

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