The current landscape of the Open Science Initiative in the ASEAN region

R. Mariano, R. Alenzuela, and J. Yap

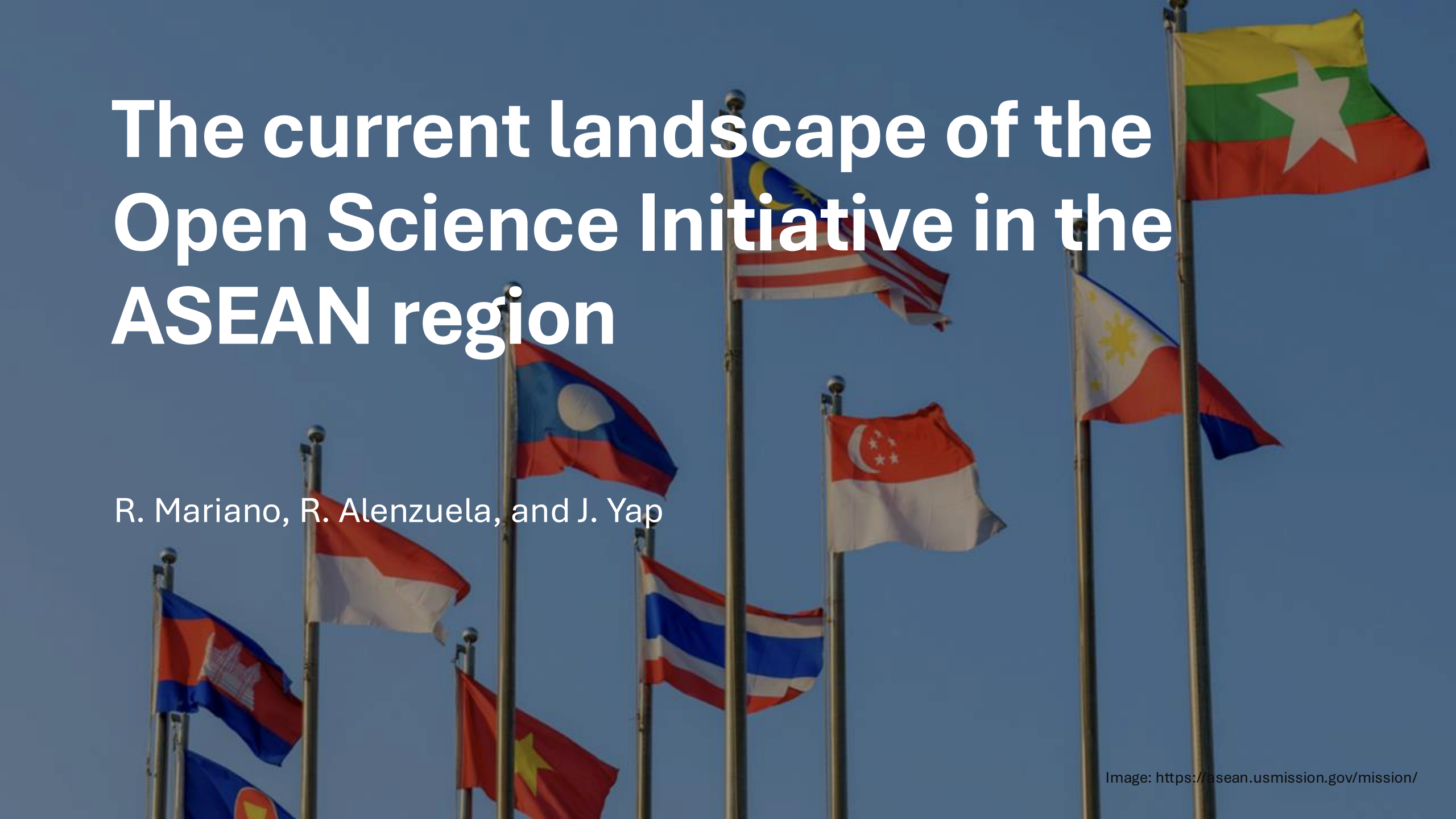


Image: https://asean.usmission.gov/mission/

Outline

Background

Objectives and Methodology

Studies and Reports Analysis

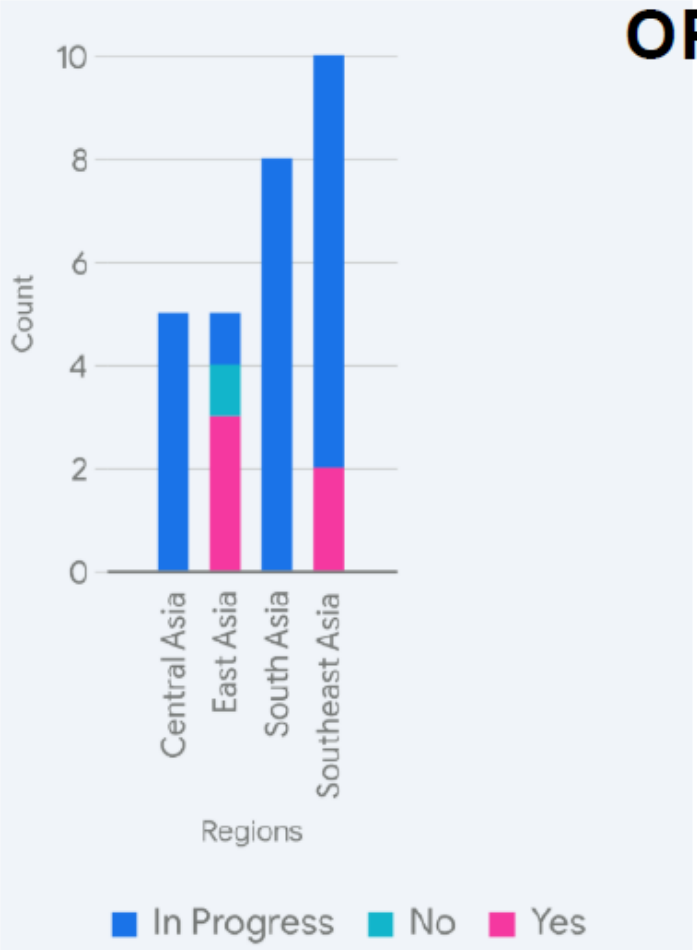
Themes

Gaps

Background

- Open Science ecosystem in Europe
- African Union efforts
  - African Open Science Cloud
- Open Science across Asia
- ASEAN values and aims
- ASEAN plan of action on Science, Technology and Innovation 2019-2025 and 2026-2035

OPEN SCIENCE FRAMEWORKS



- Momentum is growing in Asia
- Central Asia shows signs of coordinated development, actively emerging along with AI
- Asymmetric development within East Asia
- Political or institutional barriers persist in East & Southeast Asia; BUT some aspects of Open Science are being implemented

Framework for Open Science Across Asia

ASEAN aims and values

Political-Security | Economic | Socio-Cultural

Peace and stability

Economic growth and development

Intergovernmental collaboration

Emphasize sovereignty, non-interference and mutual respect for independence

Consensus-based decision-making respecting national autonomy

ASEAN plan of action on Science, Technology and Innovation 2019-2025

Develop

Develop resource databases and networks for information sharing (e.g. food science and marine science)

Increase

Increase IT use for rapid data exchange and dissemination:

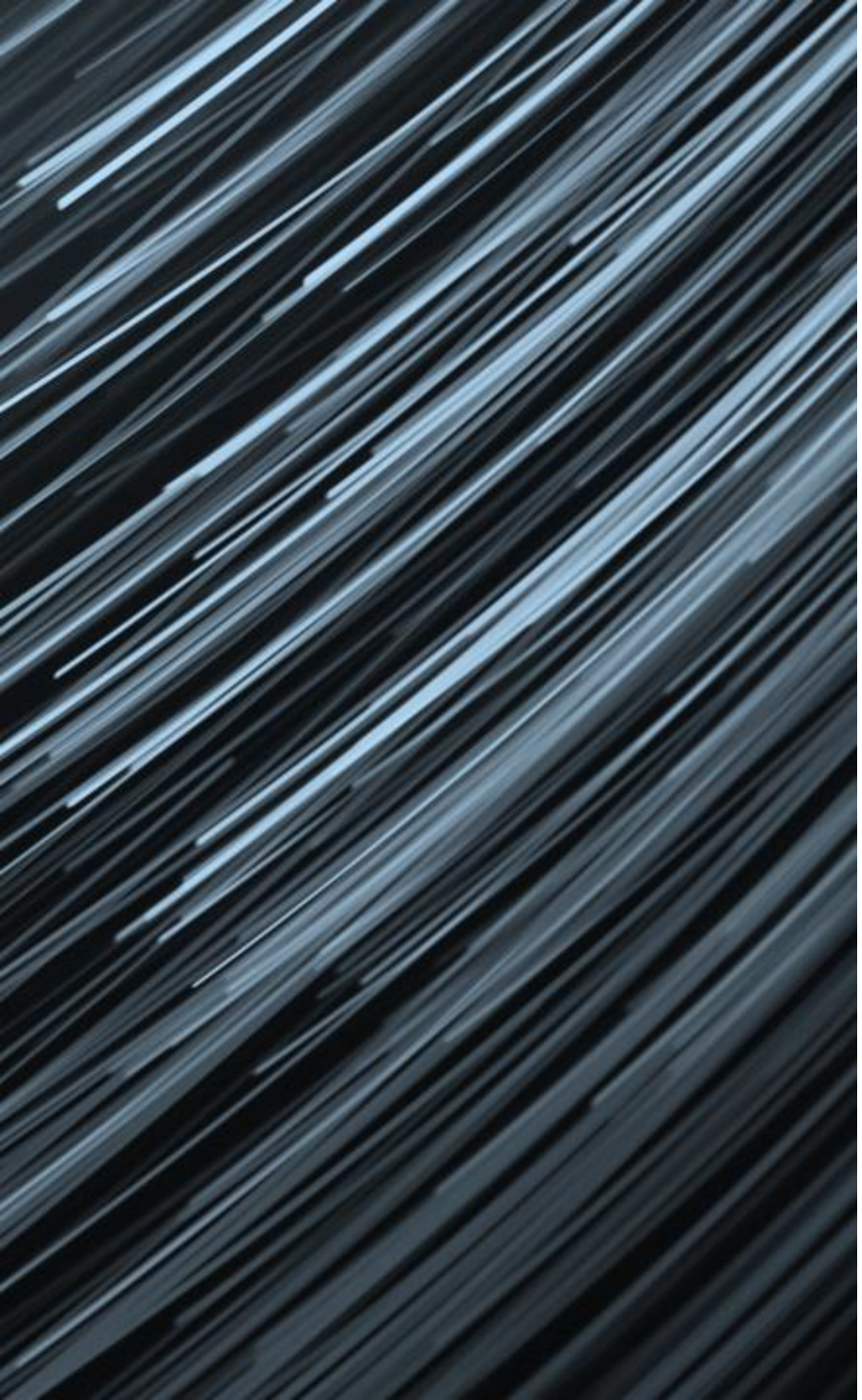
- Weather forecasts and warnings
- Seismological information
- Client-oriented services

Promote

Promote studies and coordination for knowledge exchange

Promote

Promote open platforms (e.g. microelectronics and information technology)



ASEAN plan of action on Science, Technology and Innovation 2026-2035

Stimulate adoption of Emerging Technologies

IoT, big data, cloud computing, AI, quantum tech

Ethical Research Practices and Data Governance

Harmonize data governance policies across ASEAN

Cross-border knowledge sharing

Knowledge exchange on emerging technologies

Promote blue economy research

Increase annual STI publications and partnerships for OA platforms

AUN ASEAN University Network

- Libraries of ASEAN University Network (AUNILO) open repositories and discovery services

RQs

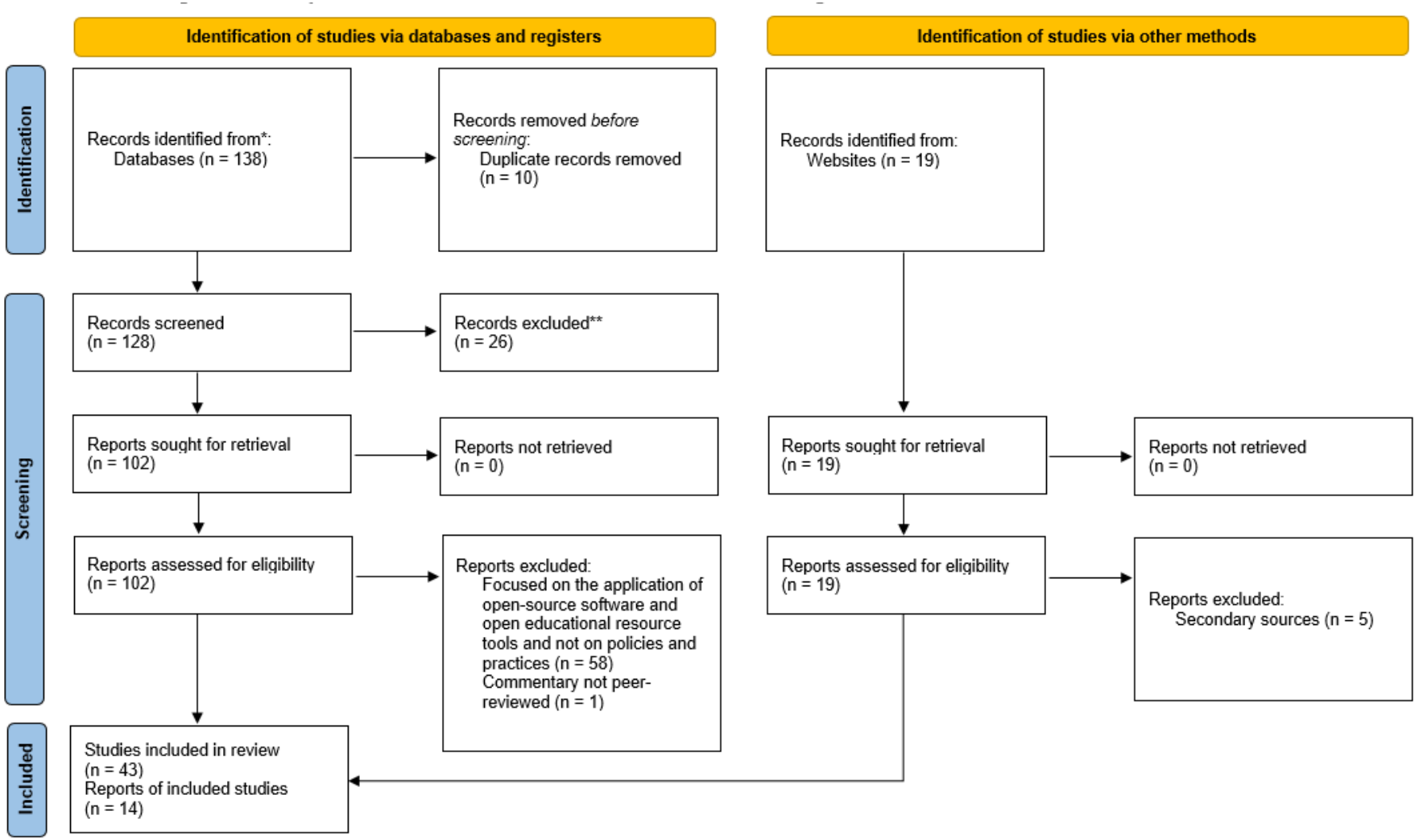
How are ASEAN member states reflecting on the UNESCO framework for Open Science?

What are the current regional developments in ASEAN open science?

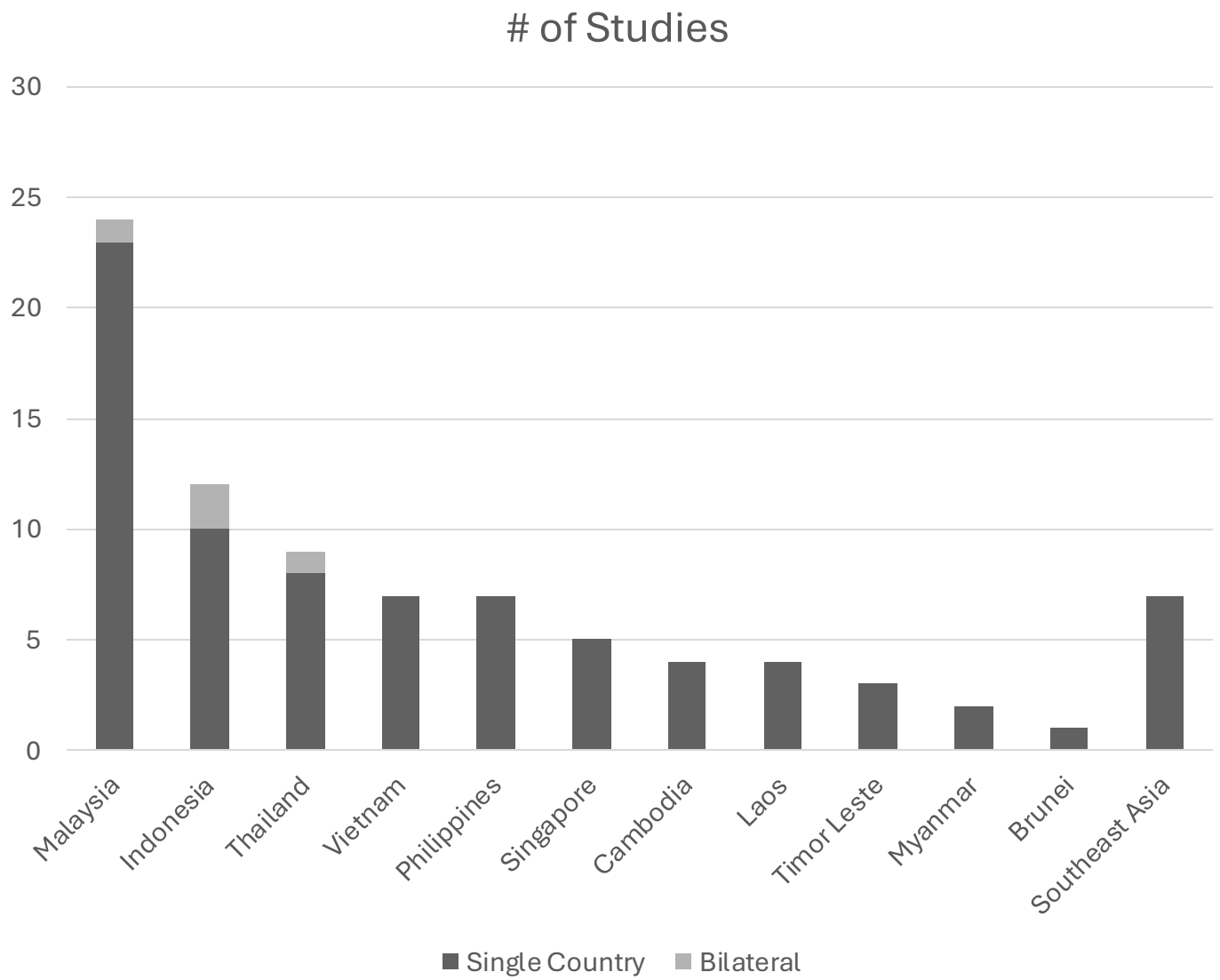
Methodology

- Exploratory review of scholarly and grey literature

PRISMA diagram



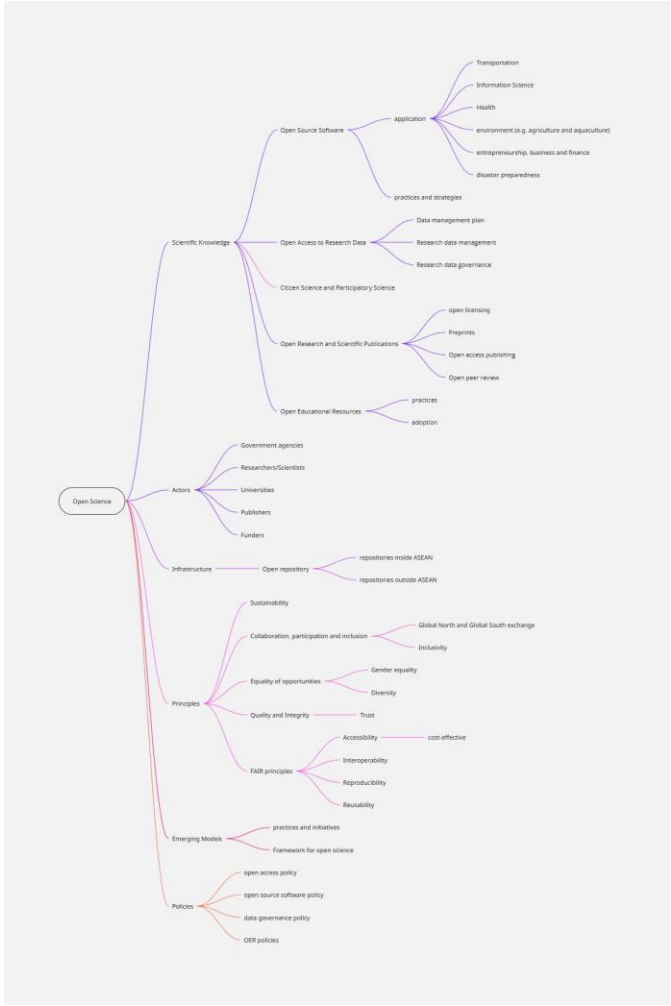
ASEAN open science studies



ASEAN open science reports

- Most documents and plans do not explicitly align with UNESCO recommendations
- However, the existing national strategies include certain components of open science (e.g. open government, open data, open access, open innovation, infrastructure and capacity building)
- Emerging national Open Science framework in Malaysia: ASEAN's most well-structured model
- Fragmented but widespread adoption of Open Data infrastructures
- ASEAN-wide potential for harmonization

Thematic Map



Infrastructure, Frameworks and Alliances

- Connectivity challenges
- Digital inequality
- Technological infrastructure development issues
- Data Security challenges
- Lack of political commitment of asean member states

Infrastructure, Frameworks and Alliances

- Malaysian Open Science Platform (MOSP)
- Indonesian INArxiv – Directory of Open Access Preprint Repositories (closed in 2020 due to funding constraints)
- Open Source Information Systems (OSIS)
- Malaysian Open Science Alliance
- MySTIE Framework
- Southeast Asia Network for Open Science (SEANOS)

Data Governance

- Need for Cultural Shift on Data Sharing
  - Fear of data misuse by others
  - Risk of losing publication opportunities
  - Compliance often occurs because funders require it
  - Mistrust to data security
- Lack of clear mandates and absence of capacity building trainings

EDIA in Open Science

- Diversity
  - Leverage local and indigenous knowledge
  - Gender diversity in authorship
- Equity
  - Preprint movement and diamond open publishing as alternative publishing routes to mitigate APC-related inequities
- Sustainability in RDM strategies
- Accessibility
  - Cost effectiveness og OS ecosystem reduce barriers to to OA and OER adoption

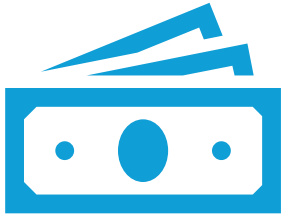
Global North-South Exchange

- Organizations outside ASEAN
  - European University Association (EUA)
  - EU Horizon funded research
  - US university partnership: University of Buffalo-Singapore Institute of Management
- Infrastructure outside ASEAN
  - India’s Krishikosh – agricultural digital repository
  - Google Earth Engine
  - European Space Agency
  - Copernicus Open Access Hub
- Impact factors and Rankings still influence ASEAN researchers

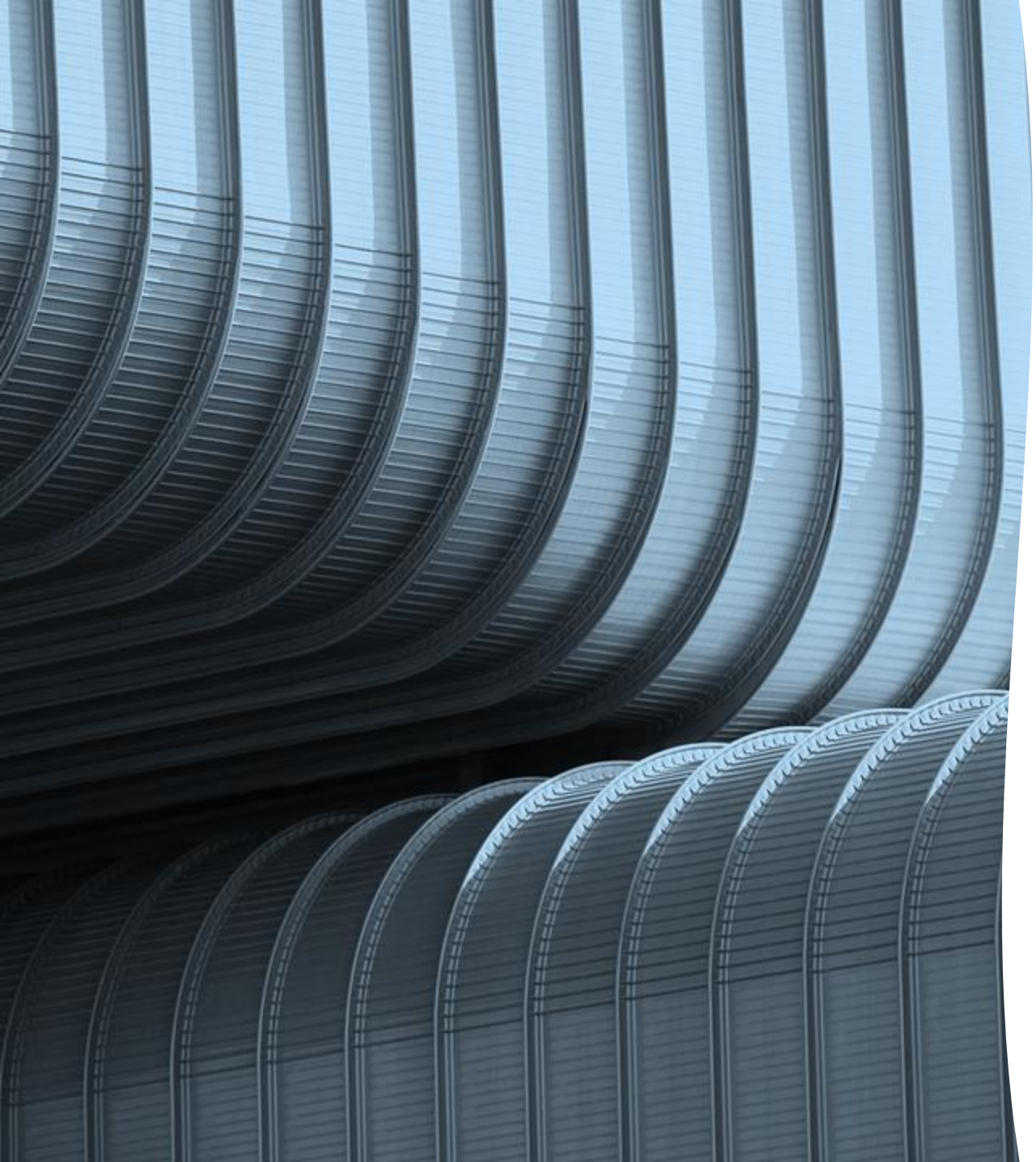
Opportunities

Trainings and co-learning mechanisms

Institutional efforts to share benefits



Incentives for stakeholders and researchers



Initial Gaps

Need for clear policy actions to guide open science implementations at all levels: institutional, national and regional settings.

Implicit use of «open science» concept in studies and reports

Data stewardship services as a fundamental support services for ASEAN universities and research institutes.

Heavy focus on STEM and Natural Science with limited attention to Social Sciences, Humanities, and Cultural studies

Further Research

Science and Knowledge diplomacy

Shared resources = Shared progress

ASEAN must invest in policy alignment, infrastructure, and capacity building to make Open Science sustainable.

References

- Alenzuela, R. (2025). Open Science across Asia: a comparative analysis of frameworks and initiatives [PowerPoint slides].
- ASEAN (2019). *About ASEAN*. https://asean.org/what-we-do#asean-aims
- ASEAN (2025). Plan of action on Science, Technology and Innovation 2019-2025 and 2026-2035
- AUNILO. (2025). Libraries of ASEAN University Network