

PENGERAK PERUBAHAN CHANGEMAKER

Evidence-based



Independent



Society-centric



values technology

Influential



Action-oriented



LAPORAN TAHUNAN 2023 ANNUAL REPORT

COVER DESIGN CONCEPT



The cover image tells the story of a group of Malaysians brimming with hope and excitement for the future, shaped by advanced STIE achievements and fostered by humanity-centric action and values. The image was AI-generated and combined with our designer's creative touch to produce a unique and impactful visual for our annual report.

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Tell Me More



OUR MISSION

- 1 To be a Thought Leader on STIE, nationally and internationally
- 2 To be the Advisory Body on national STIE policy and related matters
- 3 To be the Strategic Partner in STIE in Malaysia and global
- 4 To advocate and make STIE a basis for economic development and societal well-being, locally and globally
- 5 To engage the public through STIE communication

OUR VISION

A Thought Leader in Science, Technology, Innovation and Economy (STIE) towards a progressive, harmonious, prosperous, and sustainable society, nationally and internationally.

OUR GOALS

- 1 To become an independent Thought Leader on STIE, nationally and internationally
- 2 To become the trusted Advisory Body on national STIE policy and related matters
- 3 To become an influential Strategic Partner in STIE in Malaysia and globally
- 4 To become an impactful advocate and make STI a basis for economic development and societal well-being, locally and globally
- 5 To become an effective STIE communicator that attracts public engagement



OUR PHILOSOPHY & VALUES



Society-based
placing STIE for
societal benefits



Credible
reliable, impactful,
and timely



Independent
track and provide
input on systemic
issues without fear or
favour



Evidence-based
ensure what we do is
informed by the best
available knowledge



Network-centric
dynamic Knowledge
Convergence Platform
(as an organisation
that connects people
together leveraging on
the high trust factor of
its stakeholders)



Transparent
open engagement
and process



Impactful
deploy new and better
ways for impactful
outcome



Action-oriented
turn initiatives into
workable solutions
that bring about
sustainable change

OUR STRATEGIES

INDEPENDENT

Systematise ASM as an independent & impactful trailblazer in STIE

INFLUENTIAL

Expanding ASM's influence as a trusted partner at federal, state & global level

SUSTAINABLE

Securing sustainable resources for a progressive organisation towards supporting national interest

AGILE

Enhancing organisational agility by practising good governance & professionalism

NEXUS

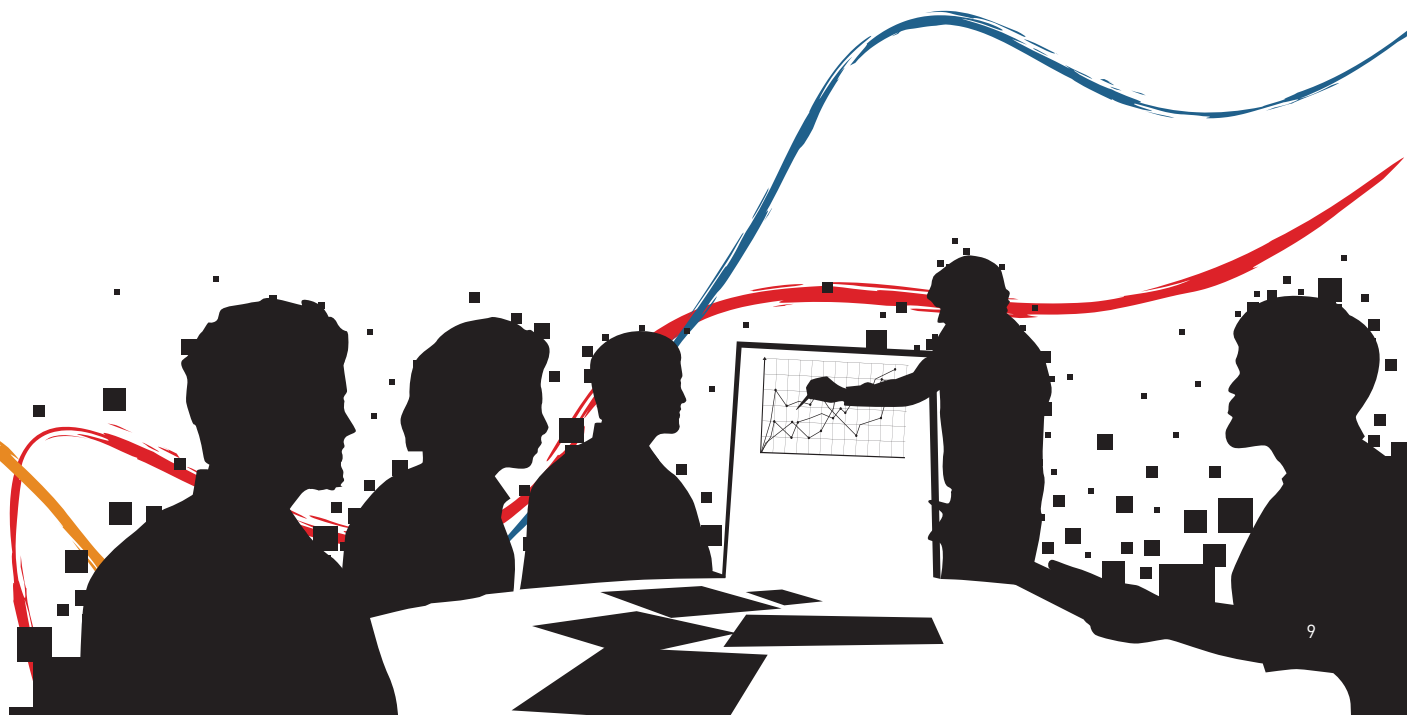
Positioning ASM as preferred point of reference in all STIE matters

PROPONENT

Driving effective advocacy towards future-proof socio-economic sectors

CONVENE

Establishing effective science communication platforms with stakeholders at all levels



12 ACTION PLANS



To maximise experts' involvement throughout national STIE planning in generating ideas, thoughts and knowledge



To intensify collaborations in strategic areas with sister academies & regional platforms



To undertake demonstration projects that can translate new ideas into action and build capacity with strategic partners to ensure sustainability



To upgrade organisational practices to adhere to national accreditation and international best practices



To assess & monitor organisational performance internally and externally to meet measurable outcomes and impact



To co-create high impact STIE initiatives at localities for transformation of socio-economic sectors



To systematise continuous monitoring & evaluation of STIE ecosystem



To set up a mechanism within ASM to generate revenue and ensure sustainable resources



To imprint multipotentialite qualities among our talent by nurturing high level competencies and capabilities in multiple subjects



To enhance competency & skills of talent for future readiness through foresighting with inclusive participation from the quadruple helix



To support career advancement of young researchers towards instilling the “World Class, Outstanding, Winnable” (WOW) mindset



To create the ecosystem of open science, open access and open innovation through collaborative platforms for disruptive innovation

Foreword by President



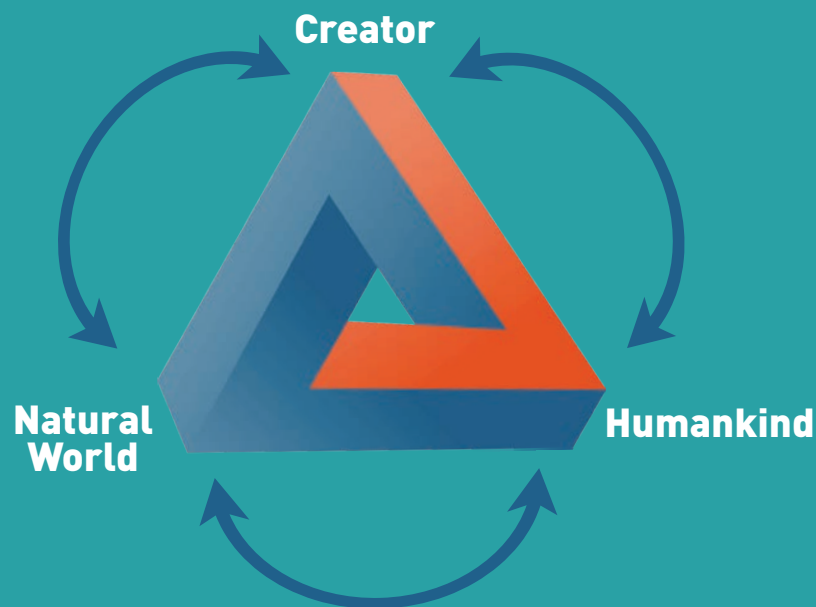
Embracing Post-Normal Science for a Sustainable Future

The Academy of Sciences Malaysia (ASM) continues to advance its role as the national Changemaker in STIE. Grounded on evidence-based analysis and synthesis, its insights increasingly play a pivotal function in shaping national policies and fostering innovation for social and economic development. Promoting an engagement process that is open, participatory, and inclusive has nurtured the creation of a collaborative national policy and strategy ecosystem that builds trust and mutual respect among stakeholders.

As the sixth President, I am honoured to be able to further strengthen the firm foundation established by previous generations of ASM leaders. I am also privileged to concurrently serve as the Science, Technology and Innovation Advisor (STI) to the Prime Minister and Nation. Given this twin appointment, more opportunities will be opened to drive purposeful change that may positively impact society.

Powerful forces are accelerating change across all human institutions and systems. These forces annul basic assumptions and accepted norms that underlie modern societies and civilisations. As these systems begin to fracture, human societies face the stark prospect of living in post-normal times. Complexity, chaos and contradictions characterise this emerging era. New norms will emerge to replace those that have dominated the past. The science community must rise to the challenge of discovering the appropriate norms to build a firmer foundation for a knowledge system that may bring about a more sustainable and prosperous future for humankind.

The science and technology enterprise is centred on the idea of knowledge as a public good. Post-normal times will need a post-normal science that is not conceived as purely empirical, deterministic and materialistic, devoid of human sentiment and stripped of moral and ethical consideration. If scientific knowledge is to serve humanity better, it urgently needs to be integrated with other systems of knowledge to bring about a holistic system of knowledge that harmoniously links natural phenomena with human values and purpose.



In post-normal times, as the world grapples with complexity, chaos and contradictions, science must become instrumental in creating value for humanity. This calls for a post-normal science that embraces a humanity-centric model that also explores the interconnectedness between the **Creator**, the **natural world** and **humankind**. As such, in 2023, ASM stakeholder engagements were elevated a few notches. These engagements go a long way for us to better understand societal motivations and forge transformative actions to strengthen our science, technology, innovation and economy (STIE) ecosystem to become one that is robust and sustainable.

We cannot resolve the challenges of post-normal times with existing tools. They require new modes of thinking and new ways of doing things. Mission-oriented research and innovation should be adopted as a key problem-solving approach to accelerate innovation-led growth. In particular, collaboration between the public and private sectors and civil society is essential to realising desired outcomes from applying new knowledge.

Quoting Mazzucato,

“We must create more effective interfaces with innovations across the whole of society; rethink how policies are designed; change how intellectual property regimes are governed; and use R&D to distribute intelligence across academia, government, business and civil society. This means restoring public purpose in policies to create tangible benefits for citizens and setting goals that matter to people-driven by public-interest considerations rather than profit.”

(Mariana Mazzucato, Mission Economy, 2020)

The ASM Expert Network is a powerful repository of knowledge, expertise, and experience that provides a deep understanding of the country, its citizens, and its challenges. The 1000-plus experts, encompassing various disciplines and specialisations in natural sciences and humanities, have collectively become a dynamic hub for creativity, innovation, and problem-solving. Complex issues and challenges are being addressed by tapping this rich treasury of human talent.

This report highlights several worthy examples of ASM’s activities and projects during the year. In facing a future fraught with uncertainties and complexities, proactively preparing the citizens through education and learning is a top priority. ASM conducted a national study on “A New Horizon for Science, Technology, and Innovation (NHSTI): A Strategy to Enhance Higher Education in Malaysia”, producing a position paper evaluating the effects of both current and upcoming disruptive technologies on higher education core processes, specifically in teaching and learning (T&L), research and innovation (R&I), and governance. The findings have been well received by the Ministry of Higher Education (MOHE), which commissioned the study, and other public and private sector organisations.

In extending our scientific reach domestically and globally, we have made concerted efforts to strengthen our open innovation ecosystem. The Research, Development, Commercialisation, Innovation and Economy (RDCIE) framework developed reinforces the Malaysia MADANI concept by advocating democratic good governance, sustainable development, and inclusivity. ASM also champions the Malaysia Open Science Platform (MOSP), which aims to make findings from scientific research and related data accessible to all. The democratisation of knowledge in scientific research will bridge the gap between research, innovation, and commercialisation, thereby enhancing the nation's innovation capabilities. Collaboration across disciplines and sectors will be promoted and encouraged, making research outcomes and impacts more realisable even with constrained funding levels.

ASM actively engages with the global community to address serious threats to human life and the natural environment. We hosted the Global Knowledge Dialogue (GKD) on behalf of the International Science Council (ISC), which attracted more than 140 participants from 30 countries. In my opening remarks, I invoked ideas based on post-normal times to highlight the weakening of contemporary knowledge systems, moving on to stress the urgent need to integrate human knowledge, particularly by giving due recognition to indigenous knowledge.



Exchanging tokens of appreciation with the ISC President, Sir Peter Gluckman, witnessed by YB Datuk Arthur Joseph Kurup (Deputy Minister, MOSTI) and Professor Frances Separovic (Foreign Secretary, Australian Academy of Science) during the GKD



ASM President and Professor Dato' Dr Aileen Tan Shau Hwai FASc, Chair of ASM SIG on Social Innovation, listened to Pak Su Mehad, a local fisherman in Langkawi, on his extensive indigenous knowledge on horseshoe crab

During the year, I had the privilege of visiting several states nationwide to witness how science is being put to work at the local level. The picture emerges that our future is bright if we can harness science to benefit all segments of society. Discoveries that have great potential to change lives for the better are being made. What we need is a more effective STIE ecosystem that takes scientific research results all the way to actual application on the ground. This is still a work in progress, given that reward and recognition for scientists are still largely based on producing outputs, such as academic publications, and not on beneficial outcomes and impacts.



This annual report tells stories of how we work together to formulate strategic responses based on strong evidence and mindful analysis. Through the stories narrated, the report highlights the importance of integrating diverse perspectives and mobilising knowledgeable experts towards a common purpose. We hope it reflects the spirit of ASM's Expert Network and its partners. Together, we are undertaking a journey that will continue to challenge us, yet we remain fully committed to fulfilling our obligations to the country and society, as a whole.

Thank you.

**Academician Datuk Dr Tengku
Mohd Azzman Shariffadeen FASc**

From the CEO's Office



This year, improving relationships and establishing ASM's visibility and influence among stakeholders took centre stage as we pursued positioning ASM as a Thought Leader and Changemaker.

Expansion of Collaboration

ASM believes that the development of STIE must be felt and benefited by the *rakyat*. Hence, we embarked on a vision to go local and expand the work of ASM to the states. The official visits of the President commenced with Sabah, Sarawak, Kedah, Kelantan, Terengganu and Pulau Pinang. These visits provided much learning to ASM as we got the opportunity to engage with the key local players and understand the local communities' needs and challenges. It provided opportunities for state governments to embrace science and technology in moving the states' economic agenda forward and identify potential areas to collaborate with ASM.

ASM also carried out roadshows at Kuching, Sarawak and Kuala Terengganu, Terengganu in collaboration with the ASM Sarawak Chapter and ASM East Coast Chapter, respectively. The programme aimed to introduce ASM and encourage more people to participate and contribute to ASM activities and programmes.

Besides this, ASM had signed two MoUs, namely with the Turkish Academy of Sciences (TÜBA) and eWorldwideGroup (eWWG). These MoUs were aimed to build strategic cooperation across countries to share STIE leadership thinking, as well as 10-10 MySTIE strategy and approaches to build the STIE ecosystem.

Talent Sustainability

Navigating through unprecedented challenges had become the new normal. The advancement of technology and development of applications and tools are shaping our daily routines, the way we work, collaborate, and communicate. Thus, ASM Management is determined to accelerate the preparedness of the ASM team in embracing these developments positively for a progressive and sustainable change within the organisation.

ASM staff is the backbone of ASM in delivering various studies and programmes as well as running the management and keeping the governance of the organisation intact. However, talent-drain had remained a major concern for ASM. The year-end recorded vacancies of 14 positions despite having recruited 19 new staff in 2023. Retaining talent in ASM is crucial as tacit knowledge, institutional values and histories are important for ASM to sustain and continue serving the nation.

ASM Management organised various staff engagement activities such as in-house training programmes, *Kongsi Dengar* – a sharing session by staff, birthday celebrations, and World Day celebrations particularly Women's Day, Earth Day, Men's day and Labour Day. ASM also continued supporting the *Kelab Sukan dan Kebajikan Kakitangan* (KSKK-ASM) as the club organises various sports and social activities for staff besides welfare support.

The year 2023 marked a significant milestone in ASM's growth with ASM Council adopting a systemic approach in acknowledging and rewarding staff for their dedication and contribution to ASM. The inaugural APRESIASI-ASM held in December 2023 recognised a total of 33 staff. *The Anugerah Perkhidmatan Cemerlang* (APC-ASM) was awarded to one staff member from the

Management & Professional Group and one staff from the Support Group. Whereas the *Anugerah Pegawai Berprestasi Tinggi* (APT-ASM) was awarded to nine staff for their excellent performance while the *Anugerah Khidmat Bakti* (AKB-ASM) was awarded to 22 staff for their loyalty to ASM.

Digitalisation at ASM

In 2023, *Jabatan Akauntan Negara Malaysia* (JANM) audited the SAGA GRP 9.0 accounting system which was implemented by ASM in 2022. ASM received an appreciation letter from the JANM in achieving the SAGA compliance for the second time.

Apart from this, under the digitalisation initiative, we managed to successfully implement an e-leave and e-claim system for staff. The online application system for ASM Associates was also implemented as the change in selection mechanism for ASM Associates was approved by ASM Council in 2023.

Funding and Operations

This year, ASM received an income of RM19,648,428. ASM's income was majorly contributed by the annual operating grant received for ASM office operations, supplies and staff emoluments, amounting to RM13,938,200. Apart from that, ASM used RM1,739,650 from the ASM Fund to cover the expenses of ASM programmes and activities. ASM has managed ten deferred grants and four development grants.

The ASM Finance Committee has established an Investment Committee, a sub-committee under the Finance Committee, to oversee and better manage ASM's investments. ASM investments are through fixed deposits as guided by MOF. The Committee recognises the importance of increasing ASM's income to fund ASM flagship programmes that are not supported by operating grant.

ASM is also registered with *Pusat Pungutan Zakat, Majlis Agama Islam Wilayah Persekutuan Kuala Lumpur* (PPZ-MAIWP). ASM began its first contribution for the financial year 2022 in 2023. Subsequent to this, ASM had received *Wakalah Zakat* fund from PPZ-MAIWP to be distributed to the needy as decided by ASM Council based on PPZ-MAIWP criteria.

Strategic Direction

At the closing of the year, a strategic workshop was conducted with Council Members, Chair of Discipline Groups and strategic committees. The workshop gained feedback and suggestions on ASM's current performance and outcome based on four areas, which were Mandate, Money, Manpower and Method. These inputs helped ASM Management in planning for the year ahead for a better outcome as we hope to become a trusted knowledge powerhouse of the nation.

Acknowledgement

As I reflect on the year, we have achieved many successes, sealed new collaborations, and made new friends. Although the year was challenging, but efforts were fruitful.

I thank the ASM Council, especially ASM EXCO for their leadership and guidance provided to the ASM Management. I would also like to thank ASM Fellows, Young Scientists Network (YSN-ASM) members, TRSM, and Associates in providing expert inputs to the nation through ASM. These experts' participation and contribution in various ASM activities had enabled ASM to deliver its mandate effectively as the STIE Thought Leader to the nation.

Moving forward, ASM will continue to work with various ministries and state governments as our strong strategic partners in building a progressive, harmonious, prosperous, and sustainable society, both nationally and internationally.



Hazami Habib

CORPORATE GOVERNANCE

REPORT

Building organisational resilience is crucial for organisations to thrive in today's dynamic business environment. Thus, ASM envisioned to become an agile organisation in a constantly changing world, keeping in mind that people and technology should work as an integrated system.

ASM Council

ASM, established under the Academy of Sciences Malaysia Act 1994, is governed by the ASM Council. The Council determines the policy and strategic direction of ASM. They are responsible for carrying out the 14 functions of ASM and managing its affairs. The Council is also responsible to ensure that ASM remains an independent and credible body in championing matters of STIE that are of national and international importance as well as administer the ASM Fund.

Composition and Selection of ASM Council

ASM Council comprises Fellows of the Academy. Its membership consists of the President, Vice-President, Secretary-General, Honorary Treasurer and 12 Ordinary Council Members.

ASM President is appointed from among Fellows for a three-year term by the SPB Yang di-Pertuan Agong based on the recommendation by the Minister of Science, Technology and Innovation. ASM President is eligible to be reappointed for a second term provided that the person does not hold the position for consecutive six years.

Besides ASM President, all other members of the Council are nominated by ASM Fellows from among Fellows. Each year, Fellows elect in-coming Council members at the ASM's Annual General Meeting (AGM). Fellows elected for the position of Vice-President, Secretary-General, Honorary Treasurer and 12 Ordinary Council Members are eligible to serve the position for two years. At the end of their term, they are also eligible to be re-nominated for the same position, provided the person does not hold the same position for four consecutive years.

Each year, several positions in the Council lineup fall vacant and new members are elected to fill the position at the AGM. The occurrence of out-going and in-coming Council members allows Fellows to take part in the governance of ASM apart from ensuring sustainability and continuity of ASM policies.

COUNCIL MEMBERS



1. **Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc**
President
2. **Professor Dato' Ir Dr A. Bakar Jaafar FASc**
Vice-President
3. **Professor Dr Noorsaadah Abd Rahman FASc**
Secretary-General
4. **Academician Datin Paduka Setia Dato' Dr Aini Ideris FASc**
Honorary Treasurer
5. **Professor Dato' Dr Ahmad Ibrahim FASc**
Ordinary Member
6. **Professor Dr Ahmad Ismail FASc**
Ordinary Member
7. **Professor Dato' Dr Jafri Malin Abdullah FASc**
Ordinary Member
8. **Professor Dr Mahendhiran Sanggaran Nair FASc**
Ordinary Member
9. **Dr Hj Mohamad Kamal Hj Harun FASc**
Ordinary Member
10. **Professor Dr Yvonne Lim Ai Lian FASc**
Ordinary Member
11. **Datuk Fadilah Baharin FASc**
Ordinary Member
12. **Professor Dr Kurunathan Ratnavelu FASc**
Ordinary Member
13. **Academician Distinguished Professor Datuk Dr Looi Lai Meng FASc**
Ordinary Member
14. **Professor Dato' Ir Dr Mohd Saleh Jaafar FASc**
Ordinary Member
15. **Professor Dr Rofina Yasmin Othman FASc**
Ordinary Member
16. **Dato' Seri Ir Dr Zaini Ujang FASc**
Ordinary Member

Conflict of Interest

Council Members are required to declare their involvement, directly or indirectly, in any agenda tabled to the ASM Council. Should a Council member declare a conflict of interest, the respective person will be required to abstain from the decision-making process and remain absent for the duration of the respective agenda. This will be recorded in the meeting minutes.

Role of President and CEO

The roles and responsibilities of the President and Chief Executive Officer (CEO) are demarcated separately. The President is the leader of ASM and leads the ASM Council in determining ASM's direction, policies, principles, stand, and activities. The President also leads discussions on all matters brought to the Council's attention. The President, together with other Executive Committee (EXCO) members, ensures that all Council decisions are translated into executive actions.

The Malaysian Government, at a Cabinet Meeting on 22 June 2022, agreed for the President to be appointed as the STI Advisor to the Prime Minister and the Nation. Following this, the Council agreed for ASM to provide support and facilitation to the President in carrying out the duty of the STI Advisor. Considering the additional role and responsibilities of the President, the Council further agreed for the President to be remunerated. Therefore, the President is paid a monthly honorarium for the joint function as the STI Advisor, while the position of the ASM President would remain pro bono.

Whereas CEO is the chief controlling officer of ASM and is responsible to lead ASM Management and oversee the overall administration matters. CEO's role includes strategising and translating Council decisions into executive actions based on ASM's existing strategies, policies and procedures. The CEO is appointed by the Council and is a civil servant salaried by ASM.

Council Meetings and Members Attendance

ASM Council Meetings are to be chaired by the President. The Meetings will discuss matters that require deliberation, notification, and approval. The following are reports presented at ASM Council Meetings:

- (i) Minutes of Executive Committee Meeting
- (ii) Report of Finance Committee
- (iii) Report of Science, Technology and Innovation Policy Advisory Committee (STIPAC)
- (iv) Report of Membership Committee
- (v) Report of Audit Committee
- (vi) Report on KPI for ASM and Ministry

Besides the above-mentioned reports, ASM Management also tables proposals for ASM to carry out new programmes or studies for the Council's approval as well as updates on the ongoing programme or study.

In 2023, the Council convened five meetings. Following were the dates of the meetings:

153 rd Meeting	9 February 2023	Hybrid (Council Room & Zoom)
154 th Meeting	13 April 2023	Hybrid (Council Room & Zoom)
155 th Meeting	13 July 2023	Hybrid (Council Room & Zoom)
156 th Meeting	13 October 2023	Hybrid (Council Room & Zoom)
157 th Meeting	8 December 2023	Hybrid (Movenpick Hotel & Zoom)

The attendance of Council members in 2023 meetings is provided as follows:

Position	Name	Term	Meetings Attended
President	Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc	1 st term: 1 March 2023 – 28 Feb 2026	4/4 (100%)
Vice-President	Professor Dato' Ir Dr A. Bakar Jaafar FASc	1 st term: 2020-2022 2 nd term: 2022-2024	5/5 (100%)
Secretary-General	Professor Datuk Dr Awg Bulgiba Awg Mahmud FASc	1 st term: 2019-2021 2 nd term: 2021-2023	2/2 (100%)
	Professor Dr Noorsaadah Abd Rahman FASc	1 st term: 2023-2025	3/3 (100%)
Honorary Treasurer	Academician Datin Paduka Setia Dato' Dr Aini Ideris FASc	1st term: 2021-2023 2nd term: 2023-2025	4/5 (80%)
Ordinary Council Members	Professor Dato' Dr Ahmad Ibrahim FASc	1st term: 2020-2022 2nd term: 2022-2024	5/5 (100%)
	Professor Dato' Dr Jafri Malin Abdullah FASc	1st term: 2021-2023 2nd term: 2023-2025	5/5 (100%)
	Professor Dr Mahendhiran Sanggaran Nair FASc	1st term: 2021-2023 2nd term: 2023-2025	5/5 (100%)
	Dr Hj Mohamad Kamal Hj Harun FASc	1st term: 2021-2023 2nd term: 2023-2025	3/5 (60%)
	Professor Dr Yvonne Lim Ai Lian FASc	1st term: 2020-2022 2nd term: 2022-2024	5/5 (100%)
	Professor Dato' Ir Dr Mohd Saleh Jaafar FASc	1st term: 2022-2024	3/5 (60%)
	Dato' Seri Ir Dr Zaini Ujang FASc	1st term: 2022-2024	3/5 (60%)
	Datuk Fadilah Baharin FASc	1st term: 2023-2025	3/3 (100%)
	Professor Dr Kurunathan Ratnavelu FASc	1st term: 2023-2025	2/3 (70%)
	Academician Distinguished Professor Datuk Dr Looi Lai Meng FASc	1st term: 2023-2025	2/3 (70%)
	Professor Dr Rofina Yasmin Othman FASc	1st term: 2023-2025	3/3 (100%)
	Professor Dr Ahmad Ismail FASc	1st term: 2023-2025	3/3 (100%)
	Academician Tan Sri Dato' Ir Ts Ahmad Zaidee Laidin FASc	1st term: 2019-2021 2nd term: 2021-2023	2/2 (100%)
	Dr Helen Nair FASc	1st term: 2019-2021 2nd term: 2021-2023	2/2 (100%)
	Academician Professor Datin Paduka Dr Khatijah Mohd Yusoff FASc	1st term: 2019-2021 2nd term: 2021-2023	2/2 (100%)
	Emeritus Professor Dr Phang Siew Moi FASc	1st term: 2019-2021 2nd term: 2021-2023	2/2 (100%)
	Professor Dr Noorsaadah Abd Rahman FASc	1st term: 2021-2023	2/2 (100%)

No remuneration is paid to the Council members. However, they receive meeting allowance when they attend the meetings. The President, as chair of the meeting, is paid RM750 per meeting while members are paid RM500 per meeting.

Availability of Information

Council Members are provided online access to the meeting documents at least three days prior to the meeting. Each member is required to study the documents and agenda provided before the meeting for an effective discussion. The Council Meeting document consists of at least the following matters:

- (i) Minutes of the last meeting;
- (ii) Committee Reports requiring Council's approval; and
- (iii) Report on ASM programmes and studies.

Annual General Meeting (AGM)

The 28th AGM was held in hybrid mode on 29 April 2023, attended by 180 Fellows. The Meeting endorsed the minutes of the 27th AGM and approved the Financial Statements ending 31 December 2022 and the 2022 Annual Report to be tabled at the Parliament. The 2022 ASM Annual Report was approved by Dewan Rakyat on 28 February 2024 and Dewan Negara on 18 March 2024.

Besides that, the 28th AGM elected 35 new Fellows for the year 2023, bringing the total Fellowship to 484.



Newly Elected Fellows

Biological, Agricultural and Environmental Sciences

- Professor Dr Lim Phaik Eem FASc
- Datu Dr Lulie Anak Joshua Melling FASc
- Professor Dr Rosfarizan Mohamed FASc
- Professor Dr Tang Thean Hock FASc
- Professor Dr Wong Mui Yun FASc
- Professor Dr Zulqarnain Mohamed FASc



Chemical Sciences

- Professor Ts Dr ChM Ahmad Zuhairi Abdullah FASc
- Professor Dato' Dr Ibrahim Jantan FASc
- Professor Dr ChM Lee Yook Heng FASc
- Professor Dr Wan Jeffrey Basirun FASc



Engineering Sciences

- Professor Dato' TPr Dr Alias Abdullah FASc
- Professor Ir Dr Chong Wen Tong FASc
- Dato' Ir Dr Dennis Ganendra FASc
- Professor Ir Dr Koo Voon Chet FASc
- Dato' Ir Dr Haji Md Nasir Md Noh FASc
- Dato' Ir Dr Nor Hisham Mohd Ghazali FASc
- Professor Ts Dr Zainura Zainon Noor FASc



Medical and Health Sciences

- Professor Datin Dr Hapizah Md Nawawi FASc
- Professor Dr Ong Teng Aik FASc
- Professor Dr Rozita Rosli FASc
- Professor Dr Zamri Radzi FASc



Science & Technology Development and Industry

- Tan Sri Dato' Seri (Dr) Jeffrey Cheah Fook Ling FASc
- Dr Mohd Khanif Yusop FASc
- Mr Pong Kai See FASc
- Dato' Dr Sheikh Muszaphar Shukor FASc
- Dato' Sia Hok Kiang FASc



Social Sciences and Humanities

- Professor Emeritus Dr Azirah Hashim FASc
- Datuk Professor Dr Azizan Baharuddin FASc
- Justice Professor Dr Choong Yeow Choy FASc
- Professor Datuk Dr Danny Wong Tze Ken FASc
- Professor Dato' Dr Fariza Md Sham FASc
- Mr Kiu Jia Yaw FASc
- Professor Dr Mansor Abu Talib FASc
- Dr Mohd Shahwahid Haji Othman FASc
- Datin Sri Professor Dr Suhaiza Hanim Dato' Mohamad Zailani FASc

At the 28th AGM, the posts of Secretary-General, Honorary Treasurer and eight Ordinary Council Members fell vacant. The following Fellows were elected as Council Members for the term 2023-2025:

- (i) Professor Dr Noorsaadah Abd Rahman FASc as the Secretary-General;
- (ii) Academician Datin Paduka Setia Dato' Dr Aini Ideris FASc as the Honorary Treasurer;
- (iii) Professor Dr Ahmad Ismail FASc as an Ordinary Council Member;
- (iv) Datuk Fadilah Baharin FASc as an Ordinary Council Member;
- (v) Professor Dato' Dr Jafri Malin Abdullah FASc as an Ordinary Council Member;
- (vi) Professor Dr Kurunathan Ratnavelu FASc as an Ordinary Council Member;
- (vii) Academician Distinguished Professor Datuk Dr Looi Lai Meng FASc as an Ordinary Council Member;
- (viii) Professor Dr Mahendhiran Sanggaran Nair FASc as an Ordinary Council Member;
- (ix) Dr Hj Mohamad Kamal Hj Harun FASc as an Ordinary Council Member; and
- (x) Professor Dr Rofina Yasmin Othman FASc as an Ordinary Council Member.

ASM Committees

ASM Council establishes various committees and delegates its responsibilities to these committees to ensure the smooth operations of ASM. As such, the Council holds the authority to establish a committee and appoint the chairperson. The Council also reviews the committees' performance from time to time and closes them upon completion of their tasks.

The Council establishes working committees, task forces and Special Interest Group (SIG) to carry out their programmes and studies. Each committee is represented by members of the ASM Expert Network especially ASM Fellows. In 2023, ASM had established 39 committees and 25 task forces.

Executive Committee

EXCO is responsible to monitor and oversee the affairs of ASM apart from supporting the implementation of ASM functions. EXCO is referred to by ASM Management for urgent approval and advice on managing the day-to-day operations. The Committee deliberates and reviews programme proposals and drafts ASM policies prior to tabling them to the ASM Council for approval.

EXCO, comprising the President, Vice-President, Secretary-General and Honorary Treasurer, convenes at least four times a year. The EXCO meetings are chaired by the President. ASM EXCO had four meetings in 2023.

Finance Committee

The Finance Committee is responsible to oversee the planning, implementation and monitoring of procedures, systems, and financial reporting related to the finances of ASM.

The functions of the Finance Committee comprise the following:

- Arrange and control the finance of ASM;
- Consider and endorse the estimated yearly budget for ASM and seek Council's approval;
- Review and endorse the yearly Financial Statements of ASM and seek Council's approval;
- Provide advice related to investment;
- Review the investment performance reports of ASM Funds;
- Approve finance and accounts-related policies and recommend the adoption of government circulars if relevant to ASM; and
- Approve the disposal request of ASM assets and write-off of debts.

The Finance Committee is chaired by the Honorary Treasurer and consists of at least six members from among Fellows. It convenes its meetings at least six times a year. Finance committee met eight times in 2023.

Audit Committee

The Audit Committee was established to improve the internal control of ASM and identify weak points in its management and governance. The chair of the Audit Committee is appointed by the ASM Council. The Committee comprises four members and convenes its meetings at least four times a year.

The Audit Committee is responsible for establishing yearly audit activities, which include an audit charter and conducting a study on the capacity and effectiveness of ASM internal control. The Committee reports to ASM Council should any malpractice is found and requires action.

Membership Committee

The Membership Committee is chaired by the Vice-President with 18 members including the Secretary-General and Chair of discipline groups. The Committee is responsible for guarding the quality of ASM membership. As such, it recommends policies, procedures, and strategies to maintain a well-balanced pool of expertise among its members in supporting the needs of ASM. It also oversees the selection process of new Fellows and appointment of Associates and recommends shortlisted candidates to the Council. Besides that, the Committee is also responsible to manage matters of membership affairs. This Committee convenes at least twice a year. The committee had three meetings in 2023.

Science, Technology and Innovation Policy Advisory Committee

STIPAC is responsible to evaluate, consolidate, and coordinate study proposals or reports that are being prepared by the study committees. STIPAC ensures that all recommendations put forward by ASM through various study reports, reviews and proposals are positioned to fulfil the importance of the nation. All proposal papers or study reports must be approved by STIPAC prior to submission to relevant ministries.

The STIPAC meetings chaired by the President are convened at least four times a year and in 2023, STIPAC met eight times. The Committee of 30 members comprising of chairs or representatives from the eight Discipline Groups and several other committees which are deemed strategic and relevant.

ASM Expert Network

ASM harnesses the expertise of its expert network to execute its role and function. ASM's Conferment of Fellowship and Recognition of the 2023 Top Research Scientists Malaysia (TRSM) recipients held on 17 October 2023 conferred 35 newly elected Fellows and awarded 30 research scientists as the 2023 TRSM.

As such, at the closing of the year, ASM had 1,001 experts consisting of 482 Fellows, 178 TRSM recipients, 299 Young Scientists Malaysia-Akademi Sains Malaysia (YSN-ASM) members, 30 Associates and 12 Mahathir Science Award Laureates.

Our People

ASM Management is led by the CEO and assisted by three Chief Officers in regulating, monitoring, planning and managing the operations of ASM.

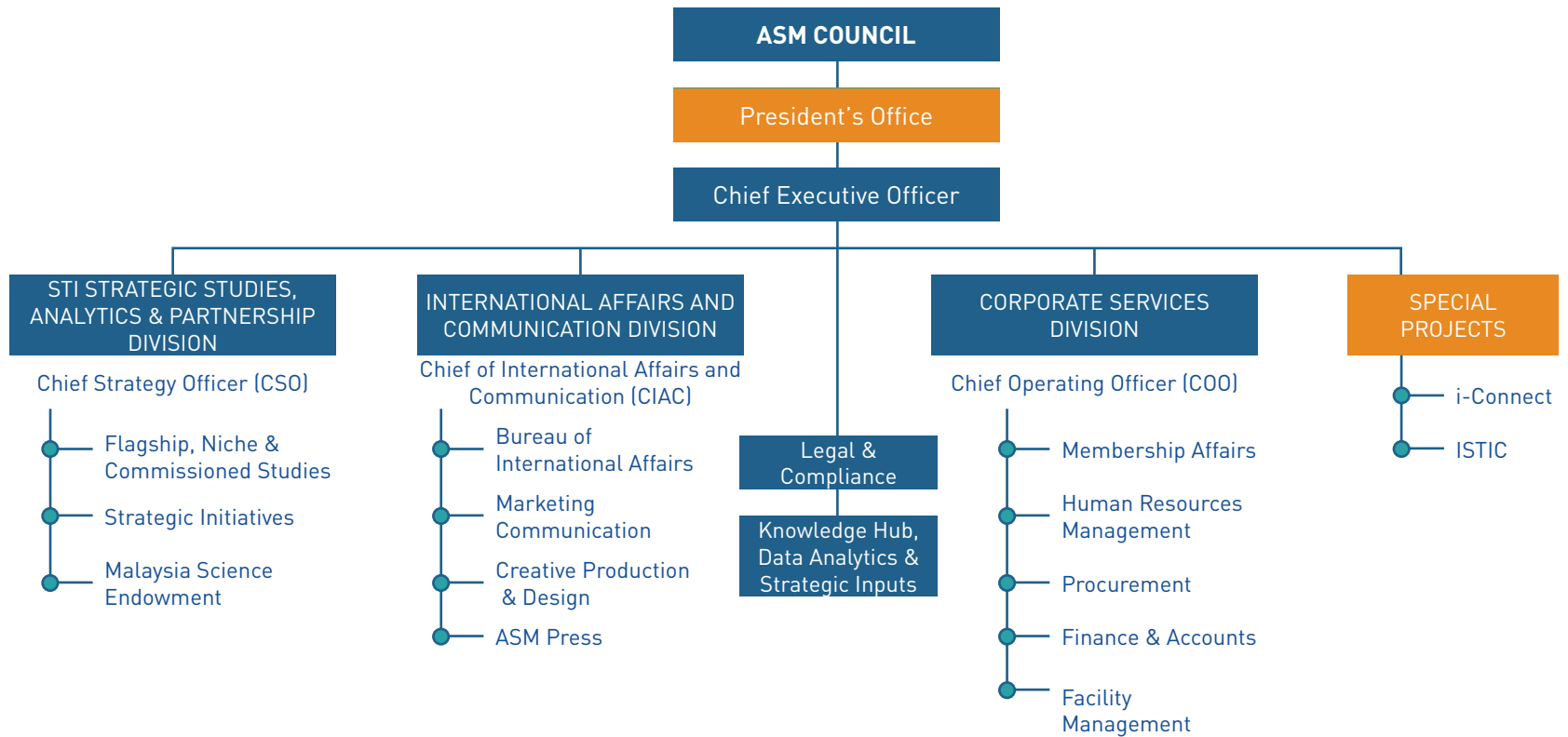
ASM Management comprises staff from the Higher Management Group (1%), Management and Professional Group (67%) and the Support Group (32%). The Management team are civil servants appointed and salaried by ASM. 9% of ASM staff are permanent appointees while 91% are appointed under the Contract of Services (CoS) scheme. A total of 40 Analysts, 31 Executives and 32 support staff carries out the planned studies and programmes as well as manage the administration and finance of ASM.

The STI Strategic Studies, Analytics and Partnership Division is led by the Chief Strategy Officer (CSO). The division is responsible for producing strategic studies which include studies commissioned by strategic partners as well as implementing initiatives and pilot projects in niche areas. This division also conducts foresight activities, data analysis and drafting of reviews related to STIE.

The International Affairs and Communication Division is led by the Chief of International Affairs and Communication (CIAC). The division is responsible towards international relations and programmes as well as translating the work of ASM in an understandable manner. This division also manages the corporate communications of ASM with external party.

The Corporate Services Division is led by the Chief Operating Officer (COO). The division provides a supporting role to all other divisions and units in implementing their activities. This division is responsible towards the management of administration, finance, procurement, asset and facility, human resources and membership affairs of ASM.

ASM Organisation Structure





01

A GLIMPSE INTO OUR TRANSFORMATIVE ROLE IN STIE

ASM Going to the Ground

Understanding the Wider STIE Ecosystem at the State Level

In strengthening ASM position as a Thought Leader and Changemaker in STIE, ASM expanded its roles in providing service to the nation through science and technology to social and economic development which are humanity-centric. Following this, ASM has broadened its reach by going to the ground in understanding the STIE ecosystem at the state level as well as offering solutions that are aligned with local needs. This effort also aims to encourage active participation and contribution of the Expert Network to their respective state and region through ASM Chapters.

Therefore, ASM President, in his capacity as the STI Advisor to the Prime Minister and Nation, had visited Sabah, Sarawak, Terengganu and Langkawi in 2023. These visits have provided ASM with invaluable insights into each state's unique strengths, emerging opportunities and challenges that are crucial in developing STIE at the regional and local levels.



Courtesy visit to YAB Chief Minister of Sabah



Courtesy visit to YAB Menteri Besar of Terengganu



Courtesy visit to YB Minister of Kementrian Sains, Teknologi dan Inovasi Sabah (KSTI)



Courtesy visit to the Deputy Vice-Chancellor (Academic & International), Universiti Malaysia Sarawak



Visit to USM Social Innovation Project at Kubang Badak - Langkawi Oyster Farm



ASM President with ASM East Coast Chapter members

The summary of overall potential collaboration with states from the visits

● KEDAH (2-4 December 2023) Pulau Langkawi

- Visit to Kilim Geoforest Park
- Visit to Langkawi Oyster Farm
- Visit to LADA
- Visit to FRI Langkawi
- Visit to *gamat* production facilities
- Visit to crab farm
- Blue Economy
- Social innovation (*gamat*, oyster & crab)
- Endogenous knowledge – aquaculture, marine & climate as well as plant / *gamat* medicinal purposes
- Ecotourism & biodiversity conversation
- Planetary Health

● KELANTAN (11 December 2023)

Meeting with YB EXCO S&T Kelantan

- Kelantan Science & Technology Centre
- Water issues
- Fertiliser for paddy

● TERENGGANU (6-8 November 2023)

Meeting with YAB Menteri Besar Terengganu

Meeting with VC UMT

Meeting with VC UNISZA & visit to Bioresources & Food Industry Faculty, UNISZA

- Hydrogen as alternative energy industry for Terengganu
- Blue Economy – Aquaculture (food for fish) & cold storage for seep sea fisherman
- Marine repository for MOSP
- Collaboration with Terengganu think tank (TSIS)
- Precision agriculture
- Behavioral science – improve local community mindset & thinking
- Endogenous agricultural & food technology and knowledge & social innovation (community farming) e.g. *pokok gelam* products, Terengganu rock melon & bitato
- R&D convention for strategic research

● SABAH (24 & 25 August 2023)

Meeting with YAB Sabah Chief Minister

Meeting with YB Minister of KSTI

Meeting with VC UMS

- Blue Economy e.g. OTEC
- Imbak Canyon Rainforest Research & Training Programme (ICRRTP)
- Precision Biodiversity
- MOSP & Planetary Health (Indigenous knowledge)
- Technology for agriculture
- STEM talent development & enculturation
- Wireless Bridging System
- 10-10 MySTIE
- Sabah rocket launching site
- Sabah data centre

● SARAWAK (24 & 25 October 2023)

Meeting with DVC Academic & International of UNIMAS

Visit to SBC

Visit to TEGAS

- Endogenous knowledge in Sarawak
- Science communication
- Dark fiber
- MOSP & Planetary Health (Indigenous knowledge)
- Precision Biodiversity
- TropScience 2024

Charting New Horizon:

NHSTI's Vision for Higher Education Reform

In the ever-evolving landscape of STI, higher education institutions (HEIs) play a pivotal role in shaping the future. As we find ourselves in what can be termed “post-normal times”, characterised by unprecedented challenges, chaos, and uncertainties, it becomes imperative to re-evaluate our approach to science education.

This position paper was developed by ASM as a strategic partner for the Ministry of Higher Education (MOHE). A New Horizon in Science, Technology and Innovation (NHSTI) – A Strategy to Enhance Higher Education in Malaysia proposed a humanity-centric Framework as a strategy to transform the higher education (HE) ecosystem in Malaysia. This framework emphasised the need to address the unique demands of these extraordinary post-normal times as the HE sector is responsible for creating institutions that nurture the country's talents and new knowledge as its most valuable assets.

The findings and recommendations were presented to the Minister of Higher Education on 16 November 2023. MOHE *Jawatankuasa Pemandu Dana Penyelidikan* approved the position paper on 18 December 2023.

The objectives of the position paper were:



To assess the impact of current and future disruptive technologies on teaching & learning, research & innovation, and governance of HE.



To propose new strategies (or solutions) for HE towards a “New Horizon for STI”.



To provide recommendations/key takeaways to the ministry for a way forward.



NHSTI RECOMMENDATION:

1 Develop a resource-sharing policy and establish centres for sharing high-end infrastructure support services.

Formulate a policy that adopts Open Education technologies that are humanity-centric, nature-based, values-driven, and STI-enabled by means of:

- a. Including local input for Open Educational Resources (OER).
- b. Facilitating adopting flexible and personalised learning towards marginal, adaptive and radical change.
- c. Incorporating Diversity, Equality, Equity, and Inclusion (DEEI) in the pedagogy and curriculum approach.
- d. Leveraging on MOSP.

3 Create a national open innovation platform that facilitates collaborative mission-oriented research and innovation.

4 Revise policy on assessment, rewards and promotion of HE institutions and educators (KIP and KPI).

5 Develop a robust framework for the adoption and regulation of disruptive technologies and the adoption of nature-based solutions in teaching and learning, as well as research and innovation.

6 Introduce Principles for Responsible Emerging Technologies to foster a culture of ethics and integrity in the HE STIE ecosystem to build greater trust in science and improve resilience in post-normal times.

7 An “All-of-Malaysia” approach to streamline talent development, knowledge generation and innovation pipeline, including but not limited to:

- a. Scholarships
- b. Training for future talent and technologies
- c. Career advancement
- d. Infrastructure and infostructure

8 Establish joint efforts in HE towards nation-building.

9 Develop a policy on industry-academia collaboration.

10 Strengthen the national STIE ecosystem through policies.

11 Establish a comprehensive policy encompassing end-to-end collaborative mechanism and financing via:

- a. Government R&D grant scheme through Handshake Mechanism
- b. Alternative financing model for R&D through Malaysia Science Endowment

12 Enhancing TVET ecosystem through a multifaceted approach.

Unearthing Malaysia's REE Industry Potential




Given their indispensable role in modern industries, we recognise the global significance of rare earth elements (REE). The surge in market value, from USD13.2 billion in 2019 to a projected USD19.8 billion by 2026, underscores this importance. Notably, a preliminary assessment values Malaysia's non-radioactive rare earth elements (NR-REE) resources to be at USD182 billion, affirming REE as a recognised national strategic commodity according to the *Kerangka Pelan Transformasi Industri Mineral Negara 2021-2030*.

To capitalise on Malaysia's NR-REE industry potential, we have embarked on a strategic partnership with the Ministry of Natural Resources and Environmental Sustainability (NRES) to craft a comprehensive business model tailored to the NR-REE industry in Malaysia. This model aims to guide ministries, agencies, industries, and other stakeholders to facilitate the acceleration of NR-REE industry development. Our study, initiated in August 2022, focused on formulating a business model for Malaysia's NR-REE industry, covering upstream, midstream, and downstream sectors of the supply chain.

Throughout our study, we have conducted several stakeholder engagements, FGDs, and site visits to gather and validate inputs for the business model. Our team of experts visited various locations, including a pilot plant, the Lynas Advanced Material Plant, *Pusat Alam* Universiti Malaysia Pahang (UMP), and the Perak Land and Mines Office.

We have engaged with over 40 organisations, including government bodies, industry players, NGOs, and CSOs, to gather input for the business model addressing the Return on Investment (ROI) and Return on Value (ROV).


15 Major recommendations

 **85** Recommendations on upstream, midstream, and downstream sectors of the supply chain

Despite its potential, the NR-REE industry remains unfamiliar to many stakeholders, and overcoming negative perceptions has been challenging. Stakeholders hold diverse views, necessitating substantial efforts to establish a shared vision for the industry's future and extensive communication, education and public awareness (CEPA) effort. NRES approved the final report on 27 November 2023.

1 H Hydrogen																	2 He Helium						
3 Li Lithium	4 Be Beryllium																	5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
11 Na Sodium	12 Mg Magnesium																	13 Al Aluminum	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
19 K Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton						
37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon						
55 Cs Cesium	56 Ba Barium	57 La Lanthanum	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon						
87 Fr Francium	88 Ra Radium	89 Ac Actinium	104 Rf Rutherfordium	105 Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 Hs Hassium	109 Mt Meitnerium	110 Ds Darmstadtium	111 Rg Roentgenium	112 Cn Copernicium	113 Nh Nihonium	114 Fl Flerovium	115 Mc Moscovium	116 Lv Livermorium	117 Ts Tennessine	118 Og Oganesson						
58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysprosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium										
**	90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	98 Cf Californium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium									

National Planetary Health Action Plan:

Balancing Priorities through All-of-Malaysia Approach

In post-normal times, humanity faces unprecedented degradation of natural systems, brought on by factors like population growth, poverty, and rapid industrialisation. The surge in zoonotic diseases, irresponsible biodiversity exploitation and climate change has unveiled vulnerabilities leading to destruction and detrimental impact on human civilisation, environment and animals. The staggering toll of the pandemic in 2019 requiring a colossal USD 8.1 to 15.8 trillion resources to be mobilised globally as a call to seriously mitigate such negative impact.

The Government has tasked ASM, through MOSTI, to spearhead the development of NPHAP. NPHAP is designed to ensure that Malaysia's growth is intertwined with environmental preservation and social inclusivity, which aligns with scientific insights on zoonoses, biodiversity, and climate change. Our goal is to drive solutions, services, and products that balance the needs of people, nature, and the planet.

A collaborative effort involving ministries, agencies, and stakeholders fosters a nationwide and societal approach, to bring this action plan to life.

Six key pillars were set up within the NPHAP to bring about a multidimensional approach in addressing critical planetary concerns involving human, animal, and environmental well-being, namely:



Environment and Health



Governance



Sustainable Food



Research and Education



Energy Transition

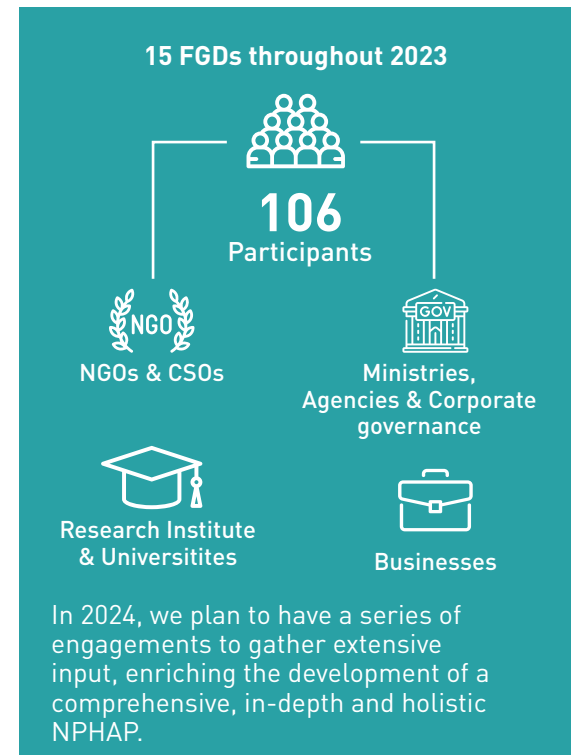


Values, Communication, Behavioural Change, and Cultural Shift of Society

This year, we focused on drafting an all-encompassing NPHAP that takes into account the connection between natural crises and three key priority focus areas which are environment and health, sustainable food, and energy transition. The NPHAP aimed to reimagine solutions through the three mega shifts in governance, research and education, as well as values, communication, behavioural change, and cultural shift of society.

The action will draw upon inputs and analysis from:

- ✓ **Surveys & Focus Group Discussions (FGDs)**
- ✓ **Transformational Sustainable Leadership Module**
- ✓ **Knowledge Systems**
 - Establishing Environmental Genome Database Framework
 - Leveraging Indigenous Knowledge
- ✓ **Framework for STI-driven Impact Tracking System**



Seeding Success:

Nurturing Biomedical Research with the RBS Grant

This year is the 27th year that ASM has managed the **Dr Ranjeet Bhagwan Singh (RBS) Medical Research Grant**. From 2 January to 28 February 2023, we received 110 applications, out of which we shortlisted 40 research proposals. This year, the recipient is **Dr Fazren Azmi** from **UKM**.

His winning research proposal, “**Bioengineered-Microalgae Oil Droplets as Production Platform of Advanced Immunogenic Protein Particles for Intranasal COVID-19 Nanovaccine Formulation**”, was awarded RM50,000 at the 2023 RBS Research Grant Memorial Lecture.

To celebrate the recipient this year and highlight the latest developments in the biomedical field, we held the Memorial Lecture and Research Grant Recipient Announcement Ceremony on 15 August 2023. One hundred twenty curious minds from various walks of life, hungry for knowledge, attended the event.

In honour of Dr Ranjeet Bhagwan Singh, the first philanthropist in Malaysia, the 16th RBS Memorial Lecture titled “**Promise (and Overpromise) of Precision Public Health**” was presented by Professor Teo Yik Ying, the second Dean of the Saw Swee Hock School of Public Health at the National University of Singapore.



Our goal is to establish the RBS Medical Research Grant as a beacon of inspiration, enticing more philanthropists in Malaysia to invest in medical research grants for the benefit of society. Our initiative has helped young scientists start their research journey and bring in experts to talk about cutting-edge technologies and the latest discoveries in the field of medical research.



Mock cheque presentation for this year's RBS recipient


RM812,265
Total grant disbursed



27
Research
Projects



11
Technical
Workshops



16
RBS Memorial
Lectures held
between
1997 to 2023

Two Decades of Advancing Research in Cancer

The MAKNA Cancer Research Award (MCRA) was initiated in 2001 to promote cancer research among young researchers geared towards helping cancer patients discover potential cures for the disease. Due to our extensive expert network, we have been entrusted to select deserving young researchers in the field of cancer research for the past 20 years.

Out of 75 applications received in 2023, **three recipients were chosen as MAKNA recipients:**

Dr Norfarazieda Hassan

Harnessing the Natural Killer (NK) Cells for
Anti-tumour Adoptive Immunotherapy in
Breast Cancer

Monash University Malaysia

RM50,000

Dr Ainol Haniza

Financial Burden and Quality of Life among Head
and Neck Cancer Patients Undergoing Supportive
Care after Completion of Cancer Therapy

Universiti Sains Malaysia (USM)

RM49,450

Dr Lim Wei Meng

Targeting Cytotoxic T Lymphocytes Resistant
Pancreatic Cancer using Cyclin-dependent Kinase
Inhibitors

Universiti Malaya (UM)

RM50,000

MCRA's noble cause in cancer research resonates with our mission to encourage young researchers to strive towards the promotion and discovery of cures and treatments for cancer through scientific research. Throughout the 20 years of this initiative, we have seen marked improvements in cancer research and development in Malaysia, which in turn has improved the survival rate among cancer patients.



This year, we received
75 applications,
a 33% increase since 2022.

This marked a significant increase in
cancer research. We will be honouring the
2023 and 2024 recipients in October 2024.



Awardees to date:
**70 young
researchers**



More than RM2 million
disbursed since 2001

GKD 2023:

Illuminating Insights for Global Progress



Launched in Africa during the World Science Forum 2022, the ISC organised the first GKD in Cape Town, South Africa. To keep the ball rolling, we organised the second edition of the GKD: Asia-Pacific 2023 in Malaysia on 6 October 2023.

Under the theme “**Mobilising Science to Collaborate for Global Planetary Health**”, GKD 2023 was a joint effort between the ISC. The dialogue was conducted based on four main parts:

- **Part 1 – ISC Advancing Planetary Health in the Multilateral Space:**
Promoting Mission-based Science for Sustainability
- **Part 2 – Opportunities and Challenges for the 2030 Agenda through Scientific Diplomacy, Scientific Advice, and New Technologies:**
Winning on the SDGs through Science Advice and Diplomacy – Lessons and Opportunities for ISC Members in the Region
- **Part 3 – The ISC in Regional Context:**
A Dialogue Looking at Key Priority Areas for Strengthening Science Systems and the Role of an ISC Regional Focal Point (RFP) – Dialogue on the Asia Pacific Voice for Global Science and the Pressuring Issues for Planetary Health, Challenges, and Opportunities.
- **Part 4 – Next Steps for the Regional Focal Point of Asia and the Pacific – Turning Dialogue into Actions:**
Opportunities and Challenges in Progressing and Addressing the Role of ISC and ISC RFP - Asia Pacific

Read
GKD's full report
here



The dialogue was facilitated by both ASM and the Australian Academy of Science (AAS). We were thrilled to welcome over 140 participants from 30 countries, including the President of ISC, Sir Peter Gluckman, and AAS Foreign Secretary, Professor Frances Separovic. The dialogue was officiated by the Deputy Minister of MOSTI, YB Datuk Arthur Joseph Kurup.

The GKD aimed at fostering international cooperation and dialogue among scientists, policymakers, and other stakeholders to address global challenges by sharing knowledge promoting scientific collaboration and integrating diverse perspectives to develop sustainable solutions. The panel sessions dove deep into global socioeconomic issues, including planetary health. This event also marked the official transition of the regional focal point for Asia-Pacific from ASM to the AAS. It's a significant milestone, and we're excited to see where the AAS will lead the region from here.



YB Datuk Arthur Joseph Kurup presenting a memento to Professor Frances Separovic, witnessed by Datuk Dr Tengku Mohd Azzman Shariffadeen FASc and Sir Peter Gluckman



One of the four panel discussions of GKD



Token of appreciation exchange between Puan Hazami Habib and Dr Salvatore Arico

From Dialogue to Action: ASM and TÜBA's Collaborative Commitment



During this event, we also signed a Memorandum of Understanding (MoU) with TÜBA. Professor Dr Muzaffer Seker (TÜBA President) and YM Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc (ASM President) signed the MoU, witnessed by YB Datuk Arthur Joseph Kurup, Deputy Minister of MOSTI.

Also present to witness the signing were Professor Dr Noorsaadah Abd Rahman FASc (Secretary-General ASM), Professor Dr Mürsel Doğrul (TÜBA Young Academy Representative),

Tolga Uçak (Deputy Chief of Mission of the Embassy of Turkey), Gönül Demirel (Education Counsellor), and Associate Professor Dr Ahmet Temel (Religious Counsellor).

Through this collaboration, we also aim to foster joint initiatives that will benefit scientists from both countries that share common interests. This includes encouraging joint efforts to translate advanced research into practical applications, thereby contributing to economic growth and job opportunities.

Harmonising Nature and Humanity for the Tropics

The tropics are home to about three billion people, over half of whom are under five years old. This region also covers 40% of the world's farming spots and boasts a whopping 80% of the world's biodiversity. At the same time, the region faces rampant poverty and the worsening impacts of climate change. While there are scientific and technological remedies to some of the problems, the Tropics need solutions that are designed for its challenges while harnessing its values.



Realising these challenges, we teamed up with the Tropical Science Foundation to organise the 2nd International Conference on Tropical Sciences (TropSc 2024), gathering policymakers, industry players, academics, and the community for their diverse perspectives on preserving the region's natural resources.

The conference theme is **"Harmonising Nature and Humanity,"** and it comprises four tracks;



Tropical
Agriculture



Tropical Architecture
and Engineering



Tropical
Medicine



Tropical Natural
Resources

Three additional Special Themes:

- ☒ Open Science in Tropical Biodiversity
- ☒ Protection of Indigenous and Local Knowledge in the Tropics
- ☒ Climate Change in the Tropics

This year, we hosted nine webinars as a prelude to the international conference with experts from various backgrounds to illustrate possible solutions for issues faced by the region. The topics, which ranged from mountains and the oceans, raised awareness on preserving the tropics to maintain global biodiversity, mitigate climate change, and sustain the livelihoods of millions who depend on this vibrant ecosystem.



Watch
TropSc's
podcast here



ASEAN STI Ecosystem Foresight 2035

Malaysia, through MOSTI and ASM, carried out a foresight exercise toward developing the ASEAN STI Ecosystem Foresight 2035 Report. All ASEAN Member States (AMS) were engaged in the foresight exercise through the ASEAN Foresight Alliance (AFA) and ASEAN Foresight Research Cohort (AFRC) to draw inputs and insights on the STIE landscape of each AMS.

The foresight exercise involved organising **three workshops and several engagement sessions** towards the development of the study report.

- ✓ 3 AFRC Workshops involving AFRC from AMS
 - i. 1st AFRC Workshop (virtual) was held on 25 May 2022: This workshop aimed to understand current STI trends in the ASEAN region.
 - ii. 2nd AFRC Workshop was held in Bangkok between 27 to 28 July 2022. This workshop was organised to validate and rank future ASEAN STI signals. It was agreed that the aspiration of a future ASEAN is “Towards a dynamic STI ecosystem to drive economic growth, community empowerment, and environmental sustainability of ASEAN 2035.”
 - iii. The 3rd AFRC Workshop was held in Kuala Lumpur between 8 to 9 November 2022. This workshop validated the forces of change and developed future scenarios outlining key actions and activities.
- ✓ Virtual FGDs with AMS involving senior-level representatives from relevant ministries, agencies and institutions.
- ✓ FGDs were conducted as part of the validation process to understand current national strategies and initiatives being undertaken by each AMS with regards to planet, people and economic development. The FGDs were conducted virtually and joined by 100 participants from several ASEAN Member States.
- ✓ Podcast series: A series of podcasts was carried out under the banner of AFA with the objective of building networks between ASEAN and global foresight activities and initiatives. The podcast series focused on global megatrends and examined how these trends will impact science, technology and innovation in ASEAN.

The study report is targeted for endorsement at the Sub-Committee on S&T Infrastructure and Resources Development (SCIRD), Board of Advisor to ASEAN Committee on Science, Technology and Innovation (BAC), ASEAN Committee on Science, Technology and Innovation (COSTI) and ASEAN Ministerial Meeting on Science, Technology, and Innovation (AMMSTI) from 3 to 7 June 2024 at Siem Reap, Cambodia.



In conjunction with the 78th United Nations General Assembly (UNGA78) Science Summit, the Academy also participated in a webinar on 20 September 2023 titled “Sharing of Best Practices and Foresighting as Tools in Attaining the SDGs”. This session provided the UNGA78 Science Summit attendees with a glimpse of what can be expected from the ASEAN STI Ecosystem Foresight 2035 report.



Knowledge & Networks: The Lindau Effect



Since 2004, we have been actively sending young scientists to the Lindau Nobel Laureate Meeting, held annually in Germany. The Lindau Nobel Laureate Meeting, with its motto “Educate. Inspire. Connect.”, aims to help Nobel laureates share their knowledge with young scientists. Over the years, about 35,000 students, PhD candidates, and post-doc researchers worldwide have had the chance to join the enlightening discussions at this momentous event.

Through a careful selection process conducted by us and the Lindau Nobel Laureate secretariat, we selected **five young Malaysian scientists** to attend the 2023 Lindau Meeting from 25 to 30 June 2023:

1. **Dr Liyana Azmi**
Universiti Sains Islam Malaysia (USIM)
2. **Dr Norhasmira Mohammad**
Universiti Teknologi MARA (UiTM)
3. **Dr Wong Yin How**
Taylor’s University
4. **Dr Afifah Mohamed**
Universiti Kebangsaan Malaysia (UKM)
5. **Dr Wong Sok Kuan**
UKM

Our representatives mingled with 630 other young scientists from around the world and met directly with about 40 Nobel Laureates during this year’s meeting, which focused on Physiology and Medicine.

Activities at the meeting include lectures, panel discussions, and interactive sessions tailored for young scientists, such as open discussions and casual hangouts with the laureates during the “Laureate Lunch”. The meeting is all about fostering connections and sharing knowledge between laureates and the next generation of researchers.

Through these dialogues and interactions, the Lindau Meeting hopes to inspire these budding scientists to push science and

technology forward with a positive impact on society. By attending the meeting, our young scientists networked and swapped ideas with researchers from all over who share similar interests. It’s these casual chats and discussions that help them generate new research ideas and solutions, in addition to boosting their passion and confidence in their scientific work.



Malaysian participants to date:

84

Unleashing Potential:

The CERN Summer Student Programme

The European Organisation for Nuclear Research (CERN) organises the CERN Summer Student Programme (CSSP) every year in Geneva, Switzerland, for under- and postgraduate students of Physics, Engineering, Computer Science and/or Mathematics.

This year, Vincent Tee Ming Han from UM was selected to attend the CSSP from 3 July 2023 to 25 August 2023. The CSSP encompasses visits to accelerators and experimental areas, discussion sessions, workshops, and a poster session. Through this programme, students will experience day-to-day working in a multicultural setting, see the world-class facilities at CERN and participate in discussions and workshops with research leaders in their respective fields.

Participants in this programme are required to attend a tailored series of lectures presented by renowned scientists covering theoretical and experimental particle physics as well as computing. To fulfil programme requirements, students were expected to prepare a concise report on their CERN work for submission at the end of the programme.



74 candidates were interviewed by the ASM CSSP Selection Committee.



5 candidates were selected and submitted to CERN.



To date, **23 Malaysians** have participated in CSSP on Physics and Computing.



Fostering Future Leaders

YSN-ASM was established to provide a platform for young scientists in Malaysia to push science and become leaders in the field of STI. It also represents the voice of young scientists in Malaysia. These young scientists are devoted to increasing the STI landscape beyond their individual research interests.

Since the inception of YSN-ASM in 2012, its role in driving a flourishing ecosystem for young researchers in Malaysia has grown significantly. Since 2022, MOSTI upon recommendation from ASM, the Chairperson of YSN-ASM has been appointed as a permanent member of the National Science Council (NSC) to represent the voice of young scientists at the highest national level of STIE governance. In 2023, a special dialogue session was organised with YB Chang Lih Kang, Minister of MOSTI, in conjunction with YSN-ASM Colloquium. Members gained insights into how young scientists can influence the development of STIE ecosystem towards becoming a high-tech nation by 2030.

The 2023 YSN-ASM Chrysalis Award received 73 applications and 15 were shortlisted. The shortlisted candidates underwent an intensive training programme to equip them with a tech-based entrepreneurial skillset. This enabled them to be responsive, adaptive, and collaborative towards translating knowledge to benefit society.

YSN-ASM has continuously championed the enculturation of STI in society through various platforms. Programmes such as '*Borak Sains*' and '*Science Café*' make regular appearances in MOSTI's '*Minggu Sains Negara*' initiative, where the guest experts take the opportunity to share interesting facets of scientific knowledge in a digestible, easy-to-understand manner.

In 2023, one of the highlights of the outreach activities was the inaugural *Kembara Sains Borneo* (KSB) programme that provided immersive and interactive opportunities for students to learn about science, technology, engineering and mathematics (STEM). This also enabled students to emulate young scientists as role models in developing themselves as young science talents.



Chrysalis finalists during their presentation



YSN-ASM members participating in various activities during the colloquium

**YOUNGSCIENTISTS
NETWORK
MALAYSIA**



YB Tuan Chang Lih Kang encouraging young scientists to play more active role in shaping the Malaysian STIE landscape

YSN-ASM's international presence has also grown by leaps and bounds over the years as it attempts to bridge the international community with the budding group of young researchers locally. In 2023, representatives from YSN-ASM participated in several prestigious international events including the World Association of Young Scientists Summit in China, the 20th Annual Meeting of the Science and Technology in Society forum (STS forum) in Kyoto, Japan, the ASEAN Climate-Health Nexus Futures Symposium in Thailand as well as ISC, GKD. These platforms provided opportunities for networking, building meaningful connections, and positioning Malaysian young scientists in the global arena.

Catalysing Transformation:

ISTIC-UNESCO's Initiatives in STI Policy and Education

The International Science, Technology, and Innovation Centre for South-South Cooperation under the auspices of UNESCO (ISTIC-UNESCO) is a UNESCO Category 2 Centre hosted by the Malaysian government since 2008. The centre serves as an international platform for South-South Cooperation, providing sustainable programmes and services while promoting sustainable development. The Malaysian government, represented by the MOSTI, and UNESCO have entered into a six-year agreement to host the centre. Its current agreement runs from February 2022 to January 2028.

In 2023, ISTIC-UNESCO had organised a total of 42 events, with 27 programmes aligned with the centre's priority agendas of STI Policy, Open Science, Climate Change, STEM Education, and Digital Technology. These initiatives covered diverse areas, from capacity building and innovation excellence to expert consultancy, marking a pivotal year in advancing the global landscape of STI.

In 2023, ISTIC-UNESCO encountered the formidable task of aligning with rapid global shifts, addressing programme demand spikes, and navigating the post-normal times in the post-pandemic landscape. Challenges encompassed establishing international partnerships, adapting to a transformed science ecosystem, and securing vital funding from both external and internal sources. The centre responded with strategic measures, including regular environmental scans, programme scalability, and fostering collaborative efforts within the South-South Countries to ensure sustainability.

Building on the lessons learned from the past, the centre emphasises commitment to strengthen collaboration with governments, civil society, and the private sector, acting as a catalyst and facilitator of support as mandated by the Malaysian Government and UNESCO. As the centre progresses, ISTIC-UNESCO aims to solidify global influence, strategically shaping a diverse spectrum of STI services and cultivating long-lasting partnerships to enhance Malaysia's STI landscape.



ISTIC
INTERNATIONAL SCIENCE, TECHNOLOGY AND
INNOVATION CENTRE FOR SOUTH-SOUTH
COOPERATION UNDER THE AUSPICES OF UNESCO



42
programmes & events
7 national
4 regional
31 international



560
participants
156 Malaysians
290 Internationals



**Participation
by gender**
51% female
49% male



16
collaborations



8
Sustainable
Development
Goals (SDGs)
covered



02

BRINGING NOVEL IDEAS TO LIFE

Advancing Biodiversity Management and Real Time Monitoring with AI and IoT






Malaysia currently ranks 16th in the World Biodiversity Index. The Precision Biodiversity (PBD) Strategic Paper 2021 gave rise to the pilot project in the Pasoh Forest Reserve, Negeri Sembilan, entitled “Digitalisation and Internet of Things (IoT) Programme for Biodiversity”. This project is funded under the 12th Malaysia Plan (RMKe-12) Development Budget from 2022 to 2025.

The project aims to develop a comprehensive ecological database that uses artificial intelligence (AI) and the Internet of Things (IoT) to produce, process, and manage digital data for documentation, and species identification. This project gathers valuable data for scientific research, leading to discoveries in fields such as medicine, agriculture, and ecology. This project includes knowledge transfer that fosters network collaboration, and it is conducted by local experts through structured training programmes for operators at various levels on AI and IoT systems.

The year 2023 is significant as it marks the establishment of the PBD Alliance with 30 initial members from 14 organisations throughout Malaysia, chaired by Dr Helen Nair FASc. Quarterly meetings were held to promote collaborative sharing between the technical team and alliance members, ensuring ongoing dialogue and knowledge exchange among members.

Several stakeholder engagements have been conducted throughout 2023. From these engagements, we successfully produced ten modules consisting of knowledge on digitalisation and new technology for the Foundation training programme. The Foundation training spanned from September until December 2023 and was attended by 131 participants from the PBD Alliance. The training was important as a knowledge of precision biodiversity is critical to understanding complex ecological dynamics and predicting the impact of environmental changes.

The training programme structure includes:

-  **Foundation training 2023**
-  **Development training 2024**
-  **Adoption training 2025**

The biodiversity database, arising from the pilot project, was set up using the CAIRO Universiti Teknologi Malaysia (UTM) server as a comprehensive repository for both existing and newly acquired biodiversity data. **By the end of 2023, 2,820 images have been digitalised, encompassing 53 insect species from three families.** We have also annotated **17,161 images of camera traps** to train the AI model. As a result, the algorithm managed to identify 33 animals from the images. This pilot project not only aids in species identification but also serves as a robust dataset for training advanced AI models, marking a significant stride in harnessing frontier technology for a deeper understanding and conservation of our biodiversity.

We have developed a mock ecological simulator project to complement the initial database design and foundational data integration architecture. These elements serve as the foundation for developing a more sophisticated ecological simulator.

Moving from backend design and development in 2023, 2024 would be a pivotal year to install, test, and implement the AI model and IoT system on the ground with equipment such as robots, sensors, and drones. The ecological simulator has the potential to improve the efficiency of biodiversity management in Malaysia.



PBD Alliance Members:



Read
PBD's full report
here



Connected for Success:

Bridging the Digital Divide

We initiated this project to facilitate internet access to the unserved and underserved communities, focusing on students, teachers, and local communities.

Following the successful proof of concept in 2022, we submitted a proposal for the Wireless Bridging System (WBS) to MOSTI in July 2023 under the Bitara MADANI Programme. The project was then approved and selected as a High-Impact Project by the Ministry of Finance (MOF) under the *Inisiatif Segera Ekonomi MADANI: Memperkasa Rakyat 2023*. Funding of RM300,000 was allocated for the project, which was set to be implemented in Keningau, Sabah.

MOSTI proposed implementing WBS technology at SK Simbuan, Tulid, Keningau, Sabah, in response to the school principal's request for improved internet access to enhance teaching and learning. The development of WBS in this area will benefit 158 students, 15 teachers, and approximately 480 local community members.

Strategic Partners:



Watch
Wireless Bridging
System's video here



Together with the Universiti Tun Hussein Onn Malaysia (UTHM) Expert Team and Sabah Net representatives, a site visit was carried out to Sabah from 11 October to 14 October 2023. From the visit, two possible options were identified:

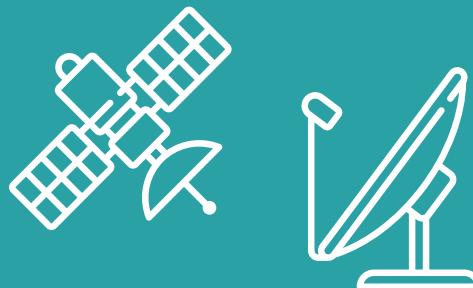
1

Installing connection poles (25.5 metre) at the Pusat Sinulihan Baru e-Desa and connecting poles (20.5 metre) near the school grounds.



2

Using a satellite-based internet provider as an alternative internet source, deploying it within the school grounds through the wireless bridging technology using multiple smaller poles (<10 metre) for faster implementation within 3-4 months.



The project is expected to be completed in **October 2024**.

Fusion of Creativity: The ASM ArtScience™ Initiative

The ASM ArtScience™ Initiative, established in 2019, brings together the worlds of art and science to spark new waves of creativity and innovation in Malaysia.

As a pioneer of the artscience movement in Malaysia, we aim to inspire a deeper appreciation for the arts while integrating it seamlessly into the fabric of scientific exploration. We believe that by fostering collaborations among musicians, engineers, anthropologists, designers, architects, and others, we can unlock new realms of possibility.

Our mission is simple yet profound: to cultivate creativity where art and science can intersect and to utilise art as a powerful tool in the integration of science into Malaysian culture. Together, we aim to forge a path towards a more vibrant and interconnected future.



ASM ArtScience™ Prize 2022 Exhibition **Theme: ArtScience™ Lens on Planetary Health**

The ArtScience™ Initiative is all about getting people excited about the art-science combo. The ASM ArtScience™ Prize 2022 in Malaysia is our way of bringing out the cool artist-scientist out there to show off their projects that blend art and science.

This year, we teamed with the Maybank Foundation and strategic partners such as UM, USM, and others, to zoom in on the theme “**ArtScience™ Lens on Planetary Health.**” We wanted to probe into how human well-being connects with nature. For this, we received several submissions that viewed this topic from various angles – artistic, philosophical, sociological, economic, and technological.

In total, we received **58 submissions** for the ASM ArtScience™ Prize 2022, coming from artists, scientists and designers who threw their hats into the ring for a chance to win the top prize. And out of those, **23 finalists** got to exhibit their works at Balai Seni Maybank, Menara Maybank, Kuala Lumpur from 19 June to 7 July 2023. The exhibit of the finalists’ work allowed everyone to examine the superb artscience concepts in each piece. We had a **diverse crowd of 1,130 visitors** swing by to view the finalists’ works.

**Read more about
ArtScience™ initiative
here**



Cosmic Connections: Langkawi

In another pursuit of the intersection between art and science, we were invited by the Langkawi Development Authority (LADA) to work with them to produce a coffee table book entitled **Cosmic Connections: Langkawi**. The book was intended to be the main promotional material for a new tourism segment introduced by LADA on Astrotourism.

This collaboration aims to revive the extraordinary aspect of the Island's history through the amazing work of scientists, artists and poets. This book allows the reader to see the confluence of astronomy, poetry, and visual art.

Contained in the book are 24 poems and seven arts interwoven with scientific astronomical narrative, replete with extraterrestrial images. The book illustrates the physical connection of life on Earth to the cosmos and the connection of Langkawi Island to celestial bodies in its past.

The completed coffee table book was launched and handed over to LADA on 3 December 2023.

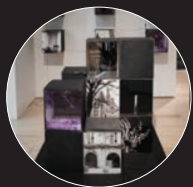


Tunku Temenggong Yang Teramat Mulia Dato' Seri Diraja Tan Sri Tunku Puteri Intan Safinaz Binti Almarhum Sultan Abdul Halim Mu'adzam Shah launched the coffee table book

ASM ArtScience™ Prize 2022 Winner Announcement Ceremony

A panel of experts evaluated the finalists for the ArtScience™ Prize, and the winner was announced at the Winner Announcement Ceremony on 4 July 2023. We were pleased to have YB Tuan Chang Lih Kang, the Minister of MOSTI, along with Tan Sri Dato' Sri Zamzamzairani Mohd Isa, the Chairman of Maybank and the Maybank Foundation, together with the ASM President, YM Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc at the announcement ceremony.

The team from Universiti Sains Malaysia wowed us with their bee house project, **"The Crown,"** which used IoT technology to enhance honey production. This team successfully secured the top spot in this competition.



We also awarded the project **"Woman in Black and White"** by a trio of UiTM lecturers with the Rising Star Award for their profound black and white photography.

And let's not forget **"Boxxie Head,"** a moving cardboard creation that won the People's Choice Award through online voting, commemorating the Sumatran rhinoceros.



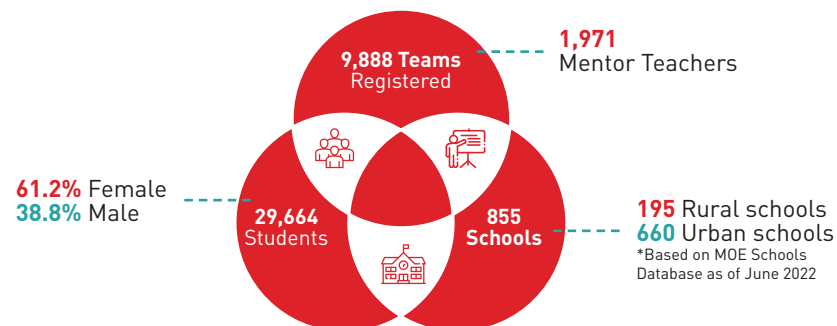
YB Tuan Chang Lih Kang, along with YBhg Dato' Ts Dr Hj Aminuddin Hassim, Tan Sri Dato' Sri Zamzamzairani Mohd Isa, Datuk Dr Tengku Mohd Azzman Shariffadeen FASc, and Academician Professor Emerita Tan Sri Dato' Seri Dr Mazlan Othman FASc with the winners

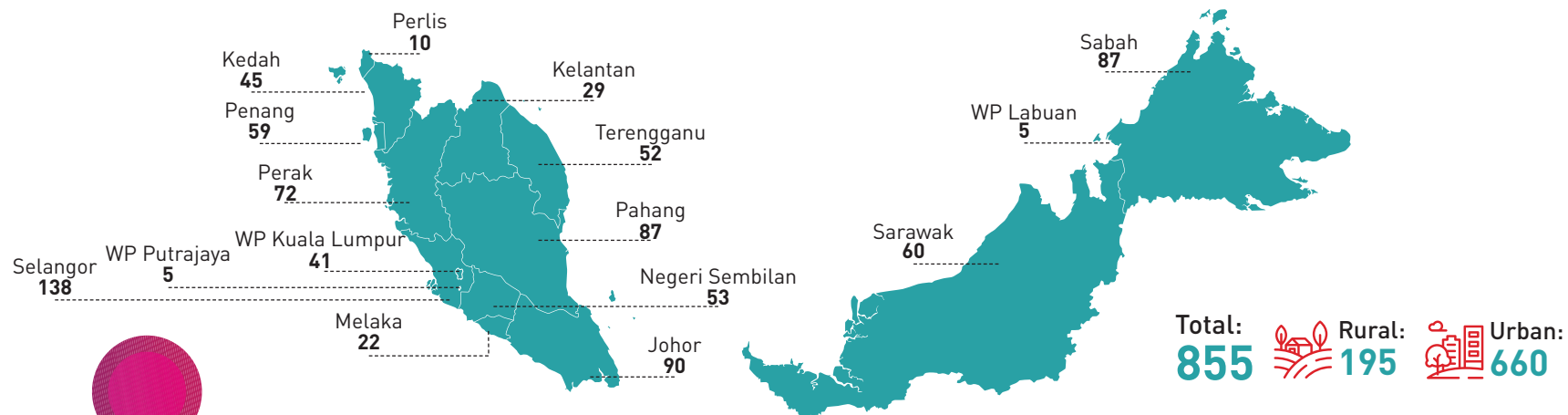
NSC 2023 Empowers Young Talents to Tackle Food Security

Food security is a critical global concern that encompasses the availability, accessibility, and stability of food supplies to meet the nutritional needs of a growing population. Ensuring food security involves addressing challenges such as climate change, population growth, economic disparities, and disruptions in the food supply chain.

Seeing the importance of mitigating this global cause for concern, we have selected “Ensuring Nation’s Food Security through Science, Technology and Innovation” as the theme for this year’s National Science Challenge (NSC), the nation’s premier science competition for secondary school students.

We are elated to receive the participation of almost 30,000 students in this year’s NSC, the highest number of participants in the competition thus far. Students from across Malaysia vied for the top spot in the competition to bring home the Prime Minister’s Challenge Trophy, among other fantastic prizes. We were fascinated with the innovative ideas the participants had to address the issue of food security. Perhaps one of these ideas could be a solution that could be further developed into innovation for the future.





- Increase in participation of nearly 154% compared to NSC 2022.
- This achievement marks the **highest participation** since ASM organised the NSC in 1999.
- Increase from 412 schools in 2022 to 855 schools in 2023.



Grand finalists:

Champion: Kolej Yayasan Saad
 1st runner-up: SMJK Jit Sin (CF)
 3rd place: SMJK Kwang Hua
 4th place: SMJK Chung Hwa (CF)
 5th place: SMK Infant Jesus Convent (M)

The WEHAB++ Committees address challenges in ten critical areas: Water, Energy, Health, Agriculture, Biodiversity, Blue Economy, Talent Development, Environment, Digitalisation, and Climate Change & Disaster Risk Reduction. These committees identify national needs and priorities, conduct studies, and develop papers on cross-cutting issues. They provide strategic input and feedback in their respective fields, collaborating with the ASM Expert Network and external experts to create concept papers.

Evaluation Paper on Sustainable Fertiliser Management for Paddy Production

Fertilisers play a major influence in the transformation of modern agriculture by increasing plant yield, thus playing a critical part in determining and sustaining food security in Malaysia. However, many farmers in Malaysia lack the knowledge of plant nutrition and are unfamiliar with the precise nutrient requirements necessary for optimal crop growth and productivity. Hence, recovery and adjustment measures in the fertiliser sector are essential to guarantee stability and efficacy in fertiliser use.

We organised the National Workshop on Fertiliser Management to Increase Paddy Yield for Food Security on 14 June 2023.

The key findings and recommendations from this workshop were then presented as *Kertas Pertimbangan ke Mesyuarat Jawatankuasa Eksekutif Mengenai Dasar Sekuriti Makanan Negara Bilangan 2 Tahun 2023* chaired by YB Datuk Seri Haji Mohamad bin Sabu, Minister, Ministry of Agriculture and Food Security (MAFS). The recommendations in the paper were well-received. Subsequent deliberation coordinated by the Malaysian Agricultural Research and Development Institute (MARDI), was carried out by the *Jawatankuasa Teknikal Bantuan Kerajaan Kepada Industri Padi dan Beras* (JKTBKKIPB) to review the fertiliser formulation to increase paddy yield in Malaysia.



Recommendations:

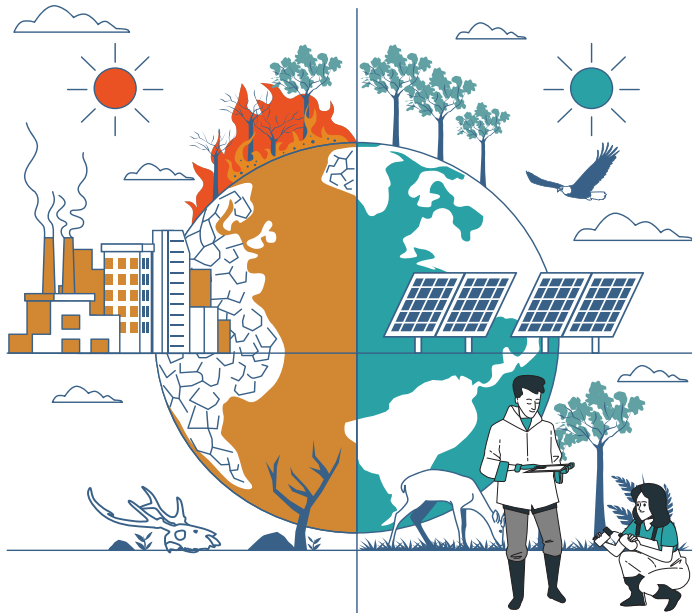
1. **Short term**
 - a. To review the existing subsidised NPK fertiliser formulation to incorporate micronutrients and consider reducing excessive potassium oxide (K_2O) content.
 - b. To conduct periodic soil analysis (every 5 years) to assess its pH and the content of nitrogen, phosphorus, potassium and magnesium (N, P, K, Mg) and micronutrients in each of Malaysia's paddy fields.
2. **Long term**
 - a. To accelerate the drafting of the Agrologists Act and empower the expansion of programmes with agricultural best practices (such as fertilising and disease control).
 - b. To accelerate the drafting of the Fertiliser Act to regulate the quality of fertilisers in the local market.

Collaboration with IPCC for AR7

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body that provides regular assessments on the scientific basis of climate change, its impacts and risks, and options for adaptation and mitigation. The 7th assessment cycle of the Intergovernmental Panel on Climate Change (IPCC AR7) includes a special report on Climate Change and Cities.

Following this, the WEHAB++ Climate Change and Disaster Risk Reduction (CCDRR) Committee, along with the Southeast Asia Disaster Prevention Research Initiative-UKM (SEADPRI-UKM), hosted “ASM-UKM-SEADPRI Forum Climate Change and Cities: Engaging in the IPCC AR7 Cycle” on 10 November 2023.

The forum gathered over 50 Malaysian experts, including researchers, policymakers, and practitioners, in the scoping exercise for the IPCC Special Report on Climate Change and Cities as well as to provide opportunities for Malaysian experts to contribute to the IPCC AR7 special report. The panel speakers guided participants on report preparation and the nomination process through their experiences in the previous IPCC report, AR6.



After the forum, a list of ASM experts was submitted to the IPCC through multiple nomination channels. We look forward to working hand-in-hand with the IPCC as the Technical Support Unit (TSU) under the Working Group (WG) III for the AR7. Professor Dr Joy Jacqueline Pereira FASc is a Co-chair of this working group and our experts will offer technical inputs. We will also connect with the Ministry of Natural Resources, Environment and Climate Change (NRECC), ASEAN Working Groups on Climate Change, and the ASEAN Centre for Climate Change (ACCC) based in Brunei.

Rescuing Langkawi's Treasure:

The *Gamat Emas* Revival Plan

***Gamat Emas* (*Stichopus horrens*) has no longer thrived in Langkawi since the 1990s. The extinction of *Gamat Emas* has impacted the industry, which is Langkawi's heritage and one of its main attractions.**

ASM, along with MOSTI and *Yayasan Inovasi Malaysia* (YIM) have embarked on this rehabilitation and conservation of *Gamat Emas* in Langkawi for the sustainability of the industry and biodiversity. We brought together a pool of experts together with strategic partners that we have identified, which include LADA, Fisheries Research Institute (FRI) Langkawi, and *Persatuan Koperasi Gamat*, to initiate this programme in Langkawi. This programme is slated to run for three years (2023 to 2026) and aims to conserve and preserve the livelihood of *Gamat Emas* for the future benefit of Langkawi.

The overarching objective of this programme is to restore the natural habitat of *Gamat Emas* in Langkawi. This, in turn, will create a new ecosystem for the economic sustainability of local industry players to breed their own *Gamat Emas* for commercial products. This project is unique as it incorporates indigenous technology and the involvement of local communities as the social innovation part as a means of employment and income generation.

Our expert team, led by ASM President, made their first official visit on 3 December 2023. During this insightful visit, we learnt about the *Gamat Emas* rehabilitation efforts at the FRI Langkawi and *Persatuan Koperasi Gamat*. ASM had also discussed with LADA on the future of the *Gamat Emas* programme and explored potential collaborations with other rehabilitation activities in Langkawi.

The outcome of this project is the successful breeding of *Gamat Emas* in Langkawi. To achieve this, we worked closely with technical experts from USM and Universiti Malaysia Terengganu (UMT) and has been extensively exploring potential innovation for new *gamat* products, including high-value added pharmaceuticals products while seeking ways to restore the habitat and ecosystem of *Gamat Emas* in Langkawi.

This programme encompasses three major phases:

 **Breeding and Rehabilitation**

 **Social Innovation for Product based on *Gamat Emas***

 **Ecosystem Recovery**

Towards a Robust STIE Ecosystem:

The 10-10 MySTIE Approach

We have developed the 10-10 MySTIE Framework as a strategic tool to transform Malaysia into a knowledge-intensive economy by design. The framework integrates ten key Malaysian socioeconomic drivers based on Malaysia's strengths and needs with ten global leading S&T drivers. The Framework also links science, technology and innovation priorities with the economy to enable the mission-oriented, focused, and strategic development of STIE initiatives.

The 10-10 MySTIE Framework takes a pragmatic and systematic approach to deep dive into the 30 national STIE niche areas known as Malaysia's Grand Challenge (MGC) to enable STI solutions for society's pressing needs.



This year, we have introduced the 10-10 MySTIE Technology Series and Innovation Kopitiam under Sensor Technology (one of the S&T drivers). The Technology Series kicked off with a National Sensor Technology Forum in July and the Artificial Intelligence Forum in November as its second instalment. This strategic dialogue platform was combined with the Innovation Kopitiam series. The series unites start-ups, non-profit organisations, and researchers to share ideas, scout opportunities, network, and form teams for stakeholders to exchange and discuss ways to unlock homegrown solutions.




Sharing session from industry players on sensor technologies




The Sensor Technology Forum paved the way for impactful collaborations on sensor technology advancements, particularly in IoT sensors and cybersecurity applications. It also forged a platform for stakeholders to network and nurture young talents in sensor technology, advancing Malaysia's ability to develop deep tech solutions. The momentum of strengthening the STIE ecosystem by connecting players and forging important conversations through the 10-10 MySTIE Tech Series and Innovation Kopitiam is set to accelerate to regional and state-level engagements in 2024. This aims to understand the challenges in implementing mission-oriented STIE projects on the ground and applying the framework at localities for value creation and innovation.







downloaded by
81 countries



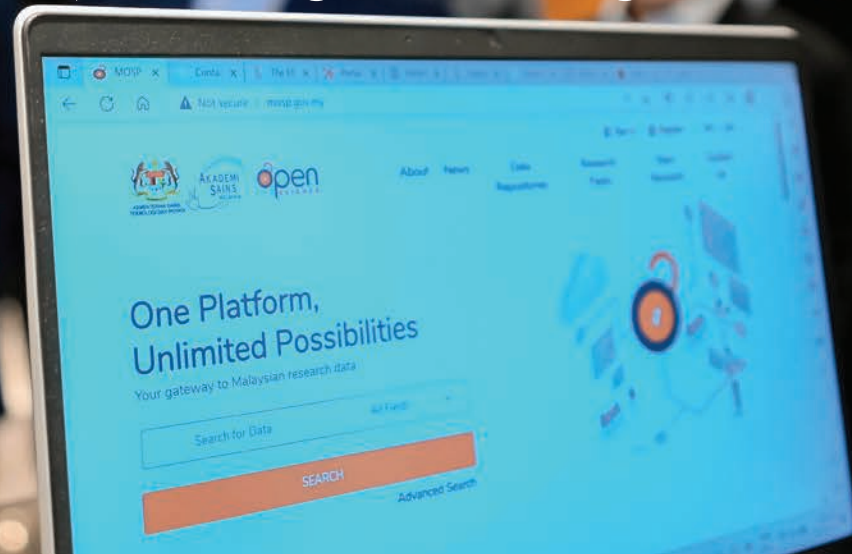
more than
15,000 downloads



around
25,500 readers

- **2 uptakes** in sensor technology and **5 different grant schemes** under MOSTI for MGC based on 10-10 MySTIE-based national niche areas.
- **Five inputs to external stakeholders** in the defence area, article contribution in Malaysia's RDCIE ecosystem, and linkage of STI to the economy for socio-economic benefits.
- **14 national and 2 international presentations** on 10-10 MySTIE Framework to improve understanding and uptake.

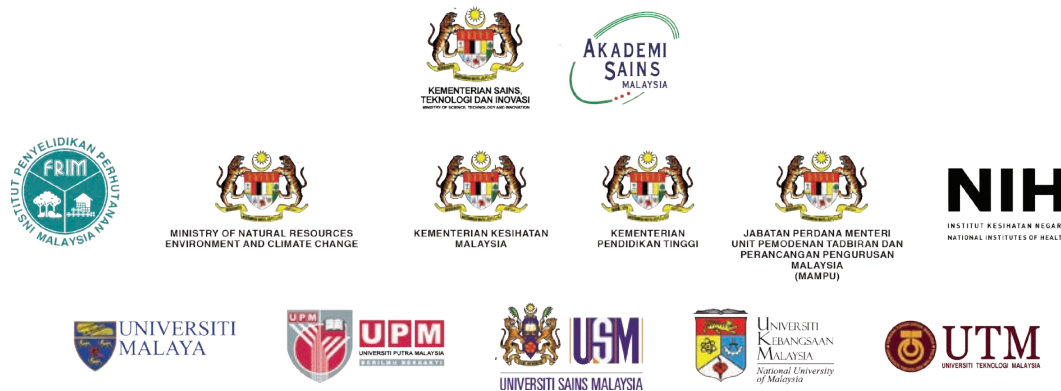
Breaking Barriers, Sharing Knowledge: The MOSP Initiative



MOSP is a research data-sharing platform which aim to increase accessibility and transparency for sharing of scientific and research data. We gather and consolidate Malaysia's research data in one platform and make these data accessible to everyone, following the international principle of FAIR: Findable, Accessible, Interoperable, and Reusable.

MOSP was launched on 16 May 2023 by the Deputy Prime Minister, YAB Dato' Sri Haji Fadillah Haji Yusof. In his speech, YAB Dato' Sri Haji Fadillah emphasised that through MOSP, Malaysia will be able to expedite research and accelerate innovations, foster multidisciplinary and international collaboration and save resources by reducing duplication and re-funding similar research projects.

At the same event, YAB Dato' Sri Haji Fadillah also conferred the merit certificate to nine Data Stewards and appreciation for Data Contributors of MOSP. Following its launch, the platform is now connected to 13 research data repositories listed below:

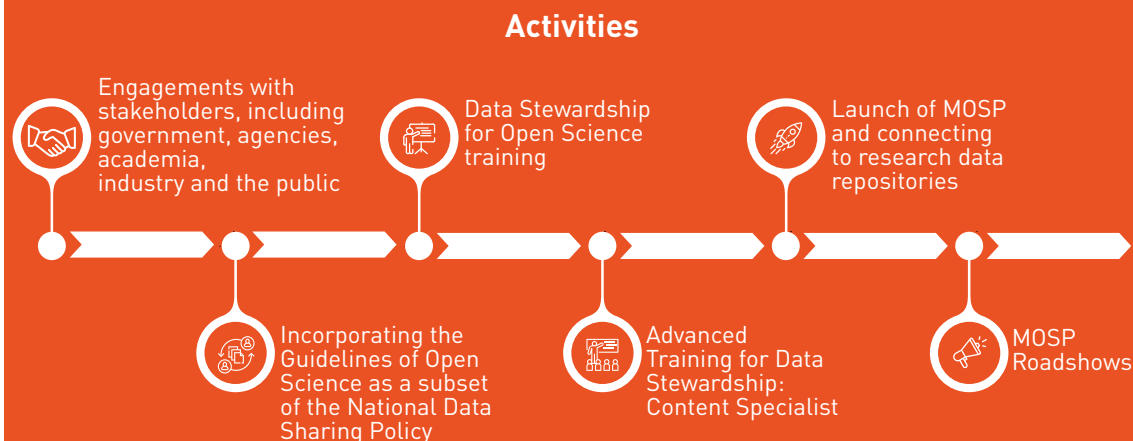




A forum on MOSP was organised during this event with the theme **“Open Science: Democratising Science to Foster Public Trust towards an Impactful Collaboration”**. The panellist at the forum, comprised of members from academia and industry, shared their experiences on how open science can assist and enhance their collaborative work as well as expand their research network. They also shared their thoughts on how open science can dismantle barriers, making science more accessible and inclusive to all, possibly leading to open innovation and the generation of indigenous technology in Malaysia.

As of 2023, the public can access over 1,900 research datasets from the 13 repositories in ten research fields. MOSP strives to be the gateway for research in Malaysia and has so far received more than 12,000 visits since its launch, locally and internationally.

In spite of our efforts, stakeholders are still wary of accepting open science. There are concerns about the system’s security and others taking up and plagiarising their ideas and data. Researchers also inquired about the incentive for practising open science. The National Guideline of Open Science addresses some of the concerns and the process of raw research data sharing, including those with confidential and sensitive issues.



- ### Outcomes
- The Guidelines of Open Science is now a subset of the National Data Sharing Policy.
 - MOSP was integrated with eight data repositories, including five research universities and three government agencies.
 - Training on Data Stewardship for Open Science has trained 261 data stewards nationally.
 - One advanced training session was conducted to upskill trained data stewards as content specialists.
 - Twelve roadshows were organised nationally, which helped us to increase awareness about the platform and initiative.

- ### Future plans
- To expand MOSP by connecting to more repositories from other universities and agencies.
 - To conduct training on data stewardship for open science to interested institutions and individuals.
 - To work with ISTIC on a proposal to establish an open science alliance and platform for ASEAN.
 - To propose the APEC Open Science Alliance initiation, fostering collaboration between APEC economies on open science.
 - To conduct awareness programmes and roadshows, increasing awareness of open science.

Malaysia Science Endowment: Fuelling Tomorrow's Breakthroughs

The establishment of the Malaysia Science Endowment (MSE) was a recommendation from the National Policy on Science, Technology, and Innovation (DSTIN) 2021-2030, implemented through MOSTI and ASM as the implementing agency. The formation of MSE was also highlighted in the Twelfth Malaysia Plan (12MP) under Strategy C1: Strengthening Capacity and Capability in Research, Development, Commercialisation, and Innovation.

We have outlined the purpose of this national R&D fund:



Sustainable Alternative Financing

Reducing the nation's dependency on the government in funding RDCIE activities by providing an alternate source of perpetual funding that complements the existing funding mechanisms.



Industry Linkages

Cultivating industry players' interest in R&D through match funding in collaborative and demand-driven R&D projects effectively increases the Business Expenditure in R&D (BERD).



International Collaboration

Forging international partnerships and collaboration to address global challenges whilst attracting R&D funding from abroad.



Talent Development

Nurturing talents in deep tech and future skills based on the 10-10 MySTIE.

We were also able to explore several potential collaborative and fund-matching opportunities with various international organisations. Among the discussions with these international organisations included encouraging collaborative and demand-driven R&D in Malaysia.

Following the approval of the trust deed by the MoF on 11 August 2023, MSE has secured RM250 million in special funds from KE in December of this year. Moving forward, we are actively seeking opportunities for fund matching with industries and international organisations.

Activities:

1. Engagement with MOSTI and its agencies, MoF, KE and secretariat of the National Trust Fund in designing the implementation and mechanism of MSE.
2. Explored potential collaboration and matching funds during the courtesy visits from the United Arab Emirates University (UAEU), Taiwan's National Science and Technology Council (NSTC), Korea Soongsil Cyber University International (KCU), and Islamic Development Bank (IsDB).
3. Held discussions with the Malaysia Petroleum Resources Corporation (MPRC), Malaysia-Thailand Joint Authority (MTJA), British Council, Royal Scientific Society of Jordan, and Bioeconomy Corporation to develop initiatives encouraging collaborative and demand-driven R&D in Malaysia.
4. Assumed the role of the National Representative Body (NRB) by nominating three peer-reviewed articles to compete in the second edition of the Frontiers Planet Prize (FPP), a prestigious award in recognising solutions for humanity's sustainable future within Earth's ecosystem.
5. Signed a three-year Memorandum of Understanding (MoU) with AT&S Malaysia. This MoU paved the way for a strategic partnership focusing on developing talents for the electronic & electrical (E&E) industry and enculturating STEM.

Strategic Partners:



- MOSTI and its agencies
- Ministry of Finance (MoF)
- Ministry of Economy (KE)
- National Trust Fund Secretariat

Innovate, Connect, Transform:

i-Connect Leading the Way

We have set up i-Connect to create and nurture a conducive innovation ecosystem in Malaysia towards increasing disruptive innovation. This will enable Malaysia to leverage new economic opportunities for Malaysian industries to enter new and emerging global markets.



The i-Connect Mission Mapping Workshop

(27 February 2023)

This workshop resulted in the formulation of the Mission-Oriented Moonshots tailored for each sector, strategically aligned with the national agenda.



The i-Connect Mission Mapping Endorsement Meeting

(19 April 2023)



Five i-Connect Steering Committee Meetings

In 2023, we approved six of eight collaborative projects, bringing 11 total projects endorsed under the i-Connect initiative. Some of these projects were channelled to the Strategic Research Fund (SRF), as we are one of the Implementing and Monitoring Agencies for this funding scheme. The summary of the approved projects is as follows:

11
Total projects
endorsed


Halal
Supply Chain
3


Fintech in
Islamic Finance
2

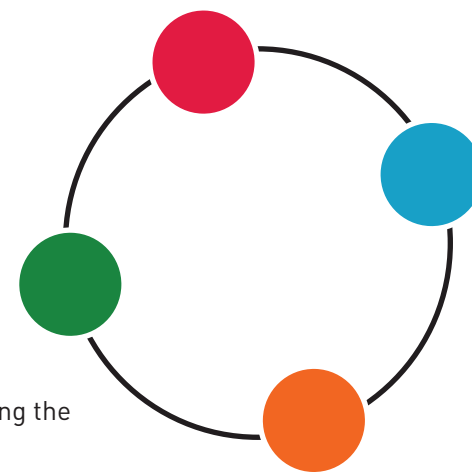

Health
and Wellness
2


Industry 4.0 in
Manufacturing
4

In June 2023, a project titled SIMPLE (Simplified Medical Platform for Emergencies) was successfully completed. This project received the MySTI label in September and was presented at the Malaysia Commercialisation Year (MCY)'s My Tech Pitch in October 2023.

Several i-Connect projects have also achieved notable milestones in their developmental phases, including attaining the Malaysian Digital (MD) status, winning prestigious international product awards, securing essential seed funding, and establishing a significant presence in the international market.

Moving forward, we plan to enhance i-Connect's existing framework through insights gained from the three-year pilot programme's implementation.



ASM Chapters:

Bridging Science Across Regions

We established the ASM Chapters to provide a platform for our ASM Expert Network to convene and coordinate programmes and activities within their respective regions. The Chapters objectives is to host targeted programmes reaching a broader audience within the local scientific community and consequently enhance ASM's visibility in the region.

ASM Roadshows: Connecting Communities

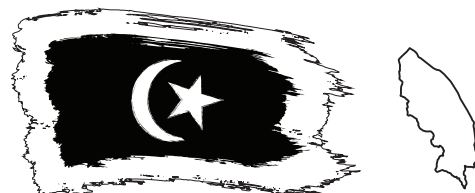
Sarawak and East Coast Chapter

ASM Roadshows were organised to introduce the ASM Expert Network and our programmes as well as to increase participation levels among the scientific community, professional bodies, and civil societies in the region. It also aimed to strengthen the relationships with existing and new strategic partners in the region.

This year, we conducted two roadshows, one each in Sarawak and the East Coast region respectively, led by the respective Sarawak and East Coast Chapters. During these roadshows, we also met leaders from the state government and industry to enlighten them on the roles of ASM as a thought leader and how we can work with them to achieve shared goals on STIE-related matters.



ASM Sarawak Chapter Roadshow
24 October 2023, UNIMAS



ASM East Coast Chapter Roadshow
6 November 2023, UMT

East Coast Chapter

The ASM East Coast Chapter organised four STEM Programme to encourage young minds to understand the value of higher education in creating a better future. The tailor-made programme for post SPM Science students was designed to expose the participants to Science and Technology via hands-on activities and fun learning experiences. Among the activities were talks, hands-on sessions, conduct of experiments in the university teaching laboratories, field learning experience, writing a scientific article and presentations. The four programmes were as follows:

- Computer Science for Youth Camp, CS4Youth organised in collaboration with the Universiti Malaysia Kelantan;
- Jr. Scientist 2B Camp organised in collaboration with the Universiti Malaysia Terengganu;
- Young Scientists Camp 2023, YSC23 organised in collaboration with the International Islamic University Malaysia; and
- Vacation Research Program (VRP) organised in collaboration with USM.



Students participated in hands-on activities on marine and aquatic science during the Junior Scientist 2B Camp in Terengganu



Participants engaging in the hands-on activities

Northern Chapter

ASM, in collaboration with USM, organised the **STEM Youth Program 2023 @ USM – ASM Northern Chapter** on 23 October 2023.

The purpose of this programme was to foster students' interest and learn culture in STEM by providing a platform to explore knowledge and develop students' research and innovation skills. The programme involved the participation of Year 6 students from schools in the states of Perak, Penang, and Kedah.

Sabah Chapter

The Sabah Chapter organised a hybrid webinar titled **“The Tropical Forest: 130 Million years old”** by Professor Dr Felix Tongkul FASc. His lecture revolved around his unique insights into Sabah's captivating ecosystem that thrived for over 130 million years. The speaker emphasised for the age of the tropical forest based on scientific records to be properly understood by the public so that misconceptions could be corrected.

On another note, the Sabah Chapter Meeting with the Deputy Minister of MOSTI, YB Datuk Arthur Joseph Kurup, and the ASM Expert Network in Sabah was held on 26 June 2023. The purpose of this meeting was to get acquainted with ASM experts in Sabah and to share information about the activities and programmes conducted by the ASM Sabah Chapter.

Southern Chapter

This year, the Southern Chapter organised two main programmes. **The Meet the Scientists Session and Mathematics Interactive Showcase** offered the public direct engagement with esteemed scientists and interactive demonstrations on the importance of mathematics in daily life and scientific exploration. Through hands-on activities and puzzles, participants of all ages were encouraged to explore the fascinating world of science and address mathematics education challenges at the school level, fostering a deeper understanding and appreciation for both disciplines. This programme was organised in conjunction with the *Minggu Sains Negara Johor* State level on 19 and 20 August 2023.

Furthermore, on 4 September 2023, ASM and UTM hosted the **“Merdeka Webinar: Envisioning Malaysia MADANI, the STIE Perspective”** delivered by ASM CEO Puan Hazami Habib, in celebration of the 66th Merdeka and 60th Malaysia Day. The webinar focused on leveraging STIE to realise the vision of a progressive and sustainable Malaysia MADANI or SCRIPT (Sustainability, Care & Compassion, Respect, Innovation, Prosperity, and Trust). The webinar emphasised the importance of STIE in sustainable development, technological inclusivity, economic growth, and social impact while highlighting the need for robust national STI capacities, strengthened partnerships, and nurturing national talent to advance STIE outputs.



Professor Dr Felix Tongkul FASc delivering his webinar



03

TOUCHING LOCAL COMMUNITIES & CRAFTING IMPACTFUL NARRATIVES

From Kota Marudu to Kudat: KSB Reaching Out to Sabah Community

We joined hands with KSTI to bring KSB Siri 1 to the Sabahans to instil a love for STEM. Kota Marudu, Pitas and Kudat were the major nodes where KSB was organised. We wanted to bring science closer to the hearts of the community and see how it is used in their daily lives. KSB also aimed to elevate the teaching and learning experiences of local educators, as well as weave science and technology with entrepreneurship to improve the livelihood of the community.

We were proud to have received 1,500 visitors, who came to experience the magic of science via the multitude of activities during KSB Siri 1. In turn, we were also enriched by the experience when we witnessed indigenous science in action of the tagal system, a river management system where rivers are assigned designated zones to preserve their ecosystem.



Locals get to take home some of the mushroom compost for them to try to grow mushroom at home



Students trying out activities and interact with scientists and experts

Watch KSB's
video here



Watch the Tagal
System video here



To find out the students' perception of science, we threw together a quick questionnaire for those who visited KSB in Pitav and Kudat. The results are as follows:

68%
of the
students

"STEM subjects
are easy to
understand!"

"We are
not interested in
science"

25%
of the
students

"We are interested
to continue our
studies in the
science stream!"

75%
of the
students

"Science
is
very difficult!"

21%
of the
students

At the end of the programme, we once again asked them the same questions to see if KSB had a positive impact:

97%
of the
students

"We are
more interested
to learn STEM
now!"



The 37th ideaXchange

“Pulling Malaysia out of the Middle-Income Trap: How to Achieve Critical Mass in the National Science, Technology, Innovation, and Economy (STIE) Ecosystem” was the theme of the 37th ideaXchange. We hosted this ideaXchange on 17 August 2023.

This gathering brought together key stakeholders in RDCIE landscape to brainstorm solutions addressing Malaysia’s declining trend in Gross Expenditure in Research and Development (GERD) and the supply of talent in high-skilled STIE fields.

According to our speakers during the session, Malaysia’s competitiveness has weakened due to outdated strategies in the global knowledge economy, causing a situation called the “middle-income country trap”. This discussion was prompted by the 2021 National R&D Survey findings, which were presented to the Cabinet. From that finding, the Prime Minister expressed concern about the nation’s declining GERD trends.

Moderator:

YM Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc
President,
ASM

Panellists:

Datuk Ts Dr Mohd Nor Azman Bin Hassan
Deputy Secretary General
(Technology Development),
MOSTI

Dr Ramli Nordin
Executive Director of Research Management Unit
(RMU)
Manufacturing Industry,
Science and Technology Section Division
KE

En Feizril Nurbi
General Manager (Corporate Strategy)
DuopharmaBiotech Berhad



R&D%

After the insightful session, these recommendations were synthesised:

- 1 Ensure a stable STIE ecosystem.**
 - Institutionalise key players in the STIE ecosystem (e.g., STI Act)
 - Long-term planning and government commitment to STIE
- 2 Strengthen regional economic clusters by nurturing the development of local technologies and startups in emerging technology areas.**
 - Adopting mission-oriented research and cluster-based approach.
 - Ensure researchers are impact-driven (revisit key performance indicators, KPIs) to realise ROV.
- 3 Bridge solution seekers with solution providers**
(e.g. National Open Innovation Platform/ MATCH platform by MRANTI)
 - Strengthen trust between industry and academia through a transparent and agile platform.
- 4 Establish an alternative funding model for sustainable RDCIE financing**
(e.g., MSE)
 - Utilise alternative funding sources, such as unclaimed money, cess funds (e.g., HRD Corp model) and encourage contributions from the industry to establish a sustainable endowment fund for R&D.
 - Increase interest in R&D and raise funding from the industry through a 50:50 R&D fund matching mechanism.
- 5 Set a reasonable GERD/GDP target**
(1.7% GERD/GDP was proposed)

The 38th ideaXchange

The 38th ideaXchange on 24 October 2023 focused on the theme “Indigenous Cultures, Practices, and Views from Borneo towards the Promotion of Planetary Health”. Through this, we aimed to amplify indigenous voices and promote global sustainability. Malaysia’s indigenous communities, especially in Borneo, have a long-standing history of protecting the environment and preserving natural resources.

Through the 38th ideaXchange, participants were exposed to how indigenous knowledge helped address local challenges, enhanced food production, health, and wealth distribution, prevented conflict, and managed local affairs. The Ministry of Tourism, Creative Industry & Performing Arts Sarawak also shared its efforts to preserve indigenous culture, including traditional knowledge such as folklore, dances, and musical instruments. These efforts were crucial for passing down ancestral wisdom.

Moderator:

Madam Margarita Naming

Deputy CEO of Sarawak Biodiversity Centre

Panellists:

Professor Dr Poline Bala

Director, Institute of Borneo Studies, UNIMAS

Dr Elena Gregoria Chai Chin Fern

Principal Assistant Secretary of the Ministry of Tourism, Creative Industry & Performing Arts Sarawak



STIE Talent as Enabler towards Malaysia MADANI



We held the 15th General Assembly (GA) on 8 August 2023 at the Asian International Arbitration Centre, Kuala Lumpur, to discuss “Science, Technology, Innovation, and Economy (STIE) Talent as Enabler towards Malaysia MADANI”.

We understand the importance of assessing Malaysia’s readiness for STIE talent to support the Malaysia MADANI framework, both now and in the future. Collaboration among institutions, industry players, and the government is vital to revamping the education platform and ecosystem. Through this collaboration, local talent can be nurtured to compete globally while making a positive impact locally.

During the GA, the panellists emphasised the importance of early exposure to the STIE to ignite our youths’ interest. They also iterated that talents with a blend of intelligence and adaptable skills would make them future-proof. Furthermore, experiential learning will provide a well-rounded understanding of the real world, which students need to be exposed to. This ensures graduates will become individuals who can advocate sustainability in the future.

By joining forces to ensure the above visions are achieved, we hope to secure Malaysia’s future and play a significant role in advancing STIE worldwide.

Moderator:

Professor Dr Abhimanyu Veerakumarasivam
Provost,
Sunway University

Panellists:

Mr Tan Eng Tong
Chief Executive Officer,
Penang Skills Development Centre

Dato’ Professor Dr Elizabeth Lee Fuh Yen
Group Chief Executive Officer,
Sunway Education Group

Professor (B) Dr Rose Alinda Alias
Secretary-General,
Akademi Profesor Malaysia

The FAScinate sessions are held to illuminate our audience's understanding and appreciation of STIE. These short and casual sessions feature our own Expert Network, who are also "role models" who share their achievements and personal journey of acquiring knowledge. FAScinate is a play on the word "fascinate" combined with "FASc", the abbreviation for Fellow of the Academy of Sciences Malaysia.

This year, FAScinate focused on the theme "Precision Biodiversity" to educate the community on understanding complex ecological dynamics in a digestible format and the impact of environmental changes. Four Fellows, two TRSM recipients and two YSN-ASM members of different expertise shared their knowledge on this subject matter.



Associate Professor
Dr Lim Po Teen -
Unveiling the Killer Algae



Professor Ts Dr Kasturi
Devi Kanniah FASc -
Eyes in the Sky:
Monitoring Biodiversity
Loss



Dr Ravigadevi
Sambanthamurthi FASc -
Bittersweet Harvest:
The Oil Palm as a Source
of Controversy and
Sustainability



Associate Professor Ts Dr
Aslina Baharum -
Digital Jungle: Immersive
Technology in Precision
Biodiversity



Professor Ir Ts Dr Ahmad
'Athif Mohd Faudzi -
Robotics, IoT and Artificial
Intelligence Technologies
for Precision Biodiversity



Professor Dr Ahmad
Zaharin Aris FASc -
Contaminants of Emerging
Concern in Water:
The Invisible Visible



Professor Dr Wickneswari
Ratnam FASc -
Going Wild with Rice



Dr Abe Woo Sau Pinn -
Diving Deep into
Uncovering Malaysia's
Marine Biodiversity



Total number of speakers to
date:
37



Total number of sessions:
9



Total number of viewers to
date:
44,622

Scan to watch



Minggu Sains Negara:

Bringing Science to the Community

It had been an exhilarating journey this year as we unveiled an array of dynamic activities as part of our programme. From interactive contests to engaging awareness programmes, we had curated an exciting line-up that promised to ignite curiosity, foster innovation, and inspire action.

Borak Sains

We organised the *Borak Sains* sessions as a casual way to convey science, using Bahasa Melayu to reach a wider audience. This year, we organised three *Borak Sains* sessions with the following topics:

- 1 **17 April 2023**
“*Malaysia Bakal Tenggelam, Bersediakah Kita?*”
by Dr Nina Diana & Associate Professor
Dr Fiffy Hanisdah in conjunction with
MSN Launching (online session) **(PUT PARTICIPANTS)**
- 2 **21 August 2023**
“*Pencemaran Mikroplastik*”
by Dr Manraj Singh Cheema during KSB
(121 participants)
- 3 **22 August 2023**
“*Pengenalan STEM*”
by Dr Mailin Misson Hadirin also during KSB
(263 participants)

Ceritera SciArt

We encouraged school students to explore science at home, create science discussions between them and their family members, inspire participants in self-exploration of science topics, and meaningfully link the world of arts and science.

The contest took place from 15 June to 29 August 2023 and was participated by 231 students, which was a quadruple increase from last year.

It included two categories:

1. **Primary School Category**
(7-12 years old)
2. **Secondary School Category**
(13-17 years old)

Three of our programmes, KSB, NSC 2023, and the ArtScience™ initiative, were also affiliated with MSN, resonating with the call to expand science to Malaysians from all walks of life.

Ethical Excellence:

Transforming Research Practices with MCRCR

Since 2022, ASM had been given the mandate to champion ethical practices in research by the NSC. This gave rise to the Malaysian Code of Responsible Conduct in Research (MCRCR) as a tool for inculcating and prioritising ethics and integrity in the research process. This ensures that the quality of research meets international standards, thus ensuring our researchers' expertise is recognised and respected at the global stage.

Objectives of MCRCR:



To instil research integrity amongst local researchers and scientists.



To promote efficient implementation of policies and strategies through transparency and accountability in research.



To demonstrate that Malaysian researchers value research ethics and integrity in the conduct of all studies.

On 2 November 2023, we were invited to organise the MCRCR course by Institute for Medical Research (IMR). Attendees underwent the assessment on the second day of the course to evaluate their comprehension of the subject, which they passed with flying colours.

Despite its importance, the MCRCR is relatively new to many Malaysian researchers and scientists. Thus, increasing its visibility and impact would be of the utmost priority. We have started recording the MCRCR to transition it to an online learning platform. This is an ongoing process, which we target to be completed in 2024. This transition aims to extend the benefits to researchers across Malaysia, ensuring accessibility regardless of location and time, as online learning offers ease of access.

The end game will be embedding MCRCR into the course for researchers in higher learning institutions to ensure eligibility for collaboration network and international research grants.



This course was conducted by the MCRCR instructor, Dr Chau De Ming, and was attended by **44 participants** comprising scientists and researchers.



Since 2022, a total of **79 researchers** have received certification on MCRCR, which is valid for five years.

Crafting Impactful Narratives

Our Communication Team is the driving force behind ASM's impactful outreach, crafting compelling narratives to engage diverse audiences. Our strategic approach in disseminating scientific insights to a broad audience ensures our message resonates locally and globally, fostering dialogue and understanding of the importance of STIE.

Follow our
Social Media



Videos recorded and produced
127



Total recording time
105



Estimated production value
RM250,000



Factsheets

Total engagements
1,772

Total shares
355



Social Media Community

2023: 62,438

(+7,954 from 2022)



ASM Podcast

Total engagements
1,904

Total shares
105

Total plays
417

Global Streaming



Top three podcast episodes



National Science
Challenge: Reviving
STEM Interest in
Gen-Z



From Penang to
Japan: The National
Science Challenge
Winner's Odyssey



How Does the Field
of Medicine Support
Research Data
Sharing?



YouTube Channel

Total views
97,329

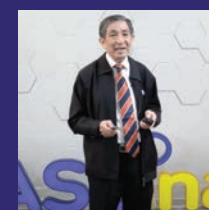
Total shares
2,270

Most watched videos



Event highlights: 2022
National Science
Challenge (NSC)
Grand Final

84
hours



Our Malaysian Tin
Industry: to Mine or to
Mind? | FAScinate™

30
hours



2022 YSN-ASM
Chrysalis Award
Grand Final Pitch

28
hours

ASM Press:

Celebrating Science Beyond Boundaries

Growth in our circle of influence is a testament to the importance and expansive reach of ASM's publications. With each publication, we embark on a quest to spread the impact of our work to the stakeholders, as a changemaker in STIE. From the intricate details of scientific research to the profound impact of our policy recommendations, every word penned seems to resonate across continents.

Together, we amplify scientific voices in the local and global scientific community, fostering collaboration, driving change, and inspiring innovations. We will continue to push boundaries, break barriers, and soar to new heights.



Scan to read
our publication



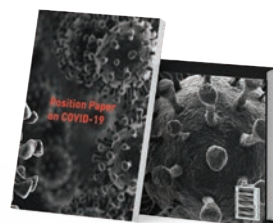
Studies



Development of the Research, Development, Commercialisation, Innovation and Economic Roadmap (R, D, C, I & E) commissioned by MOSTI



Position Paper on Blue Economy



Position Paper on COVID-19



Assessment on the Sustainability of the Tasik Chini Basin and Tasik Chini Biosphere Reserve

Reports



Guidelines on Open Science (OS) in Public Funded Research



2022 ASM Annual Report



ASM Expert Network 2023



Cosmic Connections Langkawi

e-Publication

Published
(as of 2023) **132**

Readership
(2023) **27,872**

Impression
(2023) **174,230**

Downloads
(2023) **17,556**
from 78 countries



ASM Science Journal

Article published
70

185,652
visits to
Open Access Journal



ASM Focus

12 Issues

103 Published Articles
78,470 Readership



e-estidotmy

Materials published
254

Readership
26,259

IN MEMORIAM



Professor Dr Tan Soon Guan FASc

28 December 1947 – 28 February 2023

The late Professor Dr Tan Soon Guan FASc, was a luminary in molecular population genetics. He embarked on a transformative academic journey that began with the completion of his BSc (Hons) at UM in 1971. Following his passion, he pursued a PhD at the University of Hawaii, culminating in 1975. Dr Tan's expertise and commitment to his field became evident when he achieved the pinnacle of academia, becoming a full professor in 1995.

In recognition of his outstanding service and dedication to scientific pursuits, Dr Tan was honoured with the Johan Setia Mahkota (J.S.M.) in 2000, a prestigious Order of Chivalry (Third Class) bestowed on the occasion of the Birthday of His Majesty Yang di Pertuan Agong (King) of Malaysia. This accolade reflected not only his academic prowess but also his commitment to the betterment of Malaysia's scientific landscape.

In 2012, Dr Tan was distinguished as a Top Research Scientists Malaysia, a title that underscored his significant impact on the scientific community. His research focused on the applications of biochemical and molecular polymorphisms, unravelling the intricacies of various genera, species, cryptic species, varieties, races, breeds, strains, and populations within Southeast Asia's rich biodiversity.

His prolific body of work is evidenced by over 460 papers published in international and national scientific journals, conference proceedings, bulletins, and book chapters. Dr Tan's contributions extended beyond his research, as he actively engaged with scientific societies, including the Malaysian Nature Society, the Malaysian Society of Biochemistry and Molecular Biology, the Genetics Society of Malaysia, and the Fisheries Society of Malaysia.

His legacy will serve as a beacon, guiding the way for aspiring scientists to navigate the complexities of genetic exploration with passion and unwavering dedication.



Professor Dr Abdul Manaf Ali FASc

14 August 1957 – 16 April 2023

Allahyarham Professor Dr Abdul Manaf Ali FASc was a distinguished figure in the field of animal cell culture, specialising in hybridoma technology, cell-based bioassays, and natural product bioactivities. With a PhD in Experimental Haematology from St. Andrews University, Scotland, his academic journey was characterised by substantial contributions and recognition.

His significant impact on biotechnology and natural products was evident through his involvement with the Malaysian Society for Molecular Biology and Biotechnology, as well as the Malaysian Natural Products Society. He co-founded and served as the inaugural Secretary of the Malaysian Society for Molecular Biology and Biotechnology, later assuming the presidency from 1997-1999. Additionally, he held the position of managing editor for the Asia Pacific Journal of Molecular Biology and Biotechnology from 1997-2001, a journal recognised in the Institute of Scientific Information (Current Contents) and the Cambridge Abstract Databases.

In 2008, he received the honour of serving as a technical advisor for cell culture experiments in space by ANGKASA, MOSTI, showcasing the depth of his expertise in cutting-edge research. Beyond his scientific endeavours, Professor Dr Abdul Manaf Ali had made meaningful contributions to Malaysian society through the Interfaith Outreach Program. As the organisation's advocate, he played a pivotal role in fostering understanding among Malaysians of diverse religious backgrounds and facilitating assistance to those in need.

The legacy of Allahyarham Professor Dr Abdul Manaf Ali FASc stands as a testament to his multifaceted impact, encompassing scientific innovation, leadership in academic societies, and a dedicated commitment to societal well-being.



Professor Dato' Dr Goh Khean Lee FASc

15 July 1956 – 6 May 2023

The late Professor Dato' Dr Goh Khean Lee FASc, born July 15, 1956, in Penang, devoted his entire academic and professional journey to advancing gastroenterology, hepatology, and digestive sciences in Malaysia, the Asian Pacific, and globally. As a distinguished figure in the international arena, he was renowned for his leadership, acclaimed teaching, and mentorship over the years. His influence extended to training numerous gastrointestinal fellows from Malaysia, the Philippines, Myanmar, Thailand, Mauritius, and Morocco.

Beginning 1993, Professor Dato' Goh had organised an annual international endoscopy workshop within his GI endoscopy unit, garnering widespread recognition on the global stage. The University of Malaya Medical Center Endoscopy unit, under his guidance, achieved the prestigious title of Center of Excellence from the World Endoscopy Organisation, acknowledged from 2008 to 2014 and subsequently from 2015 to 2020.

Professor Dato Goh's contributions to Gastroenterology and Hepatology resonate deeply within Malaysia and beyond. In 2011, he received the esteemed national Merdeka Award for Outstanding Scholastic Achievement, recognising his role in elevating the study and practice of Gastroenterology and Hepatology in Malaysia to global standards. The American Society of Gastrointestinal Endoscopy (ASGE) honoured him with the International Service Award 2014. His achievement was further acknowledged in 2000 when he was awarded the Datukship by the Sultan of Perak, Sultan Azlan Shah.

Professor Dato' Goh's pivotal role in establishing the nation as a centre of excellence in gastroenterology and hepatology had positively impacted thousands of lives, while also inspiring the younger generation to aspire to higher standards in the field of medicine.



Dr Chan Ying Kwok FASc

4 September 1947 – 08 July 2023

The late Dr Chan Ying Kwok was a distinguished fruit breeder in Malaysia, earning his Bachelor of Agricultural Science (Hons.) from UM (1972), a Masters in Horticultural Science from the University of California (Davis) (1979), and a Doctor of Philosophy in Genetics from UM (1995). Embarking on his career in plant breeding at the Malaysian Agricultural and Research Institute (MARDI) in 1972, Dr Chan's impact was profound.

Renowned for his expertise in papaya and pineapple research, Dr Chan's pivotal role in developing the Eksotika papayas positioned Malaysia as a leading global papaya exporter in the 90s, boasting an annual export revenue of RM120 million. In pineapple breeding, he introduced the Josapine and Maspine varieties, with Josapine being the world's first commercial pineapple hybrid and a cornerstone in the country's pineapple industry, estimated to be worth RM60 million annually.

Dr Chan's pioneering breeding techniques, including backcross breeding for Eksotika papaya and hybridisation techniques for Eksotika 2 and Josapine pineapple, had become standard tools worldwide. His global recognition was reflected by invitations to speak at numerous national and international symposia and conferences as a keynote and lead speaker. He had received numerous accolades, including the MARDI Research Excellence Awards (1984, 1997, and 2004), the Kesatria Mangku Negara (KMN) from the King (1997), Toray Science and Technology Award (2000), MARDI Horticulture Writer's Awards (2000-2002), International Invention, Innovation, Industrial Design & Technology (ITEX) Bronze Medal (2004), and the MARDI Science and Technology Innovation & Commercialisation Gold Medal (2005).

Dr Chan's colleagues hold him in high esteem for his tireless commitment, innovative spirit, and transformative impact on tropical fruit research. His remarkable 40-year journey was a chronicle of commercial success, a narrative of resilience, a pioneering spirit, and an enduring legacy shaping the future of tropical fruit breeding worldwide.

FINANCIAL STATEMENTS

FINANCIAL OVERVIEW AND ANALYSIS

The financial statements of the ASM and its reports are prepared in accordance with the Academy of Sciences Malaysia Act (ACT 524) and the Malaysian Public Sector Accounting Standards (MPSAS). This report aims to describe the financial position of ASM as well as a summary of financial transactions for the year ended 31 December 2023.

The Financial Statements for the year ended 31 December 2023 were prepared and submitted to the Auditor General on 24 April 2024. The Auditor General audited the Financial Statements 2023 and issued the Auditor General's Certificate in June 2024.

STATEMENT OF FINANCIAL POSITION

ASM's Financial Position in 2023 recorded an accumulated surplus amounting to RM13,426,543 [2022: RM13,946,287]. The total assets that have been recorded in 2023 were RM272,398,185 [2022: RM26,671,860] while the total liabilities were RM258,971,642 [2022: RM12,725,573]. This significant change was due to ASM receiving an allocation of RM250,000,000 under RMK-12 Development fund for MSE from KE through MOSTI.

STATEMENT OF FINANCIAL PERFORMANCE

ASM recorded a deficit after tax in 2023 amounting to RM519,744, compared to 2022 which recorded a surplus after tax amounting to RM2,445,741. This shows that the overall expenditure of ASM for the year 2023 was 102%. This significant change was due to an increase in deferred grant expenditure, depreciation of Property, Plant and Equipment and disposal of the MOSP repository to four universities.

FINANCE COMMITTEE CHAIRPERSON AND MEMBERS 2023/2025



1



2



3



4



5



6



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8

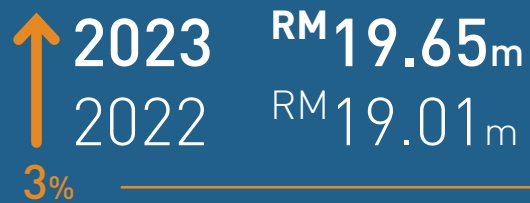


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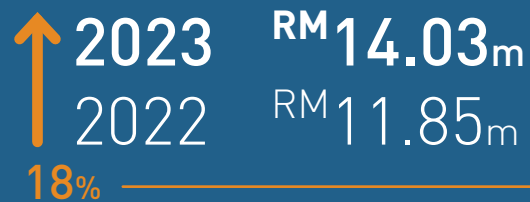
1. Academician Datin Paduka Setia
Dato' Dr Aini Ideris FASc
Chairperson
2. Ts Dr Chantara They Ratnam FASc
3. Ir Ts Choo Kok Beng FASc
4. Dato' Dr Jalaluddin Harun FASc
5. Professor Dato' Dr Mohd Ali Hassan FASc
6. Emeritus Professor Dr Normah Mohd Noor FASc
7. Professor Datuk Dr Rohana Yusof FASc
8. Dr Zainal Ariffin Ahmad FASc
9. Professor Dr Zainuriah Hassan FASc

FISCAL POSITION

INCOME



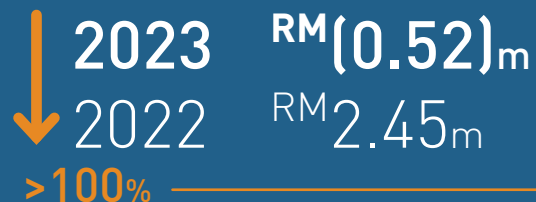
OPERATING EXPENSES



GRANT EXPENSES



(DEFICIT) / SURPLUS



ASSET AND LIABILITY

INVESTMENT



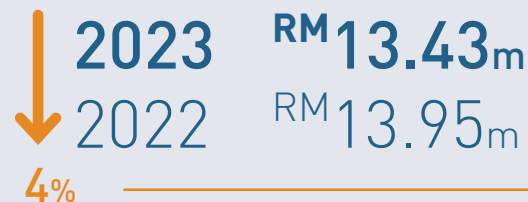
PROPERTY, PLANT & EQUIPMENT



DEFERRED GRANTS

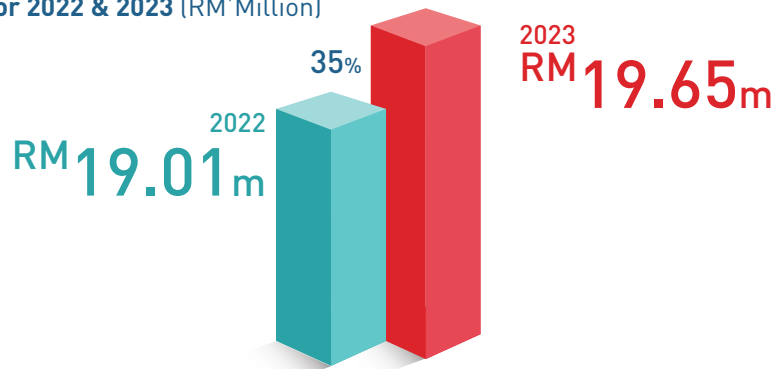


NET ASSETS



DASHBOARD FOR THE YEAR 2023

Comparison of income
for 2022 & 2023 (RM'Million)



Top three incomes for 2023 (RM'Million)

- 1 Operating Grant RM13.94m
- 2 Amortisation of Deferred Grant RM3.96m
- 3 Fixed Deposit & Current Account Interest RM0.66m

Investing is a way to increase the potential amount of money owned.

Fixed Deposit
Certificates

69



The average effective interest rate
weight for the year ending 2023 was

4.10%



As of the end of 2023, ASM's
fixed deposits amounted to

RM264.4m



ASM's assets are divided into two categories which are Tangible and Intangible Assets.

TANGIBLE ASSETS

Total Assets

427



Net Amount

RM3.9m

INTANGIBLE ASSETS

Total Assets

1



Net Amount

RM0.5m

Research and Programme Grant allocations received from various Ministries.

Deferred Grant

RM26.0m



Deferred Grant International

RM12.0m

Development Grant

RM259.2m



Advance Received

RM0.68m

Accumulated Surplus for four consecutive years.

2020

RM9.4m

2021

RM11.5m

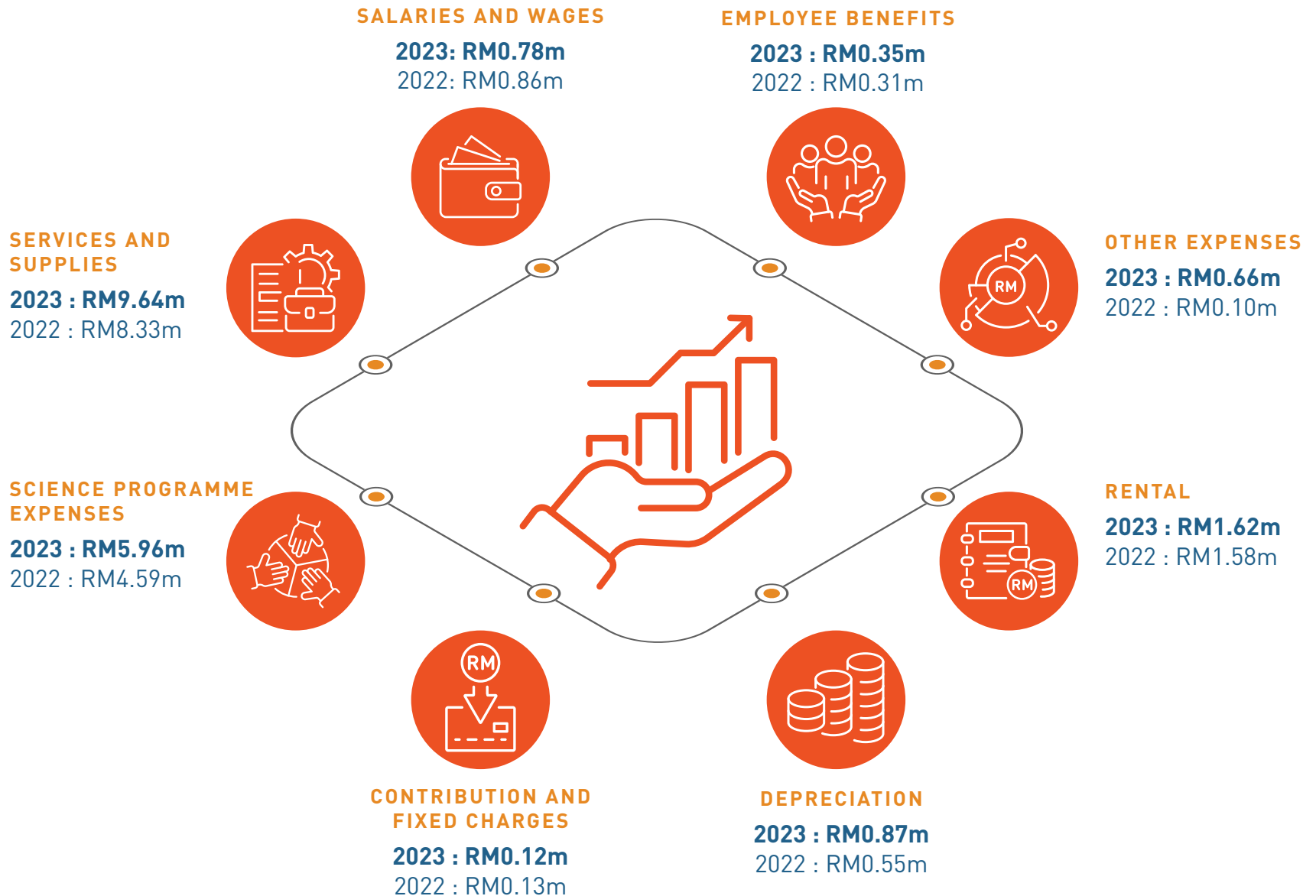
2022

RM13.9m

2023

RM13.4m

EXPENDITURE PERFORMANCE





**CERTIFICATE OF THE AUDITOR GENERAL
ON THE FINANCIAL STATEMENTS OF
ACADEMY OF SCIENCES MALAYSIA
FOR THE YEAR ENDED 31 DECEMBER 2023**

Certificate on the Audit of the Financial Statements

Opinion

I have authorised a private audit firm pursuant to subsection 7(3) of the Audit Act 1957 [Act 62] to undertake an audit of the Financial Statements of the Academy of Sciences Malaysia. The financial statements comprise the Statement of Financial Position as at 31 December 2023 of the Academy of Sciences Malaysia and the Statement of Financial Performance, Statement of Changes in Net Assets, Statement of Cash Flows and Statement of Comparison Budget and Actual for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, as set out on pages 3 to 34.

In my opinion, the accompanying financial statements give a true and fair view of the financial position of the Academy of Sciences Malaysia as at 31 December 2023, and of its financial performance and its cash flows for the year then ended in accordance with the Malaysian Public Sector Accounting Standards (MPSAS) and the Academy of Sciences Malaysia Act 1994 [Act 524] requirements.

Basis for Opinion

The audit was conducted in accordance with the Audit Act 1957 and the International Standards of Supreme Audit Institutions. My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my certificate. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Independence and Other Ethical Responsibilities

I am independent of the Academy of Sciences Malaysia and I have fulfilled my other ethical responsibilities in accordance with the International Standards of Supreme Audit Institutions.

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Information Other than the Financial Statements and Auditor's Certificate Thereon

The Council of the Academy of Sciences Malaysia is responsible for the other information in the Annual Report. My opinion on the Financial Statements of the Academy of Sciences Malaysia does not cover the other information than the financial statements and Auditor's Certificate thereon and I do not express any form of assurance conclusion thereon.

Responsibilities of the Council for the Financial Statements

The Council is responsible for the preparation of Financial Statements of the Academy of Sciences Malaysia that give a true and fair view in accordance with the Malaysian Public Sector Accounting Standards (MPSAS) and the Academy of Sciences Malaysia Act 1994 [Act 524] requirements. The Council is also responsible for such internal control as the Council determines is necessary to enable the preparation of the Financial Statements of the Academy of Sciences Malaysia that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements of the Academy of Sciences Malaysia, the Council is responsible for assessing the Academy of Sciences Malaysia's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the Financial Statements of the Academy of Sciences Malaysia as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditor's Certificate that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards of Supreme Audit Institutions will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the International Standards of Supreme Audit Institutions, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- a. identify and assess the risks of material misstatement of the Financial Statements of the Academy of Sciences Malaysia, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may

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involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;

- b. obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Academy of Sciences Malaysia's internal control;
- c. evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Council;
- d. conclude on the appropriateness of the Council's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Academy of Sciences Malaysia's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my Auditor's Certificate to the related disclosures in the Financial Statements of the Academy of Sciences Malaysia or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of Auditor's Certificate. However, future events or conditions may cause the Academy of Sciences Malaysia to cease to continue as a going concern; and
- e. evaluate the overall presentation, structure and content of the Financial Statements of the Academy of Sciences Malaysia, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.


The Council has been informed regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I have identify during the audit.

Other Matters

The Academy of Sciences Malaysia needs to attend to the following:

- a. The balance of the project accounts held from 2001 to 2019 does not show any movement from 2019 and these balances need to be adjusted as the Academy of Sciences Malaysia's accumulated surplus.
- b. The Academy of Sciences Malaysia needs to ensure that its computerized accounting system does not create Funds' contra accounts since it is not required.

This certificate is made solely to the Council of the Academy of Sciences Malaysia in accordance with the Academy of Sciences Malaysia Act 1994 [Act 524] requirements, and for no other purpose. I do not assume responsibility to any other person for the content of this certificate.


(DATUK WAN SURAYA BINTI WAN MOHD RADZI)
KETUA AUDIT NEGARA
MALAYSIA

PUTRAJAYA
21 JUNE 2024



STATEMENT OF FINANCIAL POSITION
AS AT 31 DECEMBER 2023

	Note	2023 RM	2022 RM <i>As Restated</i>	01.01.2022 RM <i>As Restated</i>
ASSETS				
Current Assets				
Cash and Balance at Bank	3	2,990,455	2,955,001	4,434,415
Fixed Deposit	4	264,399,335	18,237,217	20,560,233
Account Receivables	5	26,470	1,260	15,685
Other Receivables	6	660,222	543,147	213,498
Total Current Assets		268,076,482	21,736,625	25,223,831
Non-current Assets				
Property, Plant and Equipment	7	3,853,703	4,353,841	3,938,908
Intangible Asset	8	468,000	-	-
Work in Progress	9	-	581,394	81,565
Total Non-current Assets		4,321,703	4,935,235	4,020,473
TOTAL ASSETS		272,398,185	26,671,860	29,244,304
LIABILITIES				
Current Liabilities				
Account Payables	10	1,202,119	1,395,462	652,249
Employee Benefits	11	290,526	230,138	262,852
Advance Received	12	133,409	386,812	45,000
Provision for Tax	25	43,095	-	112,662
Total Current Liabilities		1,669,149	2,012,412	1,072,763
Non-current Liabilities				
Employee Benefits	11	78,466	51,732	37,230
Deferred Grants	13	5,345,140	9,837,210	15,465,204
Deferred Grants - International Office	14	980,963	776,196	1,168,561
Deferred Development Grants	15	250,897,924	48,023	-
Total Non-current Liabilities		257,302,493	10,713,161	16,670,995
TOTAL LIABILITIES		268,971,642	12,725,573	17,743,758
NET ASSETS		13,426,543	13,946,287	11,500,546
NET ASSET				
Accumulated Surplus		13,426,543	13,946,287	11,500,546
TOTAL NET ASSETS		13,426,543	13,946,287	11,500,546

The notes on pages 7 to 34 are an integral part of these Financial Statements.

STATEMENT OF FINANCIAL PERFORMANCE
FOR THE YEAR ENDED 31 DECEMBER 2023

	Note	2023 RM	2022 RM <i>As Restated</i>
INCOME			
Non-exchangeable Transactions	16	18,200,825	18,054,570
Exchangeable Transactions	17	1,447,603	960,007
TOTAL INCOME		19,648,428	19,014,577
EXPENSES			
Salaries and Wages	18	779,514	856,199
Services and Supplies	19	9,640,017	8,331,547
Science Programme Expenses	20	5,957,963	4,587,671
Contribution and Fixed Charges	21	121,361	133,066
Employee Benefits	22	349,643	307,680
Other Expenses	23	655,192	101,314
Rental	24	1,619,250	1,577,316
Depreciation of Property, Plant and Equipment and Amortisation of Intangible Assets	7 & 8	869,608	544,730
Total Expenses		19,992,548	16,439,523
(LOSS)/SURPLUS BEFORE TAX		(344,120)	2,575,054
Tax	25	(175,624)	(129,313)
(LOSS)/SURPLUS AFTER TAX		(519,744)	2,445,741

STATEMENT OF CHANGES IN NET ASSETS
FOR THE YEAR ENDED 31 DECEMBER 2023

	Note	Accumulated Surplus RM	Total RM
Balance as at 01 January 2022		11,545,546	11,545,546
- (As previously stated)			
Prior Year Adjustment	30	(45,000)	(45,000)
Balance as at 01 January 2022 - (As Restated)		11,500,546	11,500,546
Surplus Income on Expenditure - (As Restated)		2,445,741	2,445,741
Balance as at 31 December 2022/01 January 2023 - (As Restated)		13,946,287	13,946,287
Loss Income on Expenditure		(519,744)	(519,744)
Balance as at 31 December 2023		13,426,543	13,426,543

The notes on pages 7 to 34 are an integral part of these Financial Statements.

STATEMENT OF CASH FLOW
FOR THE YEAR ENDED 31 DECEMBER 2023

	2023 RM	2022 RM <i>As Restated</i>
<u>CASH FLOWS FROM OPERATING ACTIVITIES</u>		
(Loss)/Surplus before Tax	(344,120)	2,575,054
Adjustment:		
Depreciation of Property, Plant and Equipment	817,608	544,730
Amortisation of Intangible Assets	52,000	-
Interest Income	(660,084)	(451,284)
Loss/(Gain) Disposal of Property, Plant and Equipment	571,044	(8,839)
Adjustment Work in Progress	-	81,565
Adjustment of Deferred Grant	-	31,755
Adjustment Surplus from Deferred Grant-International Office	-	(7,812)
Provision for Employee Benefits	362,136	307,680
Surplus from Operation Before Changes in Working Capital	798,584	3,072,849
Decrease/(Increase) in Receivable from Exchangeable Transactions	52,351	(174,218)
(Decrease)/Increase in Payables from Exchangeable Transactions	(193,343)	743,213
(Decrease)/Increase in Payables from Advance Received	(253,403)	341,812
Employee Benefit Paid	(275,014)	(325,892)
Cash Generated from Operating Activities	129,175	3,657,764
Tax Paid	(112,717)	(261,787)
Net Cash Generated from Operating Activities	16,458	3,395,977
<u>CASH FLOWS FROM INVESTMENT ACTIVITIES</u>		
Proceeds from Disposal of Property, Plant and Equipment	16,056	8,995
Purchase of Property, Plant and Equipment	(904,570)	(959,819)
Purchase of Intangible Assets	(520,000)	-
Decrease/(Increase) in Work in Progress	581,394	(581,394)
Interest Received	445,636	330,090
Net Cash Used from Investment Activities	(381,484)	(1,202,128)
<u>CASH FLOWS FROM FINANCING ACTIVITIES</u>		
Proceeds from Deferred Grant	1,503,225	1,496,265
Repayment of Deferred Grant	(5,995,295)	(7,156,014)
Proceeds from Deferred Grant - International	2,133,046	-
Repayment of Deferred Grant - International	(1,928,279)	(384,553)
Proceeds from Deferred Development Grant	254,050,000	950,000
Repayment of Deferred Development Grant	(3,200,099)	(901,977)
Net Cash Generated/(Used) from Financing Activities	246,562,598	(5,996,279)

The notes on pages 7 to 34 are an integral part of these Financial Statements.

STATEMENT OF CASH FLOW (CON'T)
FOR THE YEAR ENDED 31 DECEMBER 2023

	2023 RM	2022 RM <i>As Restated</i>
INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	246,197,572	(3,802,430)
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE FINANCIAL YEAR	21,192,218	24,994,648
CASH AND CASH EQUIVALENTS AT THE END OF THE FINANCIAL YEAR	267,389,790	21,192,218
<u>CASH AND CASH EQUIVALENTS:</u>		
Fixed Deposit	264,399,335	18,237,217
Cash and Balance at Bank	2,990,455	2,955,001
	267,389,790	21,192,218

STATEMENT OF COMPARISON BUDGET AND ACTUAL
FOR THE YEAR ENDED 31 DECEMBER 2023

	Total Budget		Total Actual	Variance
	Initial	Final	2023	Budget
	2023	2023	2023	2023
	RM	RM	RM	RM
RECEIPTS				
Non-exchangeable Transactions				
Government Grant	13,938,200	13,938,200	13,938,200	-
Exchangeable Transactions				
Other Income	-	-	-	-
	13,938,200	13,938,200	13,938,200	-
EXPENSES				
Salaries and Wages	983,034	819,257	779,514	39,743
Services and Supplies	12,411,157	12,423,725	11,884,978	538,747
Contribution and Fixed Charges	495,135	498,593	414,907	83,686
Other Expenses	48,874	196,625	243,660	(47,035)
	13,938,200	13,938,200	13,323,059	615,141
NET RECEIPTS	-	-	615,141	(615,141)

The notes on pages 7 to 34 are an integral part of these Financial Statements.

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED ON 31 DECEMBER 2023

1 GENERAL INFORMATION

a) ASM Establishment and Main Objectives

The Academy of Sciences Malaysia (ASM) was established under the Academy of Sciences Malaysia Act 1994 (Act 524). The objective of ASM is to pursue, encourage and enhance excellence in the fields of Science, Engineering, and Technology (SET) for the development of the nation and benefit of mankind.

b) Functional Currency for Financial Statements

The financial statements is presented in Malaysian Ringgit ("RM") which is the functional and presentation currency of ASM. Thus, all financial information is presented in RM.

c) Date of Approval of Financial Statements

ASM Financial Statements for the year ended on 31 December 2023 was approved by ASM Council on 23 April 2024.

2 ACCOUNTING POLICIES

a) Basis of Preparation of Financial Statements

The Financial Statements of ASM is prepared under the conventional historical cost in compliance with the Malaysian Public Sector Accounting Standards (MPSAS).

The preparation of financial statements requires judgments, estimates, and assumptions that affect the use of policies and the reported amounts of assets, liabilities, revenues, and expenses.

Estimates and assumptions used will be reviewed on an ongoing basis. Revision to accounting estimates will be recognised in the revised accounting period if the revision affects that period, or the period in review and future periods if the revision affects the current and future periods.

Where these judgments, estimates, and assumptions have significant impact on the amounts recognised in the financial statements, they will be disclosed in Note 2(p) Critical Accounting Considerations and Sources of Estimation Uncertainty in the financial statements.

2 ACCOUNTING POLICIES (CONT.)

b) Income Recognition

Income from Non-exchangeable Business Transactions

Non-exchangeable business transactions will be recognised as an asset when there are future economic benefits expected to flow to the entity as a result of historical event and the cost or value of the asset can be measured reliably. Non-exchangeable business transactions recognised as an asset shall be recognised as income except when there's a liability that is also being recognised for the same transaction as a delayed transaction in the financial statements. When the obligations towards liabilities are met, the entity shall reduce the liabilities amount and recognise the income amount as equivalent to the amount reduced.

Income from non-exchangeable business transactions are as follows:

i. Government Grants

Government grants which are not subjected to certain future performance conditions such as the operating grant are recognised as income in the financial statements. Government grants subject to certain future performance conditions such as development grants are recognised as deferred grants to be amortised as income with the liability valued at its carrying amount. Grants are amortised on a straight-line basis over their estimated useful life.

ii. Donation

Donations which are not subjected to certain future performance conditions are recognised as an income in the financial statements. Funds subject to certain future performance conditions are recognised as liabilities to be amortised as an income with the liability valued at its carrying amount. Funds are amortised on a straight-line basis over their estimated useful lives.

iii. Rental

Income from the rental is recognised when it is received in accordance with the rental agreement. Office rental rates are below market rates.

Income from Exchange Transactions

Income from exchange transactions are recognised when there are possibilities for the future economy expected to flow to the entity and the benefits can be measured reliably.

Income from exchange transactions are as follows:

i. Income Derived from Interest and Other Investment

Income derived from fixed deposits are recognised based on current exchange rates taking into consideration of an effective return of investment. The rate of return of investment on asset is the profit rate required to discount the future cash inflow expectation throughout the life expectancy of the respective asset to be equalised with the brought forward value of the asset.

Income derived from interest gained from conventional deposits and investments are recognised on accrual basis.

2 ACCOUNTING POLICIES (CONT.)

b) Income Recognition (Cont.)

Income from Exchange Transactions (Cont.)

ii. Rental

Income from the rental is recognised when it is received in accordance with the rental agreement.

iii. Other Revenue/Income

Other incomes are recognised when services are provided.

c) Property, Plant and Equipment

Property, Plant and Equipment are stated at cost less accumulated depreciation and impairment losses. Cost includes all of the direct costs to bring the asset to working condition for its intended use by the management. The cost of replacement of any asset that requires replacement at regular intervals will be capitalised. The carrying amount of those parts replaced will be derecognised in accordance with derecognition provision. The cost of day-to-day servicing will be recognised as an expense in the financial statement.

Property, plant and equipment of value over RM2,000 and above or in need of regular maintenance will be capitalised as property, plant and equipment.

If an asset is acquired through a non-exchange transaction, the cost should be measured at its fair value as of the acquisition date. These assets will be recognised in the financial statements unless there is a condition for the use of the asset, current liability will be recognised.

The carrying value of property, plant and equipment items should be derecognised at disposal or when no future economic benefits or potential services are expected from their use or disposal.

The gain or loss on the derecognition of property, plant and equipment is the difference of the proceeds and the carrying amount of the asset and its differences are recognised as profit or loss in the financial statements.

The initial cost of ASM building at Jalan Tun Ismail assessed in 2017 was RM3,399,000. However, a revaluation done by the *Jabatan Penilaian dan Perkhidmatan Harta (JPPH)* on the same building on 20 April 2021 recorded a new valuation cost of RM2,170,000.

Depreciation for property, plant and equipment are calculated based on a straight-line basis over their accumulated useful life at the following rates:-

Building	60 years
Motor Vehicle	5 years
Office Equipment	5 years
Computer	5 years
Office Renovation – Jalan Tun Ismail	10 years
Office Renovation – MATRADE	3 years

2 ACCOUNTING POLICIES (CONT.)

c) Property, Plant and Equipment (Cont.)

Full depreciation is charged in the year of purchase of property, plant and equipment. The net balance of each property, plant and equipment should not be less than RM1. If there are significant changes in the factors that affects the residual value, changes in the expected useful life or pattern of consumption of benefits since the last financial year, the carrying amount, depreciation method and the useful life of the asset will be reviewed and adjusted prospectively.

Work in progress consists of work involving property and equipment that was not completed until the end of the current financial year. Work in progress is stated at cost and is not depreciated until the asset is ready for use.

d) Intangible Asset

Intangible asset is a non-financial asset that is not physical in nature and has no shape or form such as a patent, brand, trademark, or copyright. Types of intangible assets include copyrights, licenses, patents and intellectual property. Intangible Asset are calculated based on the straight-line basis and are amortized at the following rates:-

Database	5 years
----------	---------

e) Impairment of Non-financial Assets

i. Cash Generating Assets

At each reporting date, ASM assesses the carrying value of its assets to determine whether there is any indication of impairment. If any indication exists, impairment is calculated by comparing the carrying amount of the asset with its recoverable amount. Recoverable amount is the highest value of the asset's fair value less costs to sell and its value in use.

In determining value in use, future cash flows are discounted to their present value using a pre-tax discount rate that reflects the current market value and specific risks associated with the asset. In determining fair value less costs to sell, most recent market transactions will be considered, if any. If there are no recent market transactions, an appropriate valuation model should be used.

An impairment loss is recognised as an expense on an ongoing surplus or deficit when the carrying amount of an asset exceeds its recoverable amount unless the asset is carried at revalued amount. Any impairment loss on a revalued asset will be reduced to the extent that the revaluation surplus is not used for the same asset.

ii. Non-cash Generating Assets

ASM will evaluate at each reporting date whether there is any indication that a non-cash-generating asset may be impaired. If any indication exists, then ASM will make an estimate of the total asset recovery service. The asset's recoverable amount is the highest of its fair value less costs to sell and value in use.

An impairment loss is recognised as a reduction in its surplus or as an expense when the carrying amount of an asset exceeds its recoverable amount.

2 ACCOUNTING POLICIES (CONT.)

e) Impairment of Non-financial Assets (Cont.)

ii. Non-cash Generating Assets (Cont.)

In determining value in use, ASM has adopted depreciated replacement cost approach. Under this approach, the present value of the asset's remaining balance potential is determined as the cost of replacing the depreciated asset. Depreciation expense will be measured by taking into account the cost of replacement of the asset less accumulated depreciation calculated on that cost to reflect the potential use of the asset that has been used or expired.

In determining fair value less costs to sell, the price of an asset in a binding agreement in an arm's length transaction is adjusted to determine the disposal price of the asset. If no binding agreement exists, but the asset is actively traded on the market, the fair value of the cost of the sale is determined by reference to the current market value less the cost of disposal. If there is no binding sale agreement or active market for the asset, ASM determines the fair value less costs to sell based on the best available information.

For each asset, an assessment is made at each reporting date as to whether there is any indication that previously recognised impairment losses may no longer exist or have diminished. If such an indication exists, ASM estimates the amount of asset's recoverable service amount. The previously recognised impairment loss will be reversed only if there has been a change in the assumptions used to determine the amount of the asset's recoverable service since the last impairment loss was recognised. A reversal is limited to the carrying amount of the asset not exceeding the recoverable amount of the service, or the carrying value of the asset net of depreciation and had no impairment loss being recognised for the asset in prior years.

f) Financial Assets

Financial assets are recognised in the financial statements when ASM participates in the contractual provisions of the instrument.

In the initial recognition, financial assets are measured at fair value, including transaction costs for financial assets that are not measured at fair value through profit or loss which are directly attributable to the issuance of financial assets.

Following initial recognition, financial assets will be classified into one of four categories of financial assets, namely financial assets measured at fair value through profit or loss, loans and receivables, held-to-maturity investments and ready-to-sell financial assets.

The purchase or sale of a financial asset that requires the surrender of the asset within the time frame stipulated by the rules or conventions in the market will be recognised on the date the transaction is made, which is the date on which ASM makes a commitment to buy or sell the asset.

2 ACCOUNTING POLICIES (CONT.)

f) Financial Assets (Cont.)

ASM has only the following financial asset categories:

i. Loans and Receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in the active market. After the initial measurement, the financial assets are subsequently measured at amortised cost using the effective interest method and less impairment. An amortised cost is calculated using any discount or premium on the purchase of the asset as well as fees or costs that are part of the effective interest rate. Losses arising on impairment are recognised in the profit or loss.

ii. Held-to-maturity Investments

Non-derivative financial assets with fixed or determinable payments maturity and are classified as held for maturity when ASM has a positive intention and ability to hold to maturity. After initial measurement, the holding to maturity of the investment is measured at amortised cost using the effective interest method and less impairment. The amortisation cost is calculated taking into account any discount or premium on the acquisition and fees or costs that are part of the effective interest rate. Impairment losses are recognised in the financial statements.

iii. Impairment of Financial Assets

At the end of each reporting period, ASM will evaluate whether there is any objective evidence that the financial assets need to be impaired. Objective evidence includes:

- a. significant financial difficulties by borrowers; or
- b. payment in arrears; or
- c. the possibility that the borrower will go bankrupt; or
- d. data indicating decline in future cash flow estimates.

For a financial asset category that is measured at amortised cost, if no objective evidence exists for a significant individual, then all assets in ASM with similar risk characteristics regardless of whether they are significant, will be evaluated collectively to determine whether it needs to be impaired.

An impairment loss, in respect of a financial asset measured at amortised cost, is measured as the difference between the carrying amount of the asset and its present value of estimated cash flow at the original effective interest rate. The carrying value of the asset is reduced through the use of an allowance account. Any impairment loss is recognised in profit or loss immediately. If, at any time, circumstances that led to the impairment no longer exist, the previously recognised impairment loss will be reversed directly in the allowance account. This reversal is recognised in the profit or loss immediately.

2 ACCOUNTING POLICIES (CONT.)

f) Financial Assets (Cont.)

iv. Derecognition of Financial Assets

Financial assets are derecognised when the contractual right to cash flow from the financial assets expires or is settled and ASM transfers significant risks and rewards of ownership of the financial assets to another.

On the derecognition of financial assets as a whole, the difference between the carrying amount and the amount of consideration received is recognised in the surplus or deficit during the period of the derecognition.

g) Cash and Cash Equivalents

The cash flow statement was prepared using the indirect method. Cash and cash equivalents consist of cash in hand and cash at banks as well as high-risk investments with licensed banks and financial institutions with 12-month or less maturity that are readily convertible to known amounts of cash which are subject to an insignificant risk of changes in value.

h) Employee Benefits

i. Short Term Employee Benefits

In general, ASM as a Federal Statutory Body is guided by the Public Service Department (JPA)'s employment regulations adopted by ASM and ASM's own policies. The short-term employee benefits provided are basic salaries, fixed allowances, non-fixed allowances, and various leaves including annual leave, medical benefits and insurance.

Short-term employee benefits including salaries, wages, allowances, statutory contributions and employment injury scheme and invalidity scheme are recognised as an expense in the year in which the related services are provided by employees. Unutilised paid leave such as annual leave can be accumulated and carried forward to the next servicing year of the employee. Whereas for leaves that are not able to be carried forward such as sick leave, may only be taken as and when the employee applies.

ii. Post-employment Pension Benefits

Employees' Provident Fund (EPF)

ASM makes EPF contributions according to the rates and conditions set by EPF. The contribution rates used by ASM are 12% and 13% for employees under 60, whereas for employees 60 years and above, the contribution rates are 4% and 6%, respectively. The contribution rate is also applicable to permanent employees who opted for EPF contribution.

Kumpulan Wang Persaraan Diperbadankan (KWAP)

ASM also makes contributions to public services pension fund for permanent staff who opted for pension. The contribution rate is 17.5% as set by KWAP.

2 ACCOUNTING POLICIES (CONT.)

h) Employee Benefits (Cont.)

iii. Paid Leave and Compensation for Employees

Permanent Employees

ASM permanent employees will receive reimbursement for annual leave (compensated absences / *Gantian Cuti Rehat (GCR)*) upon their retirement whether they chose pension scheme or EPF. This reward is based on the *Jabatan Perkhidmatan Awam (JPA)* Service Circular adopted by ASM.

Reimbursement of annual leave is calculated based on the following formula:

$1/30 \times \text{salary} + \text{allowances received} \times \text{number of leave accumulated}$

(subject to a maximum limit of 180 days).

Allowances includes:

- *Imbuhan Tetap Perumahan (ITP)*
- *Imbuhan Tetap Khidmat Awam (ITKA) / Keraian*

Contract Employees

ASM pays gratuity for each Contract of Service (CoS) according to the terms and conditions of the respective contract. ASM CoS employees are paid in lieu of leave (GCR) up to 6-days within a contract period. Remuneration and GCR payments for contract employees are in accordance with the terms and conditions set out in the civil service circular.

i) Contra of Financial Instrument

Financial assets and financial liabilities are to be contra if, and only if, there is a legal right to offset them and have the purpose of settling them to their net worth or to realise the assets and settle the liabilities simultaneously.

j) Budget Information

The annual budget is prepared on a cash basis. As the financial statements are prepared on an accrual basis, a Budget and Actual Comparison Statement is disclosed separately. The statement is prepared using the basis of the annual budget prepared and only refers to the operational budget.

The budget presented is for ASM's reference and was approved by ASM Council.

2 ACCOUNTING POLICIES (CONT.)

k) Provisions and Liabilities

Provisions are recognised when ASM has current (legal or constructive) obligations as a result of past events, and it is probable that an outflow of resources containing economic benefits will be required to settle the obligation and that the amount of the obligation can be estimated reliably. When ASM expects some or all of the provision to be repaid, the allocation-related expenses are presented in excess of or deductible from any refund.

l) Related Parties

ASM regards a related party as a person or entity with the ability to exercise control individually or collectively or to exercise significant influence over ASM, or vice versa. ASM Management's key employees, President and members of the ASM Council are considered as related parties.

m) Contingent Liabilities and Contingent Assets

A contingent liability is an unrecognised current obligation as there is no probable source of outflow to resolve the obligation or in the rare case where the liability cannot be recognised because it cannot be reliably measured. Contingent liabilities are not recognised but are disclosed in the financial statements. Obligations arising from past events, whose existence can only be confirmed by the occurrence or non-occurrence of one or more uncertain events, are not under the control of the entire ASM, also disclosed as contingent liabilities unless the probability of an outflow of economic resources is small.

Contingent assets are assets that may arise from past events whose existence will only be confirmed in the event of the occurrence or the occurrence of one or more uncertain events in the future that are not within the control of ASM. ASM does not recognise contingent assets in the financial statements but discloses their existence where inflows of economic benefits are possible, but not certain.

n) Financial Liabilities

Financial liabilities are recognised in the statement of financial position when ASM is a party to the contractual provisions of the instrument.

In the initial recognition, financial liabilities are measured at fair value, including transaction costs for financial liabilities that are not measured at fair value through profit or loss, which are directly attributable to the issue of financial liabilities.

Following initial recognition, financial liabilities are classified into two categories of financial liabilities, namely financial liabilities measured at fair value through surplus or borrowings, loans and payables.

2 ACCOUNTING POLICIES (CONT.)

n) Financial Liabilities (Con't)

ASM has the following categories of financial liabilities:

Loans and Repayments

After initial recognition, loans and repayments are measured at amortised cost using the effective interest method. Gains or losses are recognised in profit or loss when financial liabilities are derecognised or impaired.

Effective interest rates are a method of calculating the cost of amortising financial liabilities and to allocate interest expense over the relevant period. The effective interest rate is the discounted rate of estimated future cash payments due to the existence of a financial liability or, where appropriate, the shorter term, with the carrying amount of the financial liability.

A financial liability is recognised when the obligation specified in the contract has been discharged, canceled or expired.

Any discrepancy between the carrying amount of the deferred financial liability and the consideration paid is recognised in the surplus or deficit during the period of the derecognition.

o) Lease

Leases of property, plant and equipment are classified as finance leases when most of the risks and rewards of ownership of property, but not legal ownership, are transferred to ASM.

ASM initially recognises the right to use and its obligations under finance leases as assets and liabilities in the statement of financial position at an amount equal to the fair value of the leased asset or, if less, the present value of the minimum lease payments, determined at the beginning of the lease. Any initial direct costs are added to the amount recognised as an asset.

Minimum lease payments are divided between finance charges and the reduction of outstanding liabilities using the effective interest method. Monetary charges are allocated periodically throughout the lease term to generate a fixed-term interest rate on the balance of the liability.

The depreciation policy for a leasehold asset is consistent with the depreciable assets. If there is no reasonable assurance that ASM will acquire ownership by the end of the lease term, the leased asset will be fully depreciated over the term of the lease and its useful life. At each reporting date, ASM assesses whether the leasehold assets under finance lease are impaired.

Operating leases are recognised as an expense in the profit or loss on a straight-line basis over the lease term. The aggregate benefit of incentives provided by the lender is recognised as a reduction of rent expense over the lease term using the straight-line method.

2 ACCOUNTING POLICIES (CONT.)

p) Critical Accounting Considerations and Sources of Estimation Uncertainty

i. Critical Accounting Considerations

There are no critical accounting judgments that have material impact on the amounts recognised in the financial statements.

ii. Sources of Estimation Uncertainty

The key estimates of the future, and other key sources of budget uncertainty as of the reporting date, are significant risks that will result in significant adjustments to the carrying values of assets and liabilities in the next financial year.

Allocation Measurement

Budget Measurement Report (BMR) always uses the best estimates as the basis for measuring such an allocation. The estimates are based on past experience, other indications or assumptions, recent developments and reasonable future events in determining allocation.

Impairment Loss on Accounts Receivable

ASM evaluates at each reporting date whether there is any objective evidence that financial assets are impaired. To determine whether there is objective evidence of impairment, ASM considers factors such as insolvency and default or delay in payment. Where there is objective evidence of impairment, the amount and timing of future cash flows are estimated based on a history of loss experience for assets with similar credit risk characteristics.

Changes in Estimated Life Expectancy for Property, Plant and Equipment

All property, plant and equipment are depreciated on a straight-line basis over the life of the asset. Management estimates the life expectancy of property, plant and equipment over a period of five (5) to sixty (60) years. Changes in the estimation of asset usage patterns and technology development can impact the life and residual value of those assets. This will result in a change of depreciation of the asset in the future.

q) Tax

The income tax expense of a controlled entity recognised in the statement of financial performance comprises current and deferred tax. Current tax is the expected amount of income tax payable in respect of the taxable profit for the year and is calculated using tax rates that have been enacted or substantively enacted by the reporting date.

Tax payable on taxable profits for the current and past periods is recognised in the current liability to the extent that it is unpaid. If the amount paid in respect of the current and past periods exceeds the amount due for that period, the excess is recognised in current assets.

Current tax liabilities and assets are offset only when ASM has a legally valid right to offset the amount and intends to either settle on a net basis, or realise the asset and settle the liability simultaneously.

2 ACCOUNTING POLICIES (CONT.)

q) Tax (Cont)

Deferred tax is provided using the liability method, on temporary differences at the statement of financial position date between the tax bases of assets and liabilities and their carrying amounts in the financial statements. In principle, a deferred tax liability is recognised for all taxable temporary differences. Deferred tax assets are recognised for deductible temporary differences, unutilised tax losses and unused tax credits to the extent that it is probable that future taxable profits will be available against which it can be utilised. Deferred tax is not recognised if the temporary difference arises from goodwill, negative goodwill or from the initial recognition of an asset or liability in a transaction that is not a business combination, and at the time of the transaction, does not affect accounting profit or taxable profit.

Deferred tax is measured at the tax rates that are expected to apply in the period in which the asset is realised or the liability is settled, based on tax rates that have been enacted or substantively enacted at the reporting date. Deferred tax is recognised in the statement of financial performance, except when it arises from a transaction that is recognised directly in equity or when it arises from a business combination that is an acquisition, in which deferred tax is included in the goodwill and negative goodwill.

3 CASH AND BANK BALANCE

	2023 RM	2022 RM
Cash in Hand	4,342	1,288
Cash at Bank	<u>2,986,113</u>	<u>2,953,713</u>
	<u>2,990,455</u>	<u>2,955,001</u>

4 FIXED DEPOSIT

	2023 RM	2022 RM
Fixed Deposit	<u>264,399,335</u>	<u>18,237,217</u>
	<u>264,399,335</u>	<u>18,237,217</u>

Fixed deposits are made over a period of 12 months or less depending on ASM's immediate cash requirements and benefit at Short Term Deposit Rates. The Average Effective Interest Rate Weight as at 31 December 2023 is 4.10% per annum (2022: 2.80% per annum).

5 ACCOUNT RECEIVABLES

	2023 RM	2022 RM
Receivables	<u>26,470</u>	<u>1,260</u>
	<u>26,470</u>	<u>1,260</u>

Accounts Receivable are interest-free and generally range from one to 30 days. Accounts Receivable are recognised at Fair Value at the time of initial recognition. The amount expected to be recovered within 12 months will be recognised on the original invoice amount. Otherwise, it will be recognised on the Current Value of the original invoice amount.

Analysis of account receivable aging is as follows:

	2023 RM	2022 RM
Does not exceed duration and is not affected	-	-
1 to 3 months	26,470	-
3 to 12 months	-	1,260
More than 12 months	-	-
	<u>26,470</u>	<u>1,260</u>

6 OTHER RECEIVABLES

	2023 RM	2022 RM <i>As Restated</i>
Prepayment	416,064	402,141
Prepaid Tax	-	19,812
Accrued Income	29,710	-
Accrued Interest	<u>214,448</u>	<u>121,194</u>
	<u>660,222</u>	<u>543,147</u>

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7 PROPERTY, PLANT AND EQUIPMENT

	As at 01 January 2023 RM	Additions RM	Disposal/ Classification RM	As at 31 December 2023 RM
COST				
Building	2,170,000	-	-	2,170,000
Motor Vehicle	662,579	396,880	(148,301)	911,158
Office Equipment	926,794	252,348	(27,675)	1,151,467
Computer	1,439,023	209,629	(789,316)	859,336
Telecommunication	-	4,699	-	4,699
Office Renovation - Jalan Tun Ismail	4,645,922	41,014	-	4,686,936
Office Renovation - Matrade	<u>539,016</u>	<u>-</u>	<u>-</u>	<u>539,016</u>
	<u>10,383,334</u>	<u>904,570</u>	<u>(965,292)</u>	<u>10,322,612</u>

	As at 01 January 2023 RM	Additions RM	Disposal/ Classification RM	As at 31 December 2023 RM
ACCUMULATED DEPRECIATION				
Building	397,834	36,166	-	434,000
Motor Vehicle	470,658	95,302	(148,300)	417,660
Office Equipment	730,730	107,636	(27,668)	810,698
Computer	386,458	288,272	(202,224)	472,506
Telecommunication	-	705	-	705
Office Renovation - Jalan Tun Ismail	3,834,196	109,855	-	3,944,051
Office Renovation - Matrade	<u>209,617</u>	<u>179,672</u>	<u>-</u>	<u>389,289</u>
	<u>6,029,493</u>	<u>817,608</u>	<u>(378,192)</u>	<u>6,468,909</u>

	As at 31 December 2023 RM
NET CARRYING AMOUNT	
Building	1,736,000
Motor Vehicle	493,498
Office Equipment	340,769
Computer	386,830
Telecommunication	3,994
Office Renovation - Jalan Tun Ismail	742,885
Office Renovation - Matrade	<u>149,727</u>
	<u>3,853,703</u>

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7 PROPERTY, PLANT AND EQUIPMENT (CONT.)

	As at 01 January 2022 RM	Additions RM <i>As Restated</i>	Disposal/ Classification RM	As at 31 December 2022 RM <i>As Restated</i>
<u>COST</u>				
Building	2,170,000	-	-	2,170,000
Motor Vehicle	722,148	-	(59,569)	662,579
Office Equipment	1,034,093	24,717	(132,016)	926,794
Computer	582,072	935,102	(78,151)	1,439,023
Office Renovation - Jalan Tun Ismail	4,703,295	-	(57,373)	4,645,922
Office Renovation - Matrade	539,016	-	-	539,016
	<u>9,750,624</u>	<u>959,819</u>	<u>(327,109)</u>	<u>10,383,334</u>
	As at 01 January 2022 RM	Additions RM <i>As Restated</i>	Disposal/ Classification RM	As at 31 December 2022 RM <i>As Restated</i>
<u>ACCUMULATED DEPRECIATION</u>				
Building	361,666	36,168	-	397,834
Motor Vehicle	481,225	49,000	(59,567)	470,658
Office Equipment	805,831	56,798	(131,899)	730,730
Computer	350,849	113,731	(78,122)	386,458
Office Renovation - Jalan Tun Ismail	3,782,200	109,361	(57,365)	3,834,196
Office Renovation - Matrade	29,945	179,672	-	209,617
	<u>5,811,716</u>	<u>544,730</u>	<u>(326,953)</u>	<u>6,029,493</u>
	As at 31 December 2022 RM			
<u>NET CARRYING AMOUNT</u>				
Building	1,772,166			
Motor Vehicle	191,921			
Office Equipment	196,064			
Computer	1,052,565			
Office Renovation - Jalan Tun Ismail	811,726			
Office Renovation - Matrade	<u>329,399</u>			
	<u>4,353,841</u>			

8 INTANGIBLE ASSET

	2023 RM	2022 RM
<u>COST</u>		
As at 1 January	-	-
Additional	<u>520,000</u>	<u>-</u>
As at 31 December	<u>520,000</u>	<u>-</u>
<u>AMORTISATION</u>		
As at 1 January	-	-
Additional	<u>52,000</u>	<u>-</u>
As at 31 December	<u>52,000</u>	<u>-</u>
<u>NET CARRYING AMOUNT</u>	<u>468,000</u>	<u>-</u>

9 WORK IN PROGRESS

	2023 RM	2022 RM <i>As Restated</i>
Balance as at 01 January	581,394	81,565
Additional	-	581,394
Capitalised as Property, Plant and Equipment	(140,394)	-
Capitalised as Intangible Assets	(441,000)	-
Reversal	-	(81,565)
Balance as at 31 December	<u>-</u>	<u>581,394</u>

The breakdown of Work in Progress are as follows:

	2023 RM	2022 RM <i>As Restated</i>
Repository	-	140,394
Platform	-	441,000
	<u>-</u>	<u>581,394</u>

10 ACCOUNT PAYABLES

	2023 RM	2022 RM <i>As Restated</i>
Accruals	1,169,752	1,375,462
Wakalah Zakat	12,367	-
Deposit Received	<u>20,000</u>	<u>20,000</u>
	<u>1,202,119</u>	<u>1,395,462</u>

11 EMPLOYEE BENEFITS

	2023 RM	2022 RM
Balance as at 01 January	281,870	300,082
Add : Employee Benefit for the Year	362,136	307,680
Deduct : Employee Benefit Paid During the Year	(275,014)	(325,892)
Balance as at 31 December	<u>368,992</u>	<u>281,870</u>
	2023 RM	2022 RM
Current Liability	290,526	230,138
Non-current Liability	<u>78,466</u>	<u>51,732</u>
	<u>368,992</u>	<u>281,870</u>

12 ADVANCE RECEIVED

	2023 RM	2022 RM
Balance at 01 January	386,812	45,000
Income	400,985	539,930
Programme Management Charges	(60,690)	(82,143)
Surplus from Project	(61,822)	-
Purchase of Asset	(3,300)	-
Expenditure	<u>(528,576)</u>	<u>(115,975)</u>
Balance as at 31 December	<u>133,409</u>	<u>386,812</u>

The breakdown of advance received are as follows:

	2023 RM	2022 RM
ArtScience Initiative	-	40,000
Non-Radioactive Rare Earths Industry (NRREE)	122,909	223,309
Position Paper on New Horizon For STI (NHSTI)	10,500	-
Cosmic Connections Langkawi	<u>-</u>	<u>123,503</u>
	<u>133,409</u>	<u>386,812</u>

Advance Received is an allocation received by ASM for its role as a strategic partner and/or service provider for a project. This includes sponsorship received from corporate sector or an organisation. The project is either implemented as ASM programme or as a collaborative project where the specification is determined by the funding organisation. In this aspect, ASM is bound by the terms of reference and duration of the programme as outlined in the agreement or letter of appointment.

13 DEFERRED GRANT

	2023 RM	2022 RM <i>As Restated</i>
Balance as at 01 January	9,837,210	15,465,204
Income	1,503,225	1,496,265
Return of Allocation	(150,704)	(2,988,892)
Programme Management Charges	(232,284)	(189,768)
Adjustments	-	31,755
Purchase of Asset	(79,000)	(1,355,950)
Expenditure	<u>(5,533,307)</u>	<u>(2,621,404)</u>
Balance as at 31 December	<u>5,345,140</u>	<u>9,837,210</u>

Deferred grants are provisions received from the Malaysian Government for a specific purpose. ASM is bound by the terms of reference and duration of the programme as outlined in the agreement or letter of appointment.

Deferred grants are analysed as follows:

	2023 RM	2022 RM <i>As Restated</i>
Non-current Liability	<u>5,345,140</u>	<u>9,837,210</u>
	<u>5,345,140</u>	<u>9,837,210</u>

The breakdown of the deferred grant allocation are as follows:

	2023 RM	2022 RM <i>As Restated</i>
ASM		
Malaysian Collaborative Network Platform for Disruptive Innovation (i-CONNECT)	1,509,016	3,469,063
Strategic Research Fund (SRF-APP) – Fintech in Islamic Finance	56,354	1,602,770
Strategic Research Fund (SRF-APP) – Halal Supply Chain	652,358	665,717
Strategic Research Fund (SRF-APP) – Digital Healthcare and Wellness	35,913	-
Malaysia Open Science Platform (MOSP)	-	915,420
Study on Environmental Quality Act	769,304	852,104
Water Sector Transformation 2040 (WST 2040)	2,012,744	2,012,744
<i>Minggu Sains Negara (MSN)</i>	-	12,239
MOE Studies	128,405	128,405
Development of RDCIE Roadmap	<u>181,046</u>	<u>178,748</u>
	<u>5,345,140</u>	<u>9,837,210</u>

14 DEFERRED GRANT – INTERNATIONAL OFFICE

	2023 RM	2022 RM
Balance as at 01 January	776,196	1,168,561
Income	2,133,046	-
Surplus from Project	-	(7,812)
Return of Allocation	-	(249,285)
Purchase of Asset	(48,678)	-
Expenditure	<u>(1,879,601)</u>	<u>(135,268)</u>
Balance as at 31 December	<u>980,963</u>	<u>776,196</u>

Deferred grants are analysed as follows:

	2023 RM	2022 RM
Non-current Liability	<u>980,963</u>	<u>776,196</u>
	<u>980,963</u>	<u>776,196</u>

The breakdown of the deferred grant allocation are as follows:

	2023 RM	2022 RM <i>As Restated</i>
ISC ROAP	139,321	776,196
ISTIC 3.0	823,021	-
UNESCO	<u>18,621</u>	<u>-</u>
	<u>980,963</u>	<u>776,196</u>

International Science Council Regional Office for Asia and the Pacific (ISC ROAP)

	2023 RM	2022 RM
Balance as at 01 January	776,196	1,162,869
Surplus from Project	-	(2,120)
Return of Allocation	-	(249,285)
Expenditure	<u>(636,875)</u>	<u>(135,268)</u>
Balance as at 31 December	<u>139,321</u>	<u>776,196</u>

The International Science Council (ISC) works at the global level to catalyse and convene scientific expertise, advice and influence on issues of major concern to both science and society. The ISC was launched in 2018 following a merger of the International Council for Science (ICSU), which was created in 1931, and the International Social Science Council (ISSC), created in 1952.

14 DEFERRED GRANT – INTERNATIONAL OFFICE (CON'T)

International Science, Technology and Innovation Centre (ISTIC)

	2023 RM	2022 RM
Balance as at 01 January	-	5,692
Income	2,012,803	-
Surplus from Project	-	(5,692)
Purchase of Asset	(48,678)	-
Expenditure	<u>(1,141,104)</u>	<u>-</u>
Balance as at 31 December	<u>823,021</u>	<u>-</u>

ISTIC is UNESCO Category II Centre hosted by the Malaysian Government since 26 March 2009. The Malaysian Government and UNESCO has agreed to renew the agreement to host ISTIC for another six (6) years which will end in 2027. In relation to this, ASM as the hosting entity of ISTIC has also signed a separate agreement with UNESCO. The operational cost and programmes of ISTIC is funded by Malaysian Government through ASM operating grant.

ISTIC aims to contribute toward the objectives of UNESCO's strategic programme in particular promoting the interface between science, society and ethical inclusive policies for sustainable development and strengthening STI policies and engagement with society; capacity building in science and technology through providing policy advice and exchange of experience and best practices; foster cooperation among governments, academia and industry in order to facilitate the transfer of knowledge between the public and private sectors; conduct research and make available knowledge, including through open science and potential new technologies; and develop networks and collaborative research and development (R&D) and training programmes at regional and international levels as well as facilitate the exchange and dissemination of information.

15 DEFERRED DEVELOPMENT GRANT

	2023 RM	2022 RM
Balance as at 01 January	48,023	-
Income	254,050,000	950,000
Amortisation to the Financial Statements	-	-
Assets	(103,205)	(24,962)
Expenses	<u>(3,096,894)</u>	<u>(877,015)</u>
Balance as at 31 December	<u>250,897,924</u>	<u>48,023</u>

Development Grant is an allocation for studies or projects under the five-year Malaysian Plan (MP) approved by the Economic Planning Unit (EPU) of Prime Minister's Department, MOSTI and the Ministry of Finance (MOF).

15 DEFERRED DEVELOPMENT GRANT (CONT.)

Deferred development grants are analysed as follows:

	2023 RM	2022 RM
Non-current Liability	250,897,924	48,023
	<u>250,897,924</u>	<u>48,023</u>

The breakdown of the deferred grant allocation are as follows:

	2023 RM	2022 RM
Digitalisation and Internet of Things (IoT) Programme for Biodiversity	125,700	48,023
National Planetary Health Action Plan (NPHAP)	497,663	-
Wireless Bridging System	274,561	-
Malaysia Science Endowment (MSE)	250,000,000	-
	<u>250,897,924</u>	<u>48,023</u>

16 NON-EXCHANGEABLE TRANSACTIONS

	2023 RM	2022 RM <i>As Restated</i>
Operating Grant	13,938,200	13,500,000
Amortisation of Deferred Grant	714,593	3,444,303
Amortisation of Deferred Grant – International Office	48,678	-
Amortisation of Deferred Development Grant	3,200,099	901,977
Other Income:		
Donation Fund	200,000	-
Office Rental Charges	80,000	80,000
Refund from programme	15,547	113,561
Reversal of Expenses	124	8,591
Surplus from Project	-	6,138
Refund from Insolvency	3,584	-
	<u>18,200,825</u>	<u>18,054,570</u>

17 EXCHANGEABLE TRANSACTIONS

	2023 RM	2022 RM
Programme Management Charges	292,974	271,911
Current Account Interest	13,852	4,337
Fixed Deposit Interest	646,232	498,897
Other Income - ASM	493,145	184,862
Other Income - ISTIC	1,400	-
	<u>1,447,603</u>	<u>960,007</u>

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18 SALARIES AND WAGES

	2023 RM	2022 RM
Permanent staff:		
Salaries and Wages	564,316	623,041
Fixed Allowance	151,377	171,504
Statutory Contribution to Employees	39,760	44,924
Overtime Allowance	8,191	5,420
Other Employee Benefits	15,870	11,310
	<u>779,514</u>	<u>856,199</u>

ASM's permanent employees are civil servants appointed to fill the PSD's employment warrant. Payment of salaries, wages and fixed costs are in accordance with Service Circular No. 1/2016.

19 SERVICES AND SUPPLIES

	2023 RM	2022 RM
Administrative Cost	2,145,606	1,545,789
Emoluments for Contract Employees	6,569,822	5,828,926
Science Communication	268,474	359,872
Membership Affairs	656,115	596,960
	<u>9,640,017</u>	<u>8,331,547</u>

Services and Supplies are ASM's operating expenses which are mainly administrative expenses that include expenditure for facility management, information technology, finance and accounts, management of data and analysis as well as ASM committees and governing bodies. In addition, salaries and wages for ASM contract employees are designated in accordance with Service Circular No. 2/2008. Payment of wages, wages and fixed costs are in accordance with Service Circular No. 1/2016.

20 SCIENCE PROGRAMME EXPENSES

	2023 RM	2022 RM <i>As Restated</i>
Collaborative Networking Activities and Science Excellence		
Flagship, Niche and Commissioned Studies	208,074	152,154
Malaysia Science Endowment (MSE)	9,818	14,022
Special Interest Groups (SIG)	3,800	40,059
STI Initiative and Partnership	1,125,744	682,425
International Affairs	327,429	615,016
Science Communication	22,035	2,652
	<u>1,696,900</u>	<u>1,506,328</u>

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20 SCIENCE PROGRAMME EXPENSES (CONT.)

	2023 RM	2022 RM <i>As Restated</i>
Deferred Grant Expenditure		
Malaysia Open Science Platform (MOSP)	535,278	337,482
Study on Environmental Quality Act	82,800	-
Water Sector Transformation 2040 (WST 2040)	-	1,733,110
Suruhanjaya Kebangsaan UNESCO Malaysia (SKUM)	17,515	-
<i>Minggu Sains Negara (MSN)</i>	-	17,761
	<u>635,593</u>	<u>2,088,353</u>
Deferred Development Grant Expenditure		
Digitalisation and Internet of Things (IoT) Programme for Biodiversity	2,619,118	877,015
National Planetary Health Action Plan (NPHAP)	452,337	-
Wireless Bridging System	25,439	-
	<u>3,096,894</u>	<u>877,015</u>
Advance Received Expenditure		
ArtScience Initiative	196,700	-
Cosmic Connections Langkawi	54,920	26,497
Non-Radioactive Rare Earths Industry (NRREE)	184,803	89,478
Position Paper on New Horizon For STI (NHSTI)	92,153	-
	<u>528,576</u>	<u>115,975</u>
	<u>5,957,963</u>	<u>4,587,671</u>

The activities carried out by ASM are listed as Science Programmes. This includes the core activities of ASM as well as activities implemented by ASM on behalf of the Government and collaboration programmes with other organisations at the national and international level through grants/ allocations received.

The Science Programme Expenditures are activities undertaken to fulfill the 14 functions of ASM as stipulated in the Academy of Sciences Malaysia Act 1994. These activities are based on current strategies and directions set by the ASM Council. Meanwhile, Deferred Grant Expenditures are activities carried out by fulfilling the terms of reference of the programme as outlined in the agreement or letter of appointment.

21 CONTRIBUTION AND FIXED CHARGES

	2023 RM	2022 RM
<i>Kelab Sukan dan Kebajikan Kakitangan (KSKK)</i>	25,000	25,000
Pension	65,263	76,820
Donation/International Subscriptions	31,098	31,246
	<u>121,361</u>	<u>133,066</u>

22 EMPLOYEE BENEFITS

	2023 RM	2022 RM
Permanent Employee Replacement Leave	26,734	14,502
Contract Employee Replacement Leave	36,282	32,928
Contract Employee Gratuity	286,627	260,250
	<u>349,643</u>	<u>307,680</u>

23 OTHER EXPENSES

	2023 RM	2022 RM
Fees, Insurance, Taxes, and Stamp Duty	33,545	49,239
Reversal of Accrued Interest	-	51,950
Loss of Disposal of Property, Plant and Equipment	587,091	125
Foreign Exchange Loss	1,576	-
<i>Zakat</i>	32,980	-
	<u>655,192</u>	<u>101,314</u>

24 RENTAL

	2023 RM	2022 RM
Office Rental	1,473,662	1,455,763
Store Rental	18,240	18,289
Office Equipment Rental	62,340	64,240
Electronic Equipment Rental	21,845	5,433
Parking Rental	43,163	33,591
	<u>1,619,250</u>	<u>1,577,316</u>

25 TAXATION

	2023 RM	2022 RM
Tax Liability:		
(Overpaid)/Tax Liability as at 01 January	(19,812)	112,662
Tax	175,624	129,313
Tax Paid	(112,717)	(261,787)
Tax Due/(Overpaid) as at 31 December	<u>43,095</u>	<u>(19,812)</u>
Taxation:		
Current Year Tax	175,624	129,259
Under Provision of Previous Year's Tax	-	54
Tax	<u>175,624</u>	<u>129,313</u>

ASM is eligible for income tax exemption under the Income Tax (Exemption) (No.22) Order 2006.

26 HUMAN RESOURCE

ASM Management consist of permanent and contract employees. The total number of ASM employees as at 31 December 2023 was 96 (2022: 89). Below is the details:

	2023 RM	2022 RM
Permanent Employees:		
Top Management Group	1	1
Management and Professional Group	2	2
Support Group	6	6
Contract of Services (CoS) Employees:		
Management and Professional Group	62	58
Support Group	25	22
Total Staff		
Top Management Group	1	1
Management and Professional Group	64	60
Support Group	31	28
	<u>96</u>	<u>89</u>

27 TOP MANAGEMENT

The ASM leadership is led by the ASM Council chaired by the President. The ASM Council determines the direction of ASM and sets ASM policies. All decisions of the ASM Council are carried out by the ASM Management headed by the Chief Executive Officer (CEO).

	2023 RM	2022 RM
Members of Council:		
Total Allowance	35,750	46,250
Members of the Finance Committee:		
Total Allowance	33,500	24,000
Members of Executive Committee:		
Total Allowance	10,250	10,750
Members of STI Policy Advisory Committee:		
Total Allowance	84,500	62,750
Key Management Personnel:		
Short Term Benefits	260,502	257,222
	<u>424,502</u>	<u>400,972</u>

27 TOP MANAGEMENT (CON'T)

Council is the highest body established under the Academy of Sciences Malaysia Act 1994 to carry out functions of ASM as well as manage and oversee the affairs of the Academy. ASM Council comprises of 16 members elected from among Fellows at the ASM Annual General Meeting, except for President who is appointed by the SPB Yang Di-Pertuan Agong. ASM Council chaired by President comprise of Vice-President, Secretary- General, Honorary Treasurer and 12 Ordinary Council members. Council convenes four (4) to five (5) times a year to decides on the way forward and implementation of ASM activities.

ASM Finance Committee is responsible to oversee the planning, implementation and monitoring of ASM activities, procedures, system and reporting related to finance. The Committee is chaired by Honorary Treasurer assisted by eight (8) members.

Executive Committee (EXCO) is established to assist Council to oversee the management and day-to-day operations and affairs of the Academy. EXCO comprises of President, Vice-President, Secretary-General and Honorary Treasurer. EXCO meets on behalf of Council to deliberate on urgent matters and provide input and decision to ASM Management.

The STI Policy Advisory Committee (STIPAC) functions as an oversight committee that provides strategic direction and inputs on all ASM studies as well as national policy and strategy matters related to STI to forge evidence-based and informed decision making. The Committee plays an important role to ensure ASM provides the best scientific advice and advocacy that is independent, credible, relevant and timely in the interest of the nation and society. STIPAC is chaired by ASM President assisted by 22 members.

Key Management Personnel is the Chief Executive Officer (CEO) of ASM acting as the Controlling Officer and has the authority and responsibility to plan, direct, implement and control ASM's activities. The CEO reports on the performance and status of all activities to the ASM Council.

28 FINANCIAL RISK MANAGEMENT

i. Financial Management Risk Objectives and Policies

ASM's financial risk management policy aims to ensure that there are sufficient financial resources for business development, managing credit risk, foreign exchange, and liquidity. ASM operates under clearly defined guidelines approved by ASM and ASM's policy is not to involve ASM in speculative transactions.

ii. Credit Risk

Credit risk or third-party risk of failure to pay is governed by the application of credit approval procedures, limits and strict supervision. Credit risk is minimised and closely monitored by limiting ASM's cooperation with high-credit business partners. Receivables are monitored continuously through ASM management reporting procedures.

For cash and bank balances, fixed deposits and short-term deposits, ASM reduces credit risk by dealing exclusively with high credit rating financial institutions.

28 FINANCIAL RISK MANAGEMENT (CON'T)

iii. Interest Rate Risk

Interest rate risk is the risk that the fair value or future cash flows of ASM financial instruments will fluctuate due to changes in the interest rate market.

iv. Liquidity Risk

Liquidity and cash flow risk is the risk that ASM will face difficulties in meeting its financial obligations due to lack of funds. ASM's exposure to liquidity risks arises from differences in the maturity of financial assets and financial liabilities. The following table shows the maturity profile of ASM's liability at the date of the report based on repayment obligations without contract discounts.

ASM manages liquidity and cash flow risks by ensuring sufficient cash and providing sufficient funds to meet its commitments from operating expenses and financial liabilities.

	Less Than 1 Year RM	More Than 1 Year RM	Total
On 31 December 2022			
Accounts Payable	-	-	-
On 31 December 2021			
Accounts Payable	-	-	-

v. Fair Value

Cash and cash equivalents, receivables and payables equal their fair value due to their short maturity.

29 NOTES FOR STATEMENT OF COMPARISON FOR BUDGET AND ACTUAL

ASM Budget was approved and presented on a cash basis for the financial year 1 January 2023 to 31 December 2023. The original budget was approved by the Ministry of Science, Technology, dan Innovation (known as MOSTI) by letter MOSTI.400-2/1/4 JLD.7(22) dated 13 January 2023.

30 PRIOR YEAR ADJUSTMENTS AND COMPARATIVE FIGURE

Prior year adjustments were recognised on Other Receivables, Property, Plant and Equipment, Work in Progress, Account Payables, Advance Received, Deferred Grants, Deferred Grants - International Office, Non Exchangeable Transactions, Exchangeable Transactions, Science Programme Expenses and Depreciation of Property, Plant and Equipment. The impact on the financial statements are as follows:

Statement of Financial Position as at 31 December 2022

	As Previously Stated RM	Adjustment RM	Restated RM
ASSETS			
Current Assets			
Other Receivables	526,987	16,160	543,147
Non-current Assets			
Property, Plant and Equipment	3,509,037	844,804	4,353,841
Work in Progress	286,052	295,342	581,394
LIABILITIES			
Current Liabilities			
Account Payables	1,585,766	(190,304)	1,395,462
Advance Received	816,196	(429,384)	386,812
Non-Current Liabilities			
Deferred Grants	10,048,280	(211,070)	9,837,210
Deferred Grants - International Office	-	776,196	776,196
	16,772,318	1,101,744	17,874,062

Statement of Financial Performance for the year ended 31 December 2022

	As Previously Stated RM	Adjustment RM	Restated RM
INCOME			
Non Exchangeable Transactions	18,929,606	(875,036)	18,054,570
Exchangeable Transactions	844,032	115,975	960,007
EXPENSES			
Science Programme Expenses	6,636,902	(2,049,231)	4,587,671
Depreciation of Property, Plant and Equipment	510,428	34,302	544,730
	26,920,968	(2,773,990)	24,146,978

TELL ME MORE



2023 Management Committees

Council

Chair: President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Executive Committee (EXCO)

Chair: President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Finance Committee

Chair: Honorary Treasurer, Academician Datin Paduka Setia
Dato' Dr Aini Ideris FASc

Audit Committee

Chair: Datuk Dr Abdul Razak Mohd Ali FASc

Membership Committee

Chair: Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

Media Response and Public Domain Focal Group

Chair: Secretary-General, Professor Dr Noorsaadah Abd Rahman FASc

Presidential Advisory Committee

Chair: President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

ASM International Committee

Chair: Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

Science, Technology and Innovation Policy Advisory Committee (STIPAC)

Chair: President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Publication Committee

Chair: Secretary-General, Professor Dr Noorsaadah Abd Rahman FASc

Senior Fellows Committee

Chair: Academician Emeritus Professor Dato' Dr V.G. Kumar Das FASc

Disciplinary Committee for the Top Management Group

Chair: Secretary-General, Professor Dr Noorsaadah Abd Rahman FASc

Disciplinary Appeal Committee for the Top Management Group

Chair: Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

WEHAB++ Committees

Water Committee

Chair: Professor Dr Zulkifli Yusop FASc
Advisor: Tan Sri Dato' Ir Syed Muhammad Shahabudin FASc

Energy Committee

Chair: Professor Ir Dr Nasrudin Abd Rahim FASc
Advisor: Professor Dato' Ir Dr A. Bakar Jaafar FASc

Health Committee

Chair: Professor Dr Tunku Kamarul Zaman Tunku Zainol Abidin FASc
Advisor: Academician Distinguished Professor
Datuk Dr Looi Lai Meng FASc

Agriculture Committee

Chair: Professor Dato' Dr Zulkifli Idrus FASc
Co-Advisors:
Academician Datuk Dr Abdul Aziz S.A. Kadir FASc
Academician Datin Paduka Setia Dato' Dr Aini Ideris FASc

Biodiversity Committee

Chair: Dr Helen Nair FASc
Co-Advisors:
Academician Emeritus Professor Tan Sri Dr Zakri Abdul Hamid FASc
Academician Tan Sri Dr Salleh Mohd Nor FASc

Blue Economy Committee

Co-Chairs:
Emeritus Professor Dr Phang Siew Moi FASc
Ir Dr Suzana Yusup FASc
Advisor: Professor Dato' Ir Dr A. Bakar Jaafar FASc

Talent Development Committee

Chair: Dr Hj Mohamad Kamal Hj Harun FASc
Advisor: Academician Professor Datin Paduka
Dr Khatijah Mohd Yusoff FASc

Digitalisation Committee

Co-Chairs:
Dr Mohamed Awang Lah FASc
Emeritus Professor Dr Tharek Abd Rahman FASc
Advisor: Emeritus Professor Dato' Seri Ir Dr Mashkuri Yaacob FASc

Environment Committee

Chair: Professor Dato' Dr Mazlin Mokhtar FASc
Advisor: Academician Emeritus Professor Tan Sri
Dr Zakri Abdul Hamid FASc

Climate Change and Disaster Risk Reduction Committee

Chair: Professor Dr Joy Jacqueline Pereira FASc
Advisor: Academician Emerita Professor Tan Sri
Dr Mazlan Othman FASc

Committees & Task Forces

Task Force on Preliminary Study Mynet Zero GHG Emissions Roadmap by 2050

Chair: Professor Ir Ts Dr Zainuddin Abd Manan FASc

Task Force on Fertiliser

Chair: Professor Dr Shamsuddin Jusop PGeol FASc

Task Force on Animal Feed

Chair: Dato' Dr Quaza Nizamuddin Hassan Nizam

Task Force on Digitalisation and IoT Programme for Biodiversity

Co-Chairs:
Dr Helen Nair FASc
Professor Dr Wickneswari Ratnam FASc

Task Force on Review of ASM Act

Chair: Secretary-General, Professor Dr Noorsaadah Abd Rahman FASc

Science Awards Steering Committee

Chair: Secretary-General, Professor Dr Noorsaadah Abd Rahman FASc

ASM ArtScience™ Steering Committee

Chair: Academician Emerita Professor Tan Sri Dr Mazlan Othman FASc

ASM ArtScience™ Prize Sub-Committee

Chair: Dr Roslina Ismail

National Science Challenge (NSC) Steering Committee

Chair: Professor Ir Dr Aduwati Sali FASc

Advisor: Professor Dr Noorsaadah Abd Rahman FASc

Top Research Scientists Malaysia (TRSM) Steering Committee

Chair: Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

Top Research Scientists Malaysia (TRSM) Selection Panel

Chair: Professor Dr Rofina Yasmin Othman FASc

ASM Science Journal Editorial Board

Chair: Professor Dato' Dr Mohd Ali Hassan FASc

e-estidotmy Editorial Board

Chair: Professor Ir Dr Rosdiadee Nordin

Task Force on New Business Model for Government Linked Research Organisations (GLRO)

Co-Chairs:

Professor Dr Mahendhiran Sanggaran Nair FASc
Dr Hj Mohamad Kamal Hj Harun FASc
Advisor: YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Task Force on the Development of a Business Model for the Establishment of a Non-radioactive Rare Earth Element (NR-REE) Industry in Malaysia

Chair: Academician Datuk Fateh Chand FASc

Coordinating Committee for the Development of the National Planetary Health Action Plan (NPHAP)

Chair: Professor Emerita Datuk Dr Asma Ismail FASc

Working Group on ASEAN STI Ecosystem Foresight 2035

Chair: Professor Dr Mahendhiran Sanggaran Nair FASc

Dr Ranjeet Bhagwan Singh Medical Research Trust Fund Programme Committee

Chair: Professor Dr Sheila Nathan FASc

Special Interest Group (SIG)

SIG on Zoonosis

Chair: Professor Datuk Dr Mohd Hair Bejo FASc

SIG on Industry-ready Talent for STI-based Enterprise Post COVID-19

Co-Chairs:

Professor Dato' Seri Ir Dr Abdul Rahman Mohamed FASc
Dr Shahidah Mohd Shariff FASc
Professor Dr Mahendhiran Sanggaran Nair FASc

SIG on Social Innovation

Chair: Professor Dato' Dr Aileen Tan Shau Hwai FASc

Special Project

Malaysian Collaborative Network (i-Connect) Initiative Steering Committee

Co-Chairs:

YM Academician Datuk

Dr Tengku Mohd Azzman Shariffadeen FASc

Ir Ts Choo Kok Beng FASc

i-Connect Technical Committee

Chair: YM Academician Datuk

Dr Tengku Mohd Azzman Shariffadeen FASc

Malaysian Open Science Platform Alliance

Co-Chairs:

Professor Dr Noorsaadah Abdul Rahman FASc

Professor Ir Dr Shaliza Ibrahim CEng FICHEM FASc

Chapters

ASM Northern Region Chapter

Chair: Professor Dato' Seri Ir Dr Abdul Rahman Mohamed FASc

ASM Southern Region Chapter

Chair: Professor Datuk Ir Ts Dr Ahmad Fauzi Ismail FASc

ASM Sabah Chapter

Chair: Dr Rahimatsah Amat FASc

ASM Sarawak Chapter

Chair: Professor Datuk Dr Jayum Anak Jawan FASc

ASM East Coast Chapter

Chair: Professor Dato' Dr Jafri Malin Abdullah FASc

Discipline Groups

Biological, Agricultural and Environmental Sciences Discipline

Chair: Dr Ravigadevi Sambanthamurthi FASc

Alternate Chair: Professor Dato'

Dr Mohamed Shariff Mohamed Din FASc

Chemical Sciences Discipline

Chair: Professor Dato' Dr Mohd Jamil Maah FASc

Alternate Chair: ChM Dr Yang Farina Abdul Aziz FASc

Engineering Sciences Discipline

Chair: Professor Dr Nik Meriam Nik Sulaiman FASc

Alternate Chair: Datuk Ir (Dr) Abdul Rahim Hj Hashim FASc

Information Technology and Computer Sciences Discipline

Chair: Professor Dato' Dr Mohamed Ridza Wahiddin FASc

Alternate Chair: Dato' Ts Dr Amirudin Abdul Wahab FASc

Mathematics, Physics and Earth Sciences Discipline

Chair: Professor Dr Wan Ahmad Tajuddin Wan Abdullah FASc

Alternate Chair: Professor Dr Maslina Darus FASc

Medical and Health Sciences Discipline

Chair: Professor Datin Paduka Dr Teo Soo Hwang FASc

Alternate Chair: Dr Subramaniam Krishnan FASc

S&T Development and Industry Discipline

Chair: Dato' Dr Jalaluddin Harun FASc

Alternate Chair: Dato' Dr Kamarudin Ab Malek FASc

Social Sciences and Humanities Discipline

Chair: Dr Zainal Ariffin Ahmad FASc

Alternate Chair: Professor Emeritus Datuk Dr Norma Mansor FASc

Young Scientists Network (YSN) – ASM

YSN-ASM EXCO

Chair: Associate Professor Ts Dr Nurfaadhina Mohd Sharef

Vice-Chair: Professor Ir Dr Denny Ng Kok Sum

Secretary-General: Associate Professor Dr Nurbiha A Shukor

Honorary Treasurer: Associate Professor Dr Siti Sarah Othman

Science Policy & Governance Working Group

Chair: Dr Siti Hawa Ngalim

Co-Chair: Associate Professor Ts Dr Mohd Faizal Ibrahim

Science Outreach Working Group

Chair: Dr Ahmad Ilyas Rushdan

Co-Chair: Dr Mohd Faiz Mohamad Shahimin

Science @ Media Working Group

Chair: Dr Phan Chia Wei

Co-Chair: Dr Jezamine Lim

Science Communication Working Group

Chair: Ts Dr Jaysuman Puspanathan
Co-Chair: Dr Melissa Beata Martin

Research Synergy Working Group

Chair: Datin Ts Dr Rozzeta Dolah
Co-Chair: Dr Lee Sau Har

Science Education Working Group

Chair: Dr Tan Suat Cheng
Co-Chair: Associate Professor Dr Suhaila Sepeai

Science Integrity Working Group

Chair: Dr Chau De Ming
Co-Chair: Associate Professor Dr Kesaven Bhupalan

Science Leadership Working Group

Chair: Dr Kew Si Na
Co-Chair: Associate Professor Dr Vigneswari Sevakumaran

YSN-ASM Membership Selection Committee

Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

ASM Representative in International and National Meetings**Association of Academies and Societies in Asia (AASSA)**

President, YM Academician Datuk Dr Tengku Mohd Azzman Shariffadeen FASc

Inter Academy Partnership (IAP)

President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Low and Middle-Income Country, IAP Board

Professor Emerita Datuk Dr Asma Ismail FASc as Co-Chair

Policy Advice Committee, IAP

Professor Emerita Datuk Dr Asma Ismail FASc as Co-Chair
Professor Dato' Ir Dr A. Bakar Jaafar FASc as a Member

Academy Capacity Building Development and Programme Committee, IAP

Academician Professor Datin Paduka Dr Khatijah Mohd Yusoff FASc

InterAcademy Partnership for Urban Health

Datuk Dr Awg Bulgiba Awg Mahmud FASc

IAP Science for Poverty Eradication Committee (IAP SPEC)

Professor Dato' Dr Aishah Bidin FASc as an Expert

International Science Council (ISC)

President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

Standing Committee for Science Planning, ISC

Professor Emerita Datuk Dr Asma Ismail FASc as a Member

Network of Academies of Sciences in the Islamic Countries (NASIC)

President, YM Academician Datuk
Dr Mohd Tengku Azzman Shariffadeen FASc

Science Council of Asia (SCA)

Academician Distinguished Professor Datuk Dr Looi Lai Meng FASc

Academy of Sciences in Developing World (TWAS)

President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

ASEAN Network of Young Scientists Interim Committee

Professor Dr Abhimanyu Veerakumarasivam

Board of Advisor (Malaysia), ASEAN Foresight Alliance Committee

Academician Emerita Professor Tan Sri Dr Mazlan Othman FASc

International Silk Road Academy of Sciences

President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc
Representative: Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc

ISTIC Governing Board

President, YM Academician Datuk
Dr Tengku Mohd Azzman Shariffadeen FASc

ISTIC Executive Committee

Vice-President, Professor Dato' Ir Dr A. Bakar Jaafar FASc
Permanent Alternative Representative: CEO, Pn Hazami Habib

APEC Policy Partnership on STI (PPSTI) Working Meeting

CEO, Pn Hazami Habib – Nominated by MOSTI & elected at PPSTI as the Chair of the Sub-Committee of Capacity Building Cluster

World Organization for Science Literacy (WOSL)

CEO, Pn Hazami Habib as a Member of Preparatory

UNESCO Open Science Advisory Committee

Professor Dr Noorsaadah Abd Rahman FASc as Malaysia's Focal Point

**UNESCO Intergovernmental Special Committee Meeting
on Open Science**

CEO, Pn Hazami Habib as an Alternate Focal Point

Socioeconomic Advisory Committee

Professor Dato' Dr Tengku Aizan Tengku Abdul Hamid FASc as a
Member

**Working Group on Human Capital and Research for
Global Innovation Index (GII)**

Professor Dr Yvonne Lim Ai Lian FASc

National Committee on Research Integrity

Academician Professor Datin Paduka Dr Khatijah Mohd Yusoff FASc

**Member of Majlis Pembangunan Teknologi dan Inovasi Sabah
(MaPTIS)**

Chair of ASM Sabah Chapter, Dr Rahimatsah Amat FASc

Majlis Bioetika Negara (Sesi: 2023/2024)

Professor Dr Rofina Yasmin Othman FASc as Permanent Member
Professor Dr Chan Kok Gan FASc as Alternative Member

ASM Management

January

ASM i-Connect Project Monitoring Meeting with INCEIF, Robo Advisory Sdn. Bhd., and UMK
5 January

NR-REE Syndication Workshop
5 January

i-Connect: Meeting on QuikHalal Project Implementation
11 January

1st Precision Biodiversity Alliance Meeting
16 January

MOSP User Acceptance Test Workshop
17 January

2023 Staff Assembly
19 January

RDCIE – Engagement with Industry
31 January

February

MSA Laureate 2020 Lecture and Intellectual Discourse
2 February

Site Visit for the Testing of the Organic Enriched Fertiliser for Food Security
7 February

ASEAN STI Ecosystem Foresight 2035 – Focus Group Discussion
8 February

NR-REE Validation Workshop
9 February

Expert Network Portal Proposal Workshop
17 February

AI and its Application Training Workshop
17 February

Senior Officials' Meeting at APEC Policy Partnership on Science, Technology and Innovation (PPSTI)
18 & 19 February

Inhouse Training – Professional Grooming & Etiquette
22 February

i-Connect Mission Mapping Workshop
27 February

FASciate
28 February

Inhouse Training - *Imej Keterampilan Profesional*
28 February

March

Inhouse Training - *Imej Keterampilan Profesional*
7 & 14 March

System Design Specification and Mock-Up Systems for Precision Biodiversity Workshop
8 March

Courtesy Visit from Islamic Development Bank (IsDB) Center of Excellence in Kuala Lumpur (KL CoE)
16 March

Proposal Strengthening Workshop for the Development of Halal Vaccine Ecosystem in Malaysia
20 March

Online Engagement with the Royal Scientific Society of Jordan
28 March

April

Borak Sains – Malaysia Bakal Tenggelam, Bersediakah Kita?
17 April

28th Annual General Meeting & Hari Raya Celebration
29 April

May

Malaysia Open Science Platform Final Acceptance Test Workshop
2 May

ASEAN STI Ecosystem Foresight 2035 – Focus Group Discussion
10 May

YSN-ASM Synergy Networking
12 May

MOSP Launching Ceremony and Forum on Open Science
16 May

YSN-ASM Ideation to Innovation
17 & 18 May

TropSc2024: International Tea Day Webinar
22 May

Inhouse Training – Project Management
Essential
30 & 31 May

June

MOSP Roadshow at Universiti Malaya Open
Science (UMOS)
6 June

TropSc2024 Webinar: World Ocean Day
8 June

NSC 2023 Preliminary Level
12 – 16 June

ArtScience™ Exhibition
19 June – 7 July

Courtesy Visit from the National Science and
Technology Council (NSTC), Taiwan
20 June

YSN-ASM Science Communication Workshop
21 & 22 June

FASciate
22 June

TropSc2024 Webinar: International Day of
the Tropics
28 June

July

Courtesy Visit from Malaysia Petroleum
Resources Cooperation (MPRC)
3 July

NSC 2023 State Level
3 – 28 July

ArtScience Prize 2022 Prize Giving Ceremony
4 July

2023 New Fellow Induction
15 July

National Sensor Technology Forum 2023
18 July

TropSc2024 Webinar: International Day for
the Conservation of the Mangrove Ecosystem
26 July

ASM Sabah Chapter, A Hybrid Webinar:
The Tropical Forest – 130 Million Years Old
29 July

ASEAN STI Ecosystem Foresight 2035 –
Finalisation Workshop
30 July

August

NSC 2023 Semi-Final Level
7 August – 4 September 2023

15th General Assembly
8 August

TropSc2024 Webinar: International Youth Day
11 August

RBS 2023 Memorial Lecture and
Announcement Ceremony
15 August

37th ideaXchange & GERD
17 August

Precision Biodiversity – Training Module
Workshop
18 August

Symposium on “Towards the Science of
Active Aging”
19 August

Kembara Sains Borneo Siri 1
19 – 27 August

Borak Sains – Pencemaran Mikroplastik
21 August

Borak Sains – Pengenalan STEM
22 August

ASM President’s Official Visit to Sabah
24 - 26 August

Inhouse Training – End User E-Claim Training
24 August

Inhouse Training – *Kursus Bahasa:
Penulisan Kertas Cadangan dan Laporan*
29 & 30 August

September

Online Engagement with the British Council on
International Science Partnership Fund (ISPF)
4 September

Senior Fellows Gathering
5 September

Talk: Mental Health
8 September

Inhouse Training – End User E-Claim Training
12 September

TropSc2024 Webinar: World Bamboo Day
18 September

PBD Foundation Training Programme –
Data Science and Artificial Intelligence (AI)
18 September

PBD Foundation Training Programme –
Business Intelligence Fundamentals
20 September

International Conference on Libraries,
Information and Society 2023
20 & 21 September

PBD Foundation Training Programme –
Artificial Intelligence (AI) & its Applications
22 September

PBD Foundation Training Programme – Data
Science Lifecycle: From Data to Insights
26 – 27 September

Kitaran Hidup Sains Data: Daripada Data ke
Wawasan
26 – 27 September

October

PBD Foundation Training Programme –
Introduction to Cloud Computing and Database
Management
2 October

Global Knowledge Dialogue
6 October

PBD Foundation Training Programme –
Basic Programming for Beginners using
Python
9 & 10 October

Workshop on the Management and Operation
of Kumpulan Wang Amanah Malaysia Science
Endowment (KWA MSE)
10 October

TropSc2024 Webinar: World Food Day
16 October

PBD Foundation Training Programme –
Introduction to Cloud Computing and Database
Management
16 & 17 October

Conferment of ASM Fellowship
& Announcement of TRSM
17 October

UK-MY Artificial Intelligence Conference
17 & 18 October

MOSP Roadshow at the International Research
and Symposium and Exposition (RISE), UTHM
18 & 19 October

ASM Sarawak Chapter Roadshow
& 38th ideaXchange
24 & 25 October

MOSP Roadshow at the Nexus Expo, UTM KL
25 & 26 October

YSN-ASM Colloquium & Chrysalis Award
Final Pitching
27 – 29 October

TropSc2024 Webinar: World Cities Day
31 October

NSC 2023 Grand Final
31 October

November

PBD Foundation Training Programme –
Big Data Fundamentals
1 November

ASM East Coast Chapter Roadshow
6 & 7 November

ASM President's Official Visit to Terengganu
6 & 8 November

PBD Foundation Training Programme
– Robotics Technology in Biodiversity
Management
7 November

Courtesy Visit from United Arab Emirates
University
10 November

PBD Foundation Training Programme –
Internet of Things and Digital Tagging in Forest
15 & 16 November

Inhouse Training: Microsoft Project –
Professional Scheduling
15 – 17 November

MOSP Roadshow at the Research,
Development, Commercialisation and
Innovation Convention by MOSTI
15 November

AI Forum and Innovation Kopitiam
27 November

Senior Fellows Gathering
29 November

Courtesy Visit from Korea Soongsil Cyber University
International (KCUI)
29 November

PBD Foundation Training Programme – Introduction
to Web-based and Mobile-based Application
30 November

December

Year End Luncheon & *Anugerah Pekerja Cemerlang*
1 December

PBD Foundation Training Programme – Introduction
to Web-based
and Mobile-based Application
1 December

ASM President's Official Visit to Langkawi
2-4 December

Book Launch - Cosmic Connections: Langkawi
3 December

MoU Signing Ceremony between ASM
and AT&S Malaysia
7 December

ASM Strategic Workshop
7 & 8 December

TropSc24 Webinar: International Mountain Day
11 December

Courtesy Visit from National Institute of Finance,
Vietnam
14 December

PBD Foundation Training Programme 2023 -
Introduction to Artificial Intelligence (AI) and its
Applications
14 & 15 December

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Nur Nadia Rozlin, Accountant
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Fasehah Ali, Programme Executive (Communication)
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Mohd Azim Noor, Programme Executive
Zarmila Salmi Sabot, Admin Executive

MALAYSIAN COLLABORATIVE NETWORK PLATFORM FOR DISRUPTIVE INNOVATION (i-CONNECT)

Azri Mohamad Saleh, Project Manager
Che Nor Adila Che Hasan, Executive
Farah Amirah Mohd Nasri, Executive

Acronyms

AAS – Australian Academy of Science
ACCC – ASEAN Centre for Climate Change
AFA – ASEAN Foresight Alliance
AFRC – ASEAN Foresight Research Cohort
AGM – Annual General Meeting
AI – Artificial Intelligence
AMMSTI – ASEAN Ministerial Meeting on Science, Technology, and Innovation
AMS – ASEAN Member States
ASM – Academy of Sciences Malaysia
BAC – Board of Advisor to the ASEAN Committee on Science, Technology and Innovation
CCDRR – WEHAB++ Climate Change and Disaster Risk Reduction
CEO – Chief Executive Officer
CERN – The European Organisation for Nuclear Research
CIAC – Chief of International Affairs and Communications
COO – Chief Operating Officer
COSTI – ASEAN Committee on Science, Technology and Innovation
CSO – Chief Strategy Officer
CSO – Civil Society Organisation
CSSP – CERN Summer Student Programme
EXCO – Executive Committee
FAIR – Findable, Accessible, Interoperable, and Reusable
FGD – Focus Group Discussion
FRI – Fisheries Research Institute
GA – General Assembly
GERD – Gross Expenditure in Research and Development
GKD – Global Knowledge Dialogue
HE – Higher Education
HEI – Higher Education Institution
IoT – Internet of Things
IPCC – Intergovernmental Panel on Climate Change

IPCC AR7 – The 7th Assessment Cycle of the Intergovernmental Panel on Climate Change
ISC – International Science Council
ISC RFP-AP – International Science Council Regional Focal Point of Asia and the Pacific
ISTIC-UNESCO – The International Science, Technology, and Innovation Centre for South-South Cooperation under the auspices of UNESCO
JKTBBKIPB – *Jawatankuasa Teknikal Bantuan Kerajaan Kepada Industri Padi dan Beras*
JPNS – Jabatan Pendidikan Negeri Sabah
KE – Ministry of Economy
KL – Kuala Lumpur
KSB – Kembara Sains Borneo
KSTI – *Kementerian Sains, Teknologi dan Inovasi Sabah*
LADA – Langkawi Development Authority
MAFS – Minister of Agriculture and Food Security
MAKNA – *Majlis Kanser Nasional*
MCRA – The MAKNA Cancer Research Award
MCRCR – Malaysian Code of Responsible Conduct in Research
MCY – Malaysia Commercialisation Year
MGC – Malaysia’s Grand Challenge
MOF – Ministry of Finance
MOHE – Ministry of Higher Education
MOSP – Malaysia Open Science Platform
MOSTI – Ministry of Science, Technology and Innovation
MoU – Memorandum of Understanding
MRANTI – Malaysian Research Accelerator for Technology & Innovation
MSE – Malaysia Science Endowment
MSN – *Minggu Sains Negara*
MySTIE – Malaysian Science, Technology, Innovation and Economy
NGO – Non-Governmental Organisation
NHSTI – A New Horizon for Science, Technology, and Innovation
NPHAP – National Planetary Health Action Plan
NPSTI – National Policy on Science, Technology and Innovation

NRECC – Ministry of Natural Resources, Environment and Climate Change

NRES – Ministry of Natural Resources and Environmental Sustainability

NR-REE – Non-Radioactive Rare Earth Elements

NSC – National Science Challenge

NSC – National Science Council

OS – Open Science

PBD – The Precision Biodiversity

POC – Proof of Concept

R&I – Research and Innovation

RBS – Dr Ranjeet Bhagwan Singh Medical Research Grant

RDCIE – Research, Development, Commercialisation, Innovation and Economy

REE – Rare Earth Elements

RMK-12/12MP – *Rancangan Malaysia Ke-12/The 12th Malaysia Plan*

ROI – Return on Investment

ROV – Return on Value

SCIRD – Sub-Committee on S&T Infrastructure and Resources Development

SDGs – Sustainable Development Goals

SEADPRI – Southeast Asia Disaster Prevention Research Initiative

SIG – Special Interest Group

SRF – Strategic Research Fund

STEM – Science, Technology, Engineering, and Mathematics

STI – Science, Technology and Innovation

STIE – Science, Technology, Innovation and Economy

STIPAC – Science, Technology and Innovation Policy Advisory Committee

T&L – Teaching and Learning

TropSc 2024 – The 2nd International Conference on Tropical Sciences

TRSM – Top Research Scientists Malaysia

TÜBA – Turkish Academy of Sciences

UiTM – Universiti Teknologi MARA

UKM – Universiti Kebangsaan Malaysia

UM – Universiti Malaya

UMT – Universiti Malaysia Terengganu

UNESCO – The United Nations Educational, Scientific and Cultural Organization

UNGA78 – The 78th United Nations General Assembly

UNIMAS – Universiti Malaysia Sarawak

USIM – Universiti Sains Islam Malaysia

USM – Universiti Sains Malaysia

UTHM – Universiti Tun Hussein Onn Malaysia

WBS – Wireless Bridging System

WEHAB++ – Water, Energy, Health, Agriculture, Biodiversity, Blue Economy, Talent Development, Environment, Digitalisation, and Climate Change & Disaster Risk Reduction

YIM – *Yayasan Inovasi Malaysia*

YSN-ASM – Young Scientists Network-Academy of Sciences Malaysia



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Akademi Sains Malaysia

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