



Story of Change

The Indonesian Academy of Sciences:
Partnership with the Knowledge Sector Initiative (KSI)
2014-2019

Introduction

The five-year partnership between the Indonesian Academy of Sciences (Akademi Ilmu Pengetahuan Indonesia, AIPI) and the Knowledge Sector Initiative (KSI) was arguably one of the most strategic in advancing scientific progress in Indonesia. In a relatively short amount of time, with the support of KSI and other development partners, AIPI managed to strengthen its institutional governance, clarify its objective, and expand its network and influence. AIPI also gave birth to the Indonesian Young Academy of Sciences (Akademi Ilmuwan Muda Indonesia, ALMI), and the Indonesian Science Fund (Dana Ilmu Pengetahuan Indonesia, DIPI), the latter being the first independent research funding agency in Indonesia that awarded multi-year funding on a competitive basis through a peer review process.

The story of AIPI and its partnership with KSI is a story of triumph, setbacks, and perseverance. As such, there is a need to document this story to both learn from and celebrate it. A documented account of this partnership will also allow AIPI, ALMI, and DIPI to better position themselves for other kinds of partnerships with different organisations in the future. To these purposes, these pages present four stories of change.

The first is one of strengthening institutional governance. AIPI had laudable ambitions to bolster its role in Indonesia's knowledge ecosystem, which means making important changes to improve its organizational capacity. With KSI's support, AIPI made important first steps such as evaluating its vision and mission, developing key values and Standard Operating Procedure documents, and assessing its human resource competency.

This supported the second and third stories of change: increasing influence and expanding network. AIPI embarked on more efforts to exert influence on the knowledge policy landscape, including by developing white papers and conducting discussions with policymakers on the national science and technology system bill. AIPI and ALMI developed a ground-breaking SAINS45 document which articulates scientific questions that Indonesia will face in the future. AIPI also expanded its network, including by engaging younger academics through ALMI and participating in international academic fora.

Finally, the fourth story of change is the establishment of DIPI, as the first independent research funding agency in the country. Despite significant challenges faced in its early years, DIPI nonetheless was an important step in improving Indonesia's research and knowledge production ecosystem.



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Buku Putih Sains, Teknologi, dan
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Era Disrupsi: Peluang dan Tantangan
Pendidikan Tinggi di Indonesia

Jakarta,

CENTURY PARK HOTEL

The Indonesian
Academy of Sciences:
**Partnership with
the Knowledge Sector
Initiative (KSI)**
2014-2019

What happens when you have big dreams but little resources to achieve them? That's the challenge facing Indonesia's science and innovation. Indonesia infamously ranks low on the Global Innovation Index, placing 85th in 2019—the lowest in Southeast Asia other than Cambodia. Indonesians contribute fewer articles to peer-reviewed journals than counterparts in Malaysia, Singapore or Thailand, and register fewer patents. There is also little emphasis on science-based public policy, with the government often relying more on international consultancies rather than its own universities or think tanks.

This is not, however, from lack of ambition. With an eye to “Industry 4.0,” the current Indonesian government has big visions to revolutionize scientific and technological research and development (R&D) to push the country into becoming a more competitive global economy. To achieve that, investment in scientific research is critical. The good news is that seeds of that have long been planted—and with committed support, the nation’s innovation catalysts can help the ecosystem flourish.

Standing ready to play a leading role is the Indonesian Academy of Sciences (Akademi Ilmu Pengetahuan Indonesia, AIPI). AIPI was established by law in 1990 as an independent agency that convened the country’s most prominent scientists. It has two main functions: (i) to provide opinions and suggestions on scientific and technological issues to the Indonesian government and community; and (ii) to support the development of science in Indonesia through conferences, scientific fora, publications, and establishing national and international scientific network.¹

AIPI has the potential to serve a much-needed, critical role in Indonesia’s knowledge sector, gathering the country’s top scholars to provide advice to the government and other stakeholders on matters related to science and technology, and promoting scientific excellence. Their task to guide Indonesia toward innovative and science-based development is even more pertinent today, as the country aims to focus on human resource development and transition from natural resource dependency into a high-skills and service-oriented economy.

The Academy’s members are respected scientists and academics with records of excellence in their respective fields, organized into five commissions: Basic Science, Medical Science, Engineering Science, Social Sciences, and Culture. In the past decade, AIPI has conducted multiple symposia that helped cultivate a more connected scientific community and network in Indonesia, while its individual members are well known and some are influential in government and academic circles.

Since its conception, AIPI has made some contributions to the advancement of science and technology in Indonesia. In 2011, AIPI developed a white paper on the creation of an Indonesian Science Fund as a key driver for research and development (R&D). Two years later, AIPI began initiating a national agenda for science. These two initiatives in particular were the seeds of change for Indonesia’s science ecosystem.

However, the organization is still little known outside of academic circles, and still strives to further strengthen its role and build its capacity to affect the meaningful changes it envisions. More specifically, AIPI believed that it should play a larger part in setting a more strategic direction for scientific research, advancing research through the provision of funding, and contributing to a stronger culture of evidence-based policy making in Indonesia.

In 2014, AIPI saw an opportunity to partner with the newly mobilized Knowledge Sector Initiative (KSI)—an Australian-supported program that sought to strengthen Indonesia’s “knowledge to policy cycle.” A major part of KSI’s main objective is to improve the quality and relevance of Indonesia’s social and policy-related research, which is an important subset of AIPI’s *raison d’être*. KSI and AIPI also shared a vision to strengthen the role of research in informing evidence-based strategy and policy—something that Indonesia direly needed. A partnership between KSI and AIPI was therefore a key opportunity to build AIPI’s capacity and influence in Indonesia’s knowledge and policy infrastructure.

The AIPI-KSI partnership spanned five years, covering the period of 2014-2019. During that time, KSI and AIPI worked together to strengthen the latter’s institutional governance, increase its influence in Indonesia’s science-related policies, and expand its network (see timeline in Figure 1). A series of workshops were conducted early on during that period to provide AIPI members the opportunity to reinvent the organization and set



2016 - Prof. Sangkot Marzuki during Australia-Indonesia Science Symposium at Canberra, Australia

¹ AIPI 2017 Annual Report

a common goal for what they see AIPI should be by the year 2030. At the end of this process, AIPI identified a new shared vision and developed action plans to meet its goals. Further follow-ups included a mapping of the organization's human resource capacity and needs, the development of a new code of ethics, and the establishment of a new structure for its products.

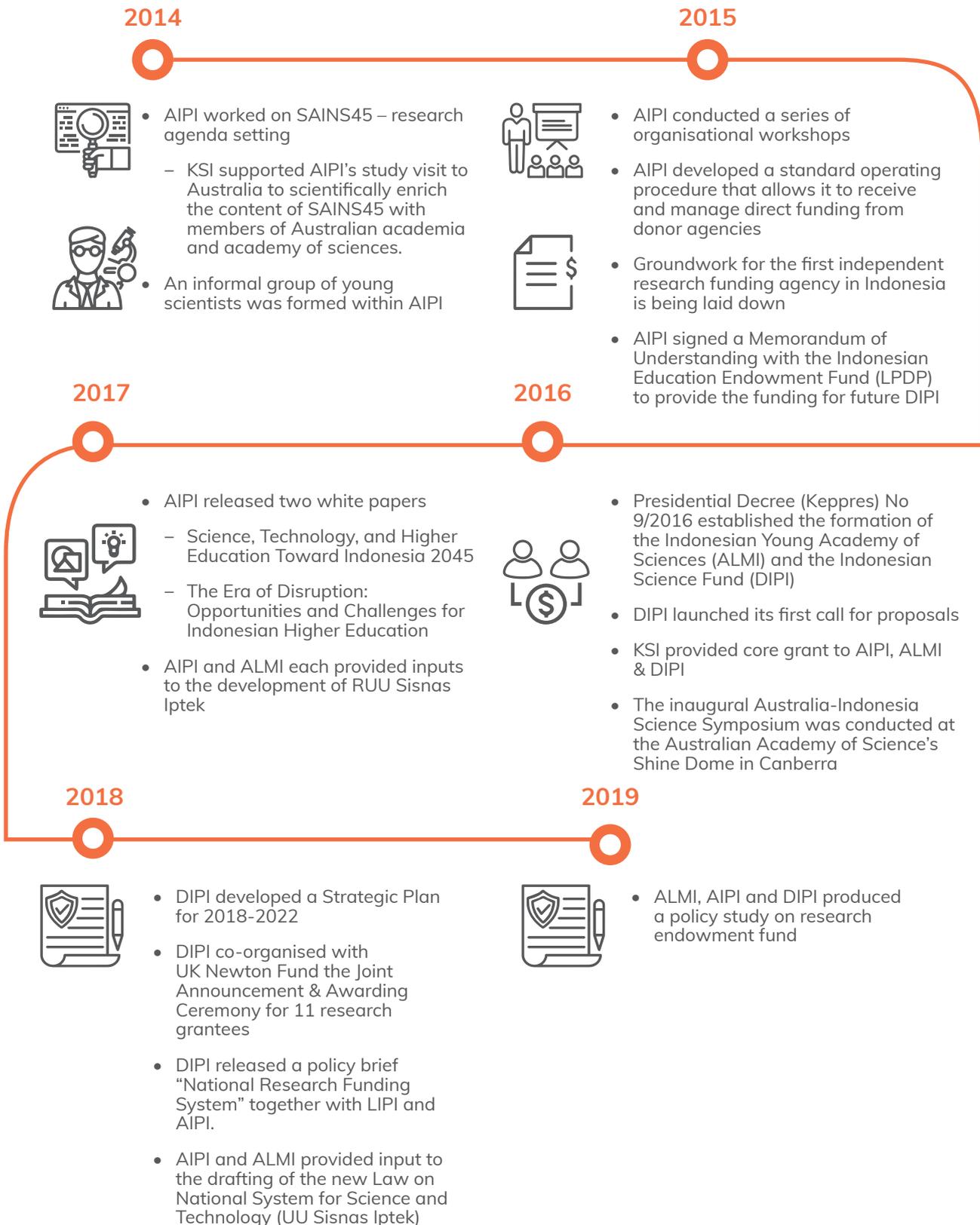
In 2016, with the support of KSI, AIPI and the Australian Academy of Science (AAS) held the first Australia-Indonesia Science Symposium. The symposium gathered around 120 prominent scientists from Australia and Indonesia, making it one of the largest scientific contingents from both countries in a single event. In the same year, the Indonesian Science Fund (Dana Ilmu Pengetahuan Indonesia, DIPI) was officially launched under the auspices of AIPI, becoming the first independent research funding agency in Indonesia that awarded multi-year funding on a competitive basis through a peer review process.

In the period of 2016-2019, AIPI released a series of products to influence the direction of Indonesia's scientific and technological progress. This included SAINS45, a groundbreaking, comprehensive research agenda to usher a new era of prosperity by Indonesia's independence centennial in 2045, two white paper—one on *Science, Technology, and Higher Education Toward Indonesia 2045* and another on *The Era of Disruption: Opportunities and Challenges for Indonesian Higher Education*—which were submitted to the National Agency for Development Planning (Badan Perencanaan Pembangunan Nasional, BAPPENAS) and then Ministry of Research, Technology and Higher Education (Kementerian Riset Teknologi dan Pendidikan Tinggi, Kemenristekdikti) to support science-based policymaking. AIPI also actively advocated and provided input to the drafting of the new Law on National System for Science and Technology (UU Sisnas Iptek)— which was passed on 16 July 2019.



2016 - All delegates during Australia-Indonesia Science Symposium at Canberra, Australia

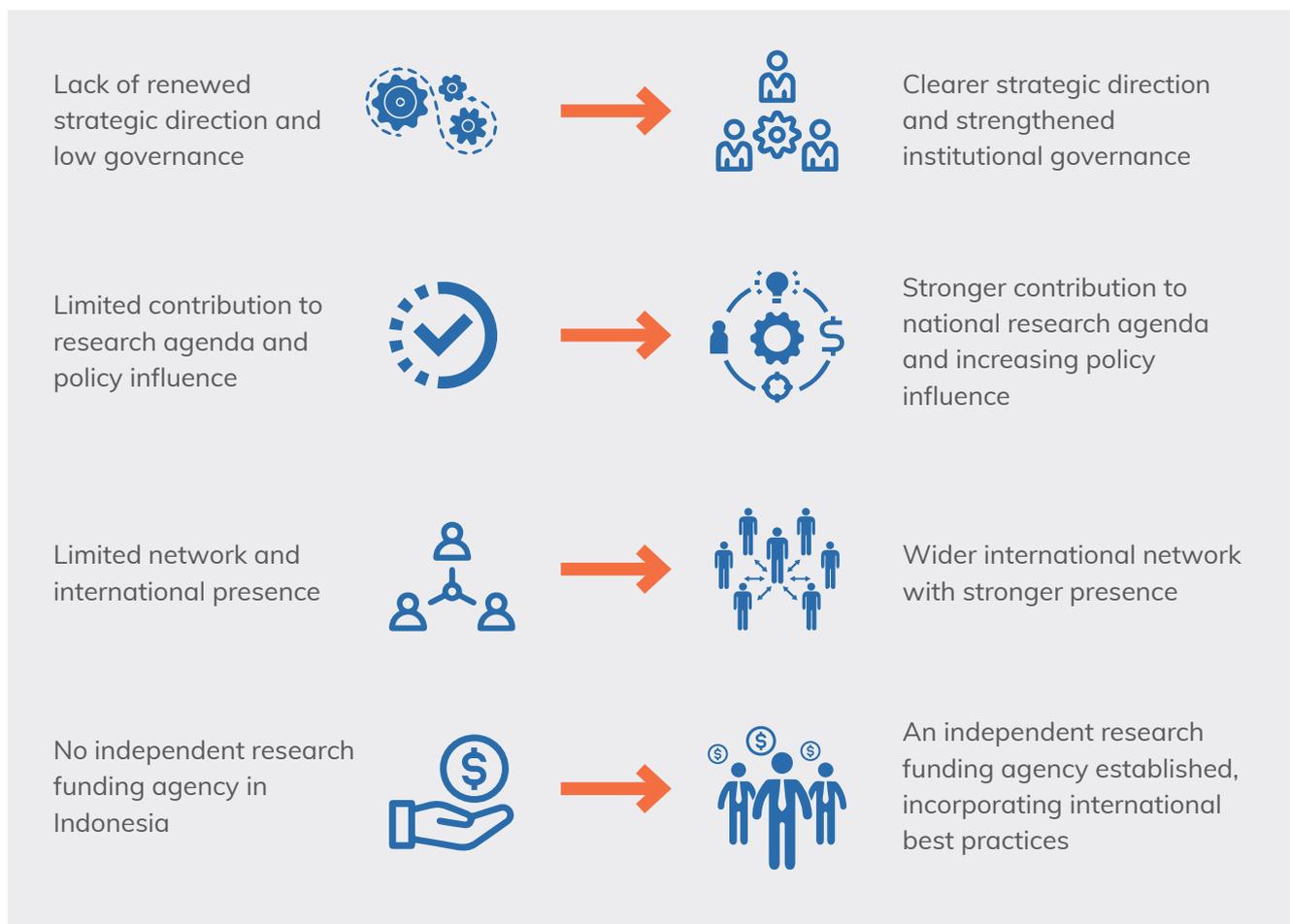
Figure 1 Key milestones of AIPI-KSI partnership throughout 2014-2019



Throughout this partnership, four stories of change emerge that define AIPI's achievements. The first is a story of AIPI's move to strengthen its institutional governance. Making up the second story of change are the steps that AIPI took to increase its influence in setting Indonesia's research agenda and policies related to science and technology. The third story revolves around AIPI's expanding network,

particularly internationally. The fourth and final story describes the establishment of Indonesia's first independent research funding agency that truly incorporated international best practices, particularly with the introduction of a peer review process of incoming research proposals. Figure 2 provides a visual for the aforementioned stories of change.

Figure 2 Four stories of change define AIPI's achievements in 2014-2019



It should be noted that this document is not meant to chronicle every activity that AIPI, ALMI, and DIPI have done during their partnership with KSI. It is also not intended to evaluate the impact of these changes on relevant stakeholders, which needs a distinctive approach rather than a story of change. Instead, the objective of these story of changes is to highlight what AIPI, ALMI, and DIPI accomplished during the partnership to improve

their organisations and the *internal effect* of those efforts to other activities. As such, while the activities and events that are detailed in this document do not constitute an exhaustive list of activities, they are curated to highlight the progress that took place during the period of partnership. With that, each of the four stories is told in a dedicated chapter in the rest of this document.

A photograph of a man with glasses and a white shirt speaking into a microphone. He is standing in front of a large, ornate batik pattern. The entire image has an orange tint. The text 'STRENGTHENING Institutional Governance' is overlaid in white.

STRENGTHENING Institutional Governance

Chairman of AIPI for 2018 - 2023, Prof. Satryo Soemantri Brodjonegoro

- AIPI conducted a six-month-long organizational strengthening process, involving its leadership, staff and broader stakeholders. A new shared vision was identified, one that now sees the organization as playing a more active and central role in setting research agenda and providing input to the government on the advancement of science and technology in Indonesia.
- Along with its new vision, AIPI conducted a human resource capacity mapping, developed a new code of ethics, and formalize a structure and nomenclature for its “knowledge products.”
- A clear standard operating procedure was developed, allowing AIPI to fully receive and manage funding from international donors and partners.
- These important first steps in organizational restructuring and formalization of key documents are expected to help AIPI continue strengthening its institutional governance going forward.

As Indonesia transitions into a more advanced economy and seeks to edge its competitiveness in the region, the role of science and technology will need to gain prominence. With that, AIPI’s role as the designated agency to advise the president and the government on issues related to science, technology, and research needed to evolve.



Capacity building discussion attended by AIPI and KSI

With an opportunity to direct the government and country toward higher investment in R&D, AIPI needed to innovate beyond being merely a platform for researchers and academics into a more active organization with a robust capacity and influence in Indonesia’s knowledge and policy ecosystem.

Since its inception, AIPI’s management infrastructures and systems—including its secretariat—had not been well-developed. It was challenging for the organization—which is led by active and often busy academics—to plan and execute programs, as well as receive and manage external funds necessary for its survival.

AIPI fully realized the need to evolve with time, re-examine its objectives, and redefine its functions. In its General Meeting in 2013—its second since conception—AIPI members put as the first item in their 2014-2018 priority, “[to] strengthen the

capacity and widen the roles of AIPI in producing science-based policy advice.” Achieving such an ambition required AIPI to develop the necessary elements for good organizational governance.

This process began with AIPI’s internal and external stakeholders sitting down together to discuss and plan the organization’s future. Starting in mid-2015, with KSI’s support, AIPI organized a six-month-long process of organizational strengthening (see figure 3 for detailed process). A series of workshops gathered not only AIPI leadership and members, but also its broader external stakeholders to reassess the organization’s roles and functions. The series of workshops resulted in a new vision for AIPI and a set of action plans—short, medium, and long term—to achieve the organization’s objectives.

Throughout this process, AIPI consolidated a new vision and mission for the organization. However, the process allowed AIPI the necessary time and tools to reflect and determine the direction of its future, which helped guide subsequent effort to strengthen its institutional governance.

Based on insights from the workshops, throughout 2015 and 2016, AIPI developed key governance documents, including a code of ethics, an organizational structure manual, an internal communications strategy, a knowledge product manual, and a human resources development guideline. In developing these documents, as well as in other institutional reforms, AIPI enlisted an external consulting agency, Arghajata.

Figure 3 AIPI organized a series of workshops to reinvent itself



The first step was developing a “values and codes” guideline document. In 2017, AIPI members created an ad-hoc committee with two representatives from each AIPI commission to further discuss and develop AIPI’s values and codes prepared by the consulting agency. The process was not always smooth and revealed some of the considerations within AIPI that affect its approach to organizational values and practice.

For example, the agency recommended a single code of values and ethics document that applies to the entire organization. AIPI, however, felt strongly that there needs to be separate documents for leadership and for staff. AIPI also had other considerations, such as acknowledging that AIPI members are also members of other institutions and are not expected to shed those external institutional values when joining AIPI, feeling therefore that the organization’s values and ethics should reflect more general values such as the Pancasila and Constitution.

Another major challenge that AIPI tackled with the support of the consulting agency was internal managerial human resource competency. At the beginning of its partnership with KSI, AIPI’s secretariat was a rather relaxed place, with no set working hours nor output for its staff. Recognizing that a successful organization depends on competent and professional staff, AIPI recruited new program, finance, and human resource officers—and invested in staff capacity building programs—that contributed to the organization’s increasingly prolific work since 2016.

The consulting agency also conducted a performance evaluation of AIPI’s existing staff members to map their competencies, identify potentials for growth, consider career development, and assessed position fit based on skillsets. In 2017, as a result of this assessment and in part affected by AIPI’s funding cut that year, the organization parted ways with 5 of its staff members, while three others resigned.

To further support staff, AIPI heeded the consulting agency’s recommendation to develop contract agreements with their staff, whose previous work arrangements with AIPI were only based on the annual Surat Keputusan of the Secretary General. The consulting agency gave additional recommendations around human resources, including to organizational restructuring, the integration of technology and IT systems, and to recruit professional managers to grow the internal HR competency.

The recommendations provided much needed input for AIPI to reflect on the best practices that could help the organization grow in the future. Improvement continues to be a work in progress, in part due to AIPI leaders’ thus far limited attention to undertake the necessary systemic changes to staffing and management, as well as a continued lack of HR competency and authority within the organization. A strengthening of the human resource element of the organization is hoped to proceed as AIPI’s institutional governance continues to mature.

It should be noted, too, that staffing issues were compounded by practical challenges imposed by having a split secretariat. At the beginning of its partnership with KSI, AIPI had just opened a new office at the National Library in Jl. Medan Merdeka Selatan no. 11, although most of its staff still operated out of the old bureau at Jl. Medan Merdeka Barat no. 15. AIPI had to again move its staff in 2016 when its office had to be renovated, to Jl. Hang Lekiu I no. 6a, Kebayoran Baru. When the renovated National Library was reopened in 2017, AIPI finally enjoyed a new office that reflected a revamped energy for the organisation.

The professional staff culture began to change following an exchange trip to Australia, after which an observer noted that AIPI staff began taking more responsibility in their work and adhering to a 9-5 work hours. There was also improvement in timeliness in conducting and completing work, with some even taking on additional initiatives.

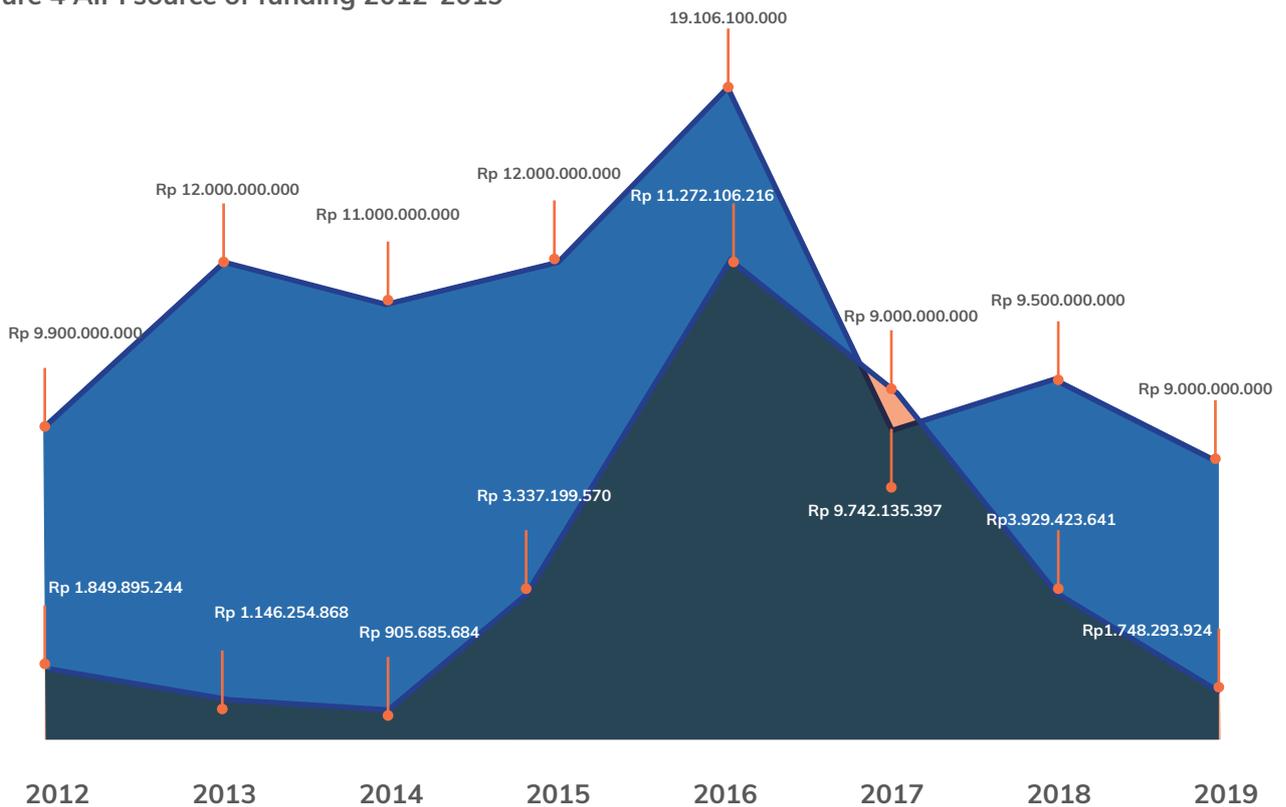
Another significant achievement for the sustainability of the organization was the development of a standard operating procedure that would allow AIPI to receive and self-manage funding from international donor and partners. As funding is a critical prerequisite for any organization, a lack of funding management SOP had previously been a major hurdle for AIPI, hindering it from receiving funds from international sources, which in turn limited the organization’s capacity and programs.

With the assistance of external consultants, AIPI improved on an SOP to manage non-Indonesian state funds (non-APBN), addressing a number of key aspects, including funding procurement (ranging from proposal development to donor/partnership contract development), the management and utilization of funds, and

monitoring and reporting. The SOP, finalized and formally endorsed in 2016, was an important first step for AIPI to receive and use funds from foreign and non-state partners in a more organized and accountable manner.

Since the start of AIPI’s partnership with KSI in 2015, AIPI successfully diversified its funding sources beyond state funding, as illustrated in the graph below. By 2016, non-state funding—mainly from donor agencies, including DFAT through KSI and USAID—increased exponentially and represented the majority of AIPI’s funding for the first time. Non-state budget funding in 2016 was the highest due to donors’ support for DIPI establishment period. Figures for said funding declined again thereafter, returning to the level reported in 2012. As such, funding sustainability remains an issue for AIPI.

Figure 4 AIPI source of funding 2012-2019



(Source: AIPI, Laporan Tahunan Akademi Ilmu Pengetahuan Indonesia 2016 and reported figures for 2017-2019)

With regards to its relationship to the public and stakeholders, AIPI took a stronger hold of its mandate to inform and educate the public, policymakers, and related stakeholders by providing and publishing various output. As part of their organizational strengthening, AIPI formalized a structure and nomenclature for its “knowledge products,” all of which are geared towards greater influence in setting the course of scientific and technological advancement in Indonesia.

Prior to this, AIPI’s various products—ranging from proceedings to white papers—would have been developed by different teams with little coordination. After undergoing a comprehensive review process, AIPI realized that it was critical to improve the management of these products

to better ensure a high quality of the process as well as output. Again supported by the consulting agency Arghajata, and with the input of KSI Lead Technical Advisor, Fred Carden, AIPI developed a knowledge products SOP.

A total of seven products were formalized, each serving a specific purpose. These are: Statement, Consensus Report, White Paper, Conference Proceedings, Convening Activity, Public Outreach, and Foresight. Each of the products was re-examined in detail to formally define and codify their form and function, including through literature studies and information gathering from AIPI members. A products SOP document was completed in July 2017 (see Box 1).

Box 1 AIPI’s codified products allow a more strategic approach to informing the public and providing scientific guidance to the government

The seven products that were codified into AIPI’s business process allows the organization to strategically decide which venue would best serve their purpose under different situations. Since the formalization of the products, AIPI has produced several documents following their own SOP. A White Paper was developed on science, technology and higher education in Indonesia. The paper was submitted to the Ministry of Research, Technology and Higher Education (Kementerian Riset Teknologi dan Pendidikan Tinggi, Kemenristekdikti) in 2017.

A year later, in 2018, AIPI launched a Consensus Report on reducing maternal and neonatal mortality in Indonesia. The report is based on a systematic review of evidence from Indonesia and the world, field trips, and dialogue with national and international experts. As a result, the report provided a strong and robust set of recommendations on how to reduce maternal and neonatal mortality in Indonesia. Another Consensus Report was launched in 2019 on Indonesian biodiversity, which provided yet another set of recommendations based on scientific evidence to protect and manage the country’s biodiversity.

To round up its institutional strengthening process, AIPI developed a communication strategy for both internal and external stakeholders. AIPI recognized that in order to become a more influential organization in the eye of the government and public, it needed to communicate its work and progress, which required a strategic communications plan for the organization.

The strategy development began with a stakeholder mapping and analysis to identify key stakeholders for AIPI, DIPI, and ALMI. The process then resulted in recommendations for the role and function of a communications team as part of

the whole organizational structure, as well as an organizational communications strategy document which outlines the organization’s communications objectives, target audiences, conventional and digital communications methods, public outreach strategies for AIPI’s products, a business process for the production of publication materials, and a program monitoring and evaluation process.

An immediate result of this revamped communication strategy is the publication of a number of collaterals that communicated AIPI’s programs and activities, including brochures and infographics in both Indonesian and English.

² Both AIPI and ALMI are active on Twitter, with the handles @AIPI_Id and @ALMI_Indonesia.

The academy also utilized social media to spread its influence and disseminate information.²

The rise of AIPI's activities was also reflected in the rise of media coverage of AIPI.³ With an increased communications capacity, AIPI not only developed stronger organizational governance internally but is now able to broadcast this strength to the public to solidify its reputation as a leading organization in the advancement of Indonesia's science and technology.

Finally, but no less significant of a change, is the increasingly multi-disciplinary approach that takes place within AIPI driven by a realisation from several key figures at AIPI that current societal challenges such as stunting or religious extremism require a more comprehensive scientific analysis. In the past, it was very common for AIPI commissions to work in silos, under the socially

agreed understanding that each commission had a set of very special skills that were relevant to a responding set of very specific issues. This perception gradually shifted with the growing acknowledgment that real-life issues faced by the government and the public are complex and require a multi-disciplinary approach. This is most evident in how events such as discussions and workshops are now organized across commissions. AIPI product documents as listed above are also drafted by contributions from different commissions. Interviews with AIPI members indicate that this trend will continue in the future, with a general consensus from all members that this should and will become the norm within the organization.



One of the doorstep interview opportunities by the media to ALMI members

² Both AIPI and ALMI are active on Twitter, with the handles @AIPI_Id and @ALMI_Indonesia.

³ Between February 2017 and December 2019, AIPI, ALMI and DIPI recorded 183 media coverage, as much as 72.68% in online media, 20.77% print media, and 6.56% video or online television. The coverage was increasing from 2017-2019. The contents of publications are opinions, articles or coverage of certain issues where AIPI and ALMI were the speakers (AIPI Final Report to KSI, March 2020, p. 31).





Increasing INFLUENCE

2016 - Prof. Jamaluddin Jompa during Australia-Indonesia
Science Symposium at Canberra, Australia

- AIPI launched SAINS45, a proposed comprehensive research agenda to usher a new era of prosperity with a vision of having Indonesia becoming a fully developed country by its independence centennial in 2045.
- Two white papers, one on Science, Technology, and Higher Education Toward Indonesia 2045 and another on The Era of Disruption: Opportunities and Challenges for Indonesian Higher Education, were developed in 2016 and 2017, and submitted to the National Agency for Development Planning (Badan Perencanaan Pembangunan Nasional, BAPPENAS) and then-Ministry of Research, Technology and Higher Education (Kementerian Riset Teknologi dan Pendidikan Tinggi, Kemenristekdikti) to support science-based policymaking.
- A formal position paper on institution, funding, and sanctions in Indonesia's R&D sector was submitted to the parliament and made accessible to the public as AIPI's input to the National Science and Technology System Bill (UU Sisnas Iptek).
- AIPI increasingly expanded partnerships to better communicate science and science policies to the public, working with media partners, as well as popular social media channels to widen its outreach and position scientists closer and more relevant to the public.

As the premier platform for the nation's leading scholars, AIPI holds a unique position to advise and inform the government and related stakeholders to propel Indonesia toward prosperous development through a science-driven approach.

Since its partnership with KSI starting in 2014, AIPI has significantly stepped up its active engagement on providing advice and influencing some of the nation's most pressing science and technology policy developments.



2017 - The launch of AIPI's White Paper on Science, Technology, and Higher Education Toward Indonesia 2045

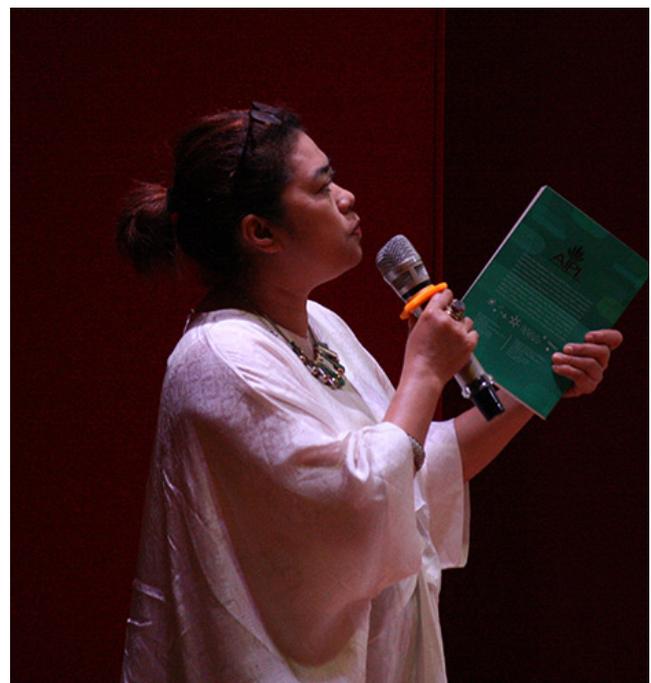
AIPI's mandate to advise the government was re-formalized in February 2017, when a Memorandum of Understanding was signed between AIPI, ALMI and the Executive Office of the President (Kantor Staf Presiden, KSP) on the provision of scientific research and advice to support the development of strategic government policies. In recent years, AIPI has developed a number of publications and embarked on concerted advocacy efforts, starting with the ground-breaking SAINS45 document that comprehensively formulated critical research questions on the future of the country.

SAINS45 was the fruit of an intensive work in identifying key areas of need and imagining Indonesia in 2045, when the country will celebrate 100 years of independence. Departing from both a reflection of progress in the past and an imaginative vision of the future, SAINS45 formulated a comprehensive agenda for Indonesia's scientific and technological R&D to realize an Indonesia that is just, prosperous, and respected globally.

The concept was taken from 17-8-45 (17th of August 1945, the year Indonesia proclaimed independence) where 17 scholars would explore 8 clusters of study to develop 45 research questions. With the input of more than 100 scientists in AIPI's network and developed by a committee of 17 scientists from universities across Indonesia, SAINS45 formulated critical questions based on the perceived needs and priorities for country's development in the next few decades.

With an emphasis on building consensus, the document writing process was a collaborative one, where the authors met each month for almost a year to read, write, and debate the topics and research questions. In addition to established experts and academics, the draft of the document was presented in public consultations in higher education institutions across the country, including in Semarang, Jambi, Palu, Makassar, and Bandung in order to take on a broad, 360-degree perspective in envisioning the country's future.

The eight research areas are organized around the most pressing challenges and opportunities for Indonesia ahead. These challenges cover both spectrums of the social and natural sciences and represent a broad range of ideas from identity to natural resources, and from economics to material science. Figure 5 provides the full list of the research areas.



The launch of SAINS45 document at National Library, Jakarta

Figure 5 SAINS45 presented eight research areas organized around Indonesia’s most pressing challenges and opportunities



Meanwhile, the 45 research questions were designed to rethink Indonesia’s challenges and spark ideas to answer those challenges and advance Indonesia by 2045. Written in a more conversational and accessible tone, SAINS45 aims to become a breakthrough in communicating scientific research and planning to the general public. At the same time, it also seeks to inspire and push a culture of research excellence among the academic and scientific community.

SAINS45 was officially launched on 19 August 2016 in the presence of the late former President Prof. Dr. B. J. Habibie, as one of AIPI’s founders,

and Dr. Muhammad Dimiyati, then-Director General for Strengthening Research and Development at the Ministry of Research, Technology, and Higher Education.

To ensure the document serves its function to influence national policies, the book was also given to the Ministry of Finance, the National Development Planning Agency (Bappenas), Ministry of Education and Culture, Ministry of Health, as well as AIPI’s other partners and stakeholders. Bappenas in particular has acknowledged and praised the document as a useful reference for the development of the 2045 and 2085 Indonesia Vision.

SAINS45 was publicized to the broader academic community through several discussion forums across Indonesia, including at Universitas Jambi (Jambi province), Universitas Pattimura (Maluku province), and Universitas Cenderawasih (Papua province) throughout 2016 and 2017.

AIPI also strongly felt that the document should be directly accessible to the general public. In an important step in encouraging public education and participation in the sciences, SAINS45 is made available for download—free of charge—through the AIPI and DIPI websites. AIPI also continued to share the edition to the scientific community and public at large, including by ALMI members through the “Scientists Go to School” program.

Beyond this seminal document, to further realize AIPI’s mission to provide input to science-based policy making, AIPI developed two white papers throughout 2016 and 2017. The first tackled the much-needed reform to innovate Indonesia’s higher education system, to move from a mono-disciplinary focus to a more multi-, inter-, and trans-disciplinary approach to respond to the world’s evolving dynamics.

Titled *The Era of Disruption: Opportunities and Challenges for Indonesian Higher Education*, the paper was developed through a series of workshops, seminars, and public consultations involving six universities across Indonesia. A discussion across AIPI’s five commissions further provided comments and recommendations. The white paper was also published as a book titled *Recommendation to Stop Denial: Implement Change*.

A second white paper was developed at the request of the then-Ministry of Research, Technology and Higher Education (Kementerian Riset Teknologi dan Pendidikan Tinggi, Kemenristekdikti). AIPI formulated recommendations in the *Science, Technology, and Higher Education Toward Indonesia 2045* paper, which later served as reference for a national plan on research, technology, and higher education to support Indonesia's economic advancement to escape the "middle-income trap."

The white paper was developed in accordance with AIPI's standardized products SOP, involving public consultation and a peer review process. Over the course of a year, AIPI examined the current situation and challenges around science, technology, and higher education in Indonesia, while taking into account influencing economic, educational, health, and demographic factors. The authors also referenced experiences from other countries that have developed science and technology as a driving factor in advancing their economies.

Both white papers were submitted to the National Agency for Development Planning (Badan Perencanaan Pembangunan Nasional, BAPPENAS) and then-Ministry of Research, Technology and Higher Education (Kementerian Riset Teknologi dan Pendidikan Tinggi, Kemenristekdikti), with the intention that AIPI's recommendations can help policymakers create strategies and policies that could propel Indonesia toward economic advancement.

The *Science, Technology, and Higher Education Toward Indonesia 2045* in particular was submitted to support the government's development of the National Research Master Plan (Rencana Induk Riset Nasional, RIRN) 2017-2045 and follow-up plans up until 2045, hence influencing the strategic direction of Indonesia's science, technology, and higher education policies.

In addition to these publications, AIPI and ALMI also embarked on direct engagement with key stakeholders in the government, including the Executive Office of the President (Kantor Staf Presiden, KSP). In 2016, ALMI conducted a discussion with KSP on the topic of "Bringing Science Closer to Policy: Realities, Challenges, and Opportunities." The meeting identified key potential collaboration between ALMI and KSP. As a follow-up to the meeting, another discussion was held on 13 December 2016. In another follow-up discussion themed "Reformation of Research and Education

Management," ALMI and KSP discussed in further detail the need for Indonesia to prioritize scientific research.

These early discussions with the KSP led to a bigger stakeholder discussion event with ALMI, KSP, and related ministries and agencies. The "Assessment of Research and Higher Education Human Resource Management" forum on 1 February 2017 was attended by representatives from the Ministry of Administrative and Bureaucratic Reform (KemenPAN-RB), the Coordinating Ministry for Human and Culture Development (KemenkoPMK) and the Ministry of Research, Technology, and Higher Education (Kemenristekdikti), as well as the Centre for Innovation Policy and Governance (CIPG) as KSI's fellow partner.

The forum discussed issues around Indonesia's higher education institutions and challenges to Indonesia's competitiveness in knowledge production more broadly. At this forum, ALMI forwarded a number of key recommendations to improve the country's higher education system, primarily to develop two types of institutions (research/knowledge findings driven and trade/market driven) and to better foster researchers and academics through peer review-based career assessment, enhancing recruitment, improving career security and mobility across institutions, and cultivating the researcher/academic network in general. The forum served as the basis for further discussions and engagement with KSP and related stakeholders in the following months.

AIPI continued these engagement efforts throughout 2018. Although in several occasions meetings were delayed or cancelled due to various members or stakeholders' schedules, AIPI participated in several key meetings in 2018 and 2019 regarding the future of research ecosystem in Indonesia, particularly on two significant policy developments: the drafting of the new Law No. 11/2019 on National System for Science and Technology (UU Sisnas Iptek), and the creation of the National Research Body (Badan Riset Nasional, BRN)—both of which still being debated today.

The first key meeting that year, on 18 September 2018 at the Habibie Center, exchanged ideas around the draft UU Sisnas Iptek. The law, which was later passed on 16 July 2019, replaced the previous Law Number 18/2002 on the National System for Research, Development, and Implementation of Science and Technology.



2019 - AIPI advocating their focus on three primary policy areas: institutions, funding, and abolishing criminal sanctions for researchers who conduct research without a formal government permit during "Diskusi Terbatas: Knowledge to Empower"

AIPI played a role in providing input to the bill in the hopes that the new law would best improve and cultivate Indonesia's scientific and educational ecosystem. Represented at the meeting by Executive Director of the Indonesian Science Fund (DIPI), Teguh Rahardjo, AIPI conveyed their focus on three primary policy areas: institutions, funding, and abolishing criminal sanctions for researchers who conduct research without a formal government permit—a red tape that both domestic

and international scholars have criticized for hindering research and academic freedom.

AIPI continued to advocate on these three key issues, conducting another stakeholder discussion at the National Library in Jakarta on 14 March 2019 with the Secretary of the Directorate General of Research and Development Strengthening of the Ministry of Research, Technology, and Higher Education; Director of Budgeting Regulation Harmonisation from the Directorate General of Budgeting of the Ministry of Finance; and Director of the SMERU Research Institute.

With a firm belief that Indonesia must encourage—rather than limit—research, AIPI feared that the inclusion of the criminal sanctions in the bill in its present state are “counterproductive to Indonesia’s efforts to promote international research collaboration and must be removed.” AIPI believes that the criminal sanctions would discourage research, including international collaborations.

AIPI proposed, instead, that Indonesia adopt globally enforced codes and regulations for research, such as the Convention on Biodiversity in the field of biological research, and applies administrative sanctions when necessary. Should a criminal violation occur, AIPI argued, they can be addressed by the existing Criminal Code.

Another area of advocacy with regard to the bill is research funding. As evinced by the creation of DIPI, it has been AIPI's strong position that Indonesia needs an independent body to manage and disburse research funds that is not solely dependent on the state budget (APBN). “This agency must be independent, not a government agency. Why does it need to be independent? Because science and technology must be useful for the public, not merely for the government,” AIPI Chair Satryo Brodjonegoro explained.

State research funds management in Indonesia is also presently fraught with issues, including frequent disarray in data collection, lack of transparent and accountable processes, and inadequate mechanisms to measure performance of the research and development conducted. AIPI insists that an independent research funds body would need to be professional, transparent, accountable, and uses international best practices.

AIPI distilled their input to the bill in a position paper, which is also publicly available. The roughly 20-page document, reviewed by the Centre for Innovation Policy and Governance (CIPG),

summarizes and provides reasoning and evidence for AIPI's position and recommendations on the above three issues. It includes close reading of potentially problematic articles in the bill, as well as recommended revisions. AIPI also appended case studies of best practices in knowledge and technological governance in other countries, including Thailand, Japan, Germany, and England as reference for best practices.

Meanwhile, AIPI continued with more direct stakeholder engagement, including a limited discussion on the bill, co-organized with CIPG on 12 December 2018, inviting the House of Representatives (DPR) special committee on the UU Sisnas Iptek.

Unfortunately, due to scheduling conflicts, only one member of the special committee was able to attend. However, the panel discussion was a success. With Prof. Dr. Satryo Soemantri Brodjonegoro (AIPI), Dr. Subandi (Deputy for Human Development, Society, and Culture at the National Agency for Development Planning/ BAPPENAS), Dr. Dimiyati (Director General for Strengthening Research and Development at the Ministry of Research, Technology, and Higher Education), and Ledia Hanifa (member of the DPR special committee on RUU Sisnas Iptek) as speakers, the discussion addressed in depth the challenges and opportunities in research funding and investment.

With the strengthened institutional capabilities discussed in a previous chapter, AIPI has also increased media engagement, publicizing their advocacy through media coverage in the country's top-tier publications such as *Kompas* and *Antara*.

The final version of the law that was passed addressed some of AIPI's key concerns. Regarding funding for research, the law mandates the formation of an endowment fund for research, development, evaluation, and application of science and technology—something that has been much welcomed by the scientific and academic community at large.

Unfortunately, on criminal sanctions, the law kept provisions on administrative and criminal sanctions—including for foreign researchers, despite AIPI's efforts to convince lawmakers otherwise. Specifically, the law states that foreigners who conduct research without formal permit from the government could face up to IDR 4 billion fine and would be barred from applying for a research permit for 5 years.

It also states that anyone conducting “high-risk” or “dangerous” research without proper government permits could face up to 1 year in prison and a fine of up to IDR 2 billion. Meanwhile, if a researcher causes damage to invaluable property or endangers and/or causes the death of individuals, they are liable to face up to 7 years in prison and a fine of up to IDR 7 billion.

These articles of the law have attracted criticism from academics, and AIPI has publicly lamented it in national media. AIPI General Secretary Chairil Abdini was quoted in *Tempo* newspaper, “Criminal provisions contained in the UU Sisnas Iptek are very regrettable amid Indonesia's efforts in currently just beginning to open research and technology for talents/researchers, lecturers and foreign students to collaborate with Indonesian researchers,” adding that “this criminal provision weakens [discourages] foreign researchers from conducting research in Indonesia or gives the impression of Indonesia closing itself to foreign researchers and also appearing to limit academic freedom.”

Berry Juliandi from ALMI was also quoted by the media highlighting comments in a similar tone. These voiced concerns were part of the two academies' effort in making sure that international collaboration – a much needed ways of working in science, is not stifled.

The second policy advocacy area is the formation and management of the National Research and Innovation Body (Badan Riset dan Inovasi Nasional, BRIN), which is mandated by the new UU Sisnas Iptek. AIPI generally supports a reform of the science and educational institutions in the country. Satryo Soemantri Brodjonegoro had outlined AIPI's view that existing government science and technology institutions are currently not functioning optimally, with overlapping research goals and functions.

For example, the Indonesian Institute of Sciences (LIPI), which is tasked to focus on basic science research and upstream development of science and technology, has also been conducting applied science and technology programs—which should be the purview of the Agency for the Assessment and Application of Technology (BPPT). Similarly, a number of R&D divisions within technical ministries, such as the Ministry of Agriculture, have also been doing applied work.

The UU Sisnas Iptek addresses this by mandating the creation of a National Research and Innovation Body (Badan Riset dan Inovasi Nasional/BRIN). The formation of BRIN has attracted a fair share of controversy. The precise organizational structure, role and function, and management of the body is still currently heavily debated.

One of the ideas currently being considered is the merging of four government research agencies—LIPI, BPPT, the National Nuclear Energy Agency (BATAN) and the National Institute of Aeronautics and Space (LAPAN)—into the BRIN, which would set into motion not only a significant overhaul of resources and assets but create confusion around the super-agency's research scope and objectives.

Another part of the “super-agency” proposal is the integration of existing R&D divisions within the line ministries into the BRN as well, erasing R&D from the scope of work of ministries. While this idea aims to increase coordination of research across ministries' focus areas of interest, it also risks potential political conflicts among the ministries' vastly different interests.

AIPI's position on this had been to advocate for a strengthening of existing institutions, clearly distinguishing their areas of focus, and improving coordination and supervision across agencies, rather than establishing a new body. Leading up to the passage of the UU Sisnas Iptek, AIPI conducted active advocacy, leveraging AIPI founder Prof. Habibie's influence to provide input to President Joko Widodo before the former's passing in 2019. On 2 October 2018, AIPI was invited to a coordinating meeting at the Coordinating Ministry for Human Development and Culture (KemenkoPMK).

AIPI and ALMI also directly met with members of the special committee in Commission VII of the House of Representatives tasked with lawmaking on scientific affairs. On 16 October 2018, ALMI and CIPG members met with Representative Rieke Diah Pitaloka of the PDI-P party whose faction proposed the creation of the BRIN.

At the meeting, ALMI conveyed concerns around the integration of all national government research agencies and emphasized the importance of

an independent research endowment and grants disbursement process, to which Rieke acknowledged that the concept and structure of BRIN was still open to input and change. At this occasion, ALMI also provided Rieke with a copy of the SAINS45 document and ALMI's policy brief on RUU Sisnas Iptek for reference.

ALMI also met with a member of the working committee at the then-Ministry of Research, Technology, and Higher Education, Dr. M. Dimiyati. During the meeting, AIPI expressed two main agenda: the creation of a national research endowment fund (and DIPI's potential role in that scheme), and becoming a more strategic partner for the ministry.

AIPI has synthesized their recommendations into a Statement on Strengthening National Research Funding System, to be advocated to policy makers. A long path—and a key opportunity—still lies ahead for AIPI and DIPI to continue lobbying and convincing key stakeholders in both the technical ministries and in the House of Representatives—as well as the President and PDI-P's inner circle—of the importance of an independent funding body, as well as other reforms to modernize the country's research funding schemes.

As the structure, role, functions, and scope of influence of the BRIN is also currently being developed, AIPI stands to continue playing a strategic role in advising the best course forward for the country's research and innovation agenda.

⁴ *Pandangan Akademi Ilmu Pengetahuan Indonesia terhadap Isu Kelembagaan, Pendanaan, dan Sanksi Pidana dalam RUU Sistem Nasional Ilmu Pengetahuan dan Teknologi*. Accessed from <https://aiapi.or.id/frontend/view/detail/246>



ALMI

Australian Academy of Science

Expanding NETWORK

The Australia-Indonesia Science Symposium
at Canberra, Australia

- As a prominent platform for the country's top scientists, AIPI plays a leading role in nurturing Indonesia's scientific community.
- AIPI made strides in expanding and strengthening relations between Indonesian and international scientific communities, including through the inaugural Australia-Indonesia Science Symposium in 2016, which fostered stronger networks and cooperation across national borders.
- AIPI also supports and guides the nation's emerging researchers through the founding of the Indonesian Young Academy of Sciences, ALMI) in 2016 to enable a more inclusive science community to drive innovation.

A fundamental element to a productive innovation ecosystem is a strong network of thinkers and doers, eager to explore, exchange, and test ideas to see what works and does not. No idea can exist in isolation, and often the best research is done collaboratively. For Indonesian scholars, however, structures and resources to support communities of researchers are still lacking. Opportunities to present and share research—especially to an international audience—are still limited.

With that situation in mind, AIPI has always considered it one of its most important responsibilities to help cultivate the scientific community in Indonesia. Expanding its network in an open and inclusive way has been one of its main focus and achievement in the last few years.



2016 - ALMI's presentation at the Australia-Indonesia Science Symposium

A challenge for Indonesian researchers has been gaining international attention and embarking on transnational collaborations due to a number of factors, not least language limitations, as well as institutional and funding constraints. With KSI's support, AIPI participated in a number of international academic fora and symposia, including the Open Science Meeting, Inquiry Based Science Education Seminar, Science at Shine Dome, Science 20 Meeting, and the 3rd Indonesia-United States Joint Commission Meeting on Science and Technology. The Academy was also active in preparing and co-facilitating the Australia Indonesia Science Symposium.

These participations on the international stage were concrete strides in AIPI's mission to represent the Indonesian scientific and academic community globally and develop relationships with international partners.

The first ever Australia Indonesia Science Symposium was conducted with the support of KSI and additional funding from the Australian Department of Foreign Affairs and Trade (DFAT) to create a networking platform where scientists and researchers in the two countries could meet, exchange ideas, and explore collaborations. The symposium gathered 60 Indonesian scientists and 60 Australian scientists. The symposium allowed for in-depth exchanges between Australian and Indonesian scientists working on questions of common concern, even beyond the event itself.

Answering another common challenge in the academic world, AIPI also took it upon themselves to engage younger and early-career scholars. In 2016, AIPI established the Indonesian Young Academy of Sciences (Akademi Ilmuwan Muda Indonesia, ALMI). The 40 initial members were a group of Kavli Fellows and several other young scientists that were selected out of the around

200 alumni of a series of symposia hosted by AIPI, including the Indonesian-American Kavli Frontiers of Science Symposia and the Social Science and Humanity Symposia. ALMI is envisioned to serve as a platform to inspire and support young scientists in advancing Indonesia's science and technology.

With a strong emphasis on seniority in Indonesian culture—including in the academic and research spheres—being an emerging scholar can be challenging. As Yanri Wijayanti Subronto, ALMI member and staff lecturer at Universitas Gadjah Mada's Faculty of Medicine, testified, "Indonesian young scientists actually have the potential to help solve problems and build this nation, but because they are not supported by quality research facilities, a lack of research funds and cross-disciplinary and multi-disciplinary discussion fora, as well as no connection between research results with industry and public policy, this potential has not developed."

As the next generation of scientific leaders, young Indonesian scholars face a tremendous opportunity—and challenge—to envision and build the science ecosystem they want to be part of. By encouraging early- and mid-career scholars and providing a supportive environment for them, ALMI has the potential to become an incubator for the future's leading minds to come up with creative solutions for the country's path ahead.

At first, selecting the criteria for eligibility for ALMI proved challenging, and it was determined that members must at least have a PhD and be under 45 years of age. It was also agreed that ALMI will take on the objectives to encourage the role of young scientists in advancing science and the culture of scientific excellence in Indonesia in the effort to increase the nation's competitiveness.



2019 - Director of Communication ALMI Inaya Rakhmani as one of the speakers during KSIxChange "Evaluating the Social Sciences Research System in Indonesia"

To achieve those goals, the organization created four working groups: Frontier Science, Science and Policy, Science and Society, and Science and Education. Among ALMI's programs are to push for interdisciplinary and inter-institutional collaboration, develop scientific studies, and to advocate the government and society on the importance of science in policymaking and public life at large.

ALMI has been visible and vocal, conducting on a number of public discussions, seminars, as well as media outreach to bring science closer to the general public, addressing some of the most current public interest topics. One example was a 2018 discussion on vaccines in the face of the rising anti-vaxxer movement in Indonesia from Islamic groups that claim vaccines cannot be guaranteed to be "halal" thereby discouraging Muslims from vaccinating themselves or their children.

Conducted at the National Library in Jakarta and widely covered by the media, the discussion spotlighted the paramount importance of vaccination as a key preventive public health measure. Speakers included AIPI member Prof. Musdah Mulia and ALMI members Dr. Ahmad Faried and Dr. Neni Nurainy, with ALMI member Dr. Sudirman Nasir as moderator. Dr. Neni underlined that vaccination is not just a medical concern but required a social approach, recalling the important role of the media in disseminating accurate information.

The discussion also touched on the greater societal issue around "fake news," hoax, and information literacy, highlighting the importance of science education in combatting hoax. The discussion generated media coverage from widely read and respected publications including *Tempo*, *Kompas*, *Media Indonesia*, and *Tirto*, successfully broadcasting the issue and ALMI's position on this key social issue to the greater public.

Another discussion hosted by ALMI was the Women in Science Ecosystem forum with lawmakers, media, and other knowledge sector stakeholders. ALMI recognized that in Indonesia, women are still underrepresented in the sciences—something unfortunately reflected in ALMI's own membership with 68% men (34 members) and 32% women (16 members). ALMI also acknowledged that a strong culture of patriarchy in Indonesia still has not provided equal space for women to embark on a career in the scientific field.

As a contribution to remedy that, ALMI invited Dr. Francesca Maclean—an expert in gender equity for Science, Technology, Engineering and Mathematics—as a keynote speaker. ALMI also presented Dr. Inaya Rakhmani and Dr. Sri Fatmawati to share their experiences and perspectives on the real-life challenges faced by women in STEM. Based on the discussion, ALMI formed a working committee on Women in Science Ecosystem to further strengthen the organization's commitment and work to increase gender equity in the sciences.

ALMI has also played an active role in AIPI's advocacy efforts during the drafting of the Law on National System for and Technology (UU Sisnas Iptek)—which was passed on 16 July 2019—participating in parliament public hearing, meetings and stakeholder engagement activities.

Beyond advocacy and public outreach efforts within Indonesia, ALMI also played a role in extending the opportunity to young, early- and mid-career scholars to participate in international academic fora. In November 2018, ALMI sent two of its members to present their papers at the International Conference for Young Researchers in Advanced Materials in Adelaide, Australia. In addition to presenting their research, the conference also allowed ALMI to network with academics as well as corporate and industry partners in Australia. ALMI regularly participated in worldwide meeting of young academies organised by the Global Young Academy, an international society of young scientists, aiming to give a voice to young scientists across the globe.

By continuing to leverage the opportunities to influence the development of education, science, and technology in Indonesia, and by encouraging the country's young scientists in ensuring there is a supportive home and future for them, ALMI can play a catalytical role in advancing and modernising Indonesia's science and innovation ecosystem, with the next generation leading the charge.



2019 - KSI and ALMI Collaboration to increase public understanding of the knowledge sector in Indonesia during KSIxChange "Connecting Research Agenda with Cultural Development"



ESTABLISHING an Independent Research Funding Agency

Executive Director of DIPI, Dr. Teguh Rahardjo during
“Diskusi Terbatas: Knowledge to Empower”

- The Indonesian Science Fund (Dana Ilmu Pengetahuan Indonesia, DIPI) was formally established under the auspices of AIPI in 2016.
- DIPI is Indonesia's first independent research funding agency that provides research grants on a competitive basis through a peer review process, which is aligned with internationally-recognized research funding practices
- DIPI continues to build its reputation as a nationally and internationally recognized research funding agency and has established collaborations with both donor agencies and other research funding agencies in Asia and Europe

Talks of creating a national science fund have been floated in Indonesia for many decades. More recently, on a hot July 2012, a "Creating an Indonesian Science Fund" presentation by Professor Satryo Soemantri Brodjonegoro at the National Gallery in Jakarta outlined the necessity of an independent research funding system that is free from the state funding cycles.

It was not until two years later that the idea was picked up by the government and AIPI softly launched the Indonesian Science Fund (Dana Ilmu Pengetahuan Indonesia, DIPI) with the support of the Ministry of Finance, the National Research Council (Dewan Riset Nasional), the Indonesian Institute of Sciences (Lembaga Ilmu Pengetahuan Indonesia), as well as the Australian and US embassies.



2014 - The soft launch of DIPI with the support of the Ministry of Finance, the National Research Council (Dewan Riset Nasional), the Indonesian Institute of Sciences (Lembaga Ilmu Pengetahuan Indonesia), as well as the Australian and US embassies.

It would be another year before the fund was announced to the public. On 27 May 2015, AIPI presented DIPI to the public, and on 7 August 2015 signed a Memorandum of Understanding with the Indonesian Education Endowment Fund (LPDP) to provide the funding for the nascent agency. On 26 October 2015, leveraging President Joko Widodo's state visit to Washington, DC, a point on research fund management was included in the Joint Statement between President Joko Widodo and then-US President Barack Obama.

Finally, a Presidential Decree signed on 29 February 2016 placed DIPI under the auspices of AIPI. It was then introduced to the broader scientific community in Indonesia a month later.

DIPI has four long-term strategic objectives:

1. Supporting basic research and frontier research by providing a flexible and sustainable fund, including research management services;
2. Promote scientific research excellence;
3. Increase the number of Indonesian leading researchers who are productive and well trained;
4. Become a trusted independent research funding body.

To support the organization in its first years, the Indonesian Education Endowment Fund (LPDP) committed to five-year funding for DIPI, as agreed in the Memorandum of Understanding in August 2015.

Meanwhile, KSI supported operational and staff costs for DIPI, and assisted DIPI in developing internal organizational systems, including Standard Operating Procedures (SOPs) and policies on research grant disbursement, finance and accounting, fund management, and procurement. With this internal set of policies and SOPs, DIPI has quickly become an internationally trusted and respectable institution to manage research grant funds with the principle of good governance.

Soon after its founding, DIPI announced a call for proposals to the scientific community on two of the themes identified in SAINS45: Focus 1 (Identity, Diversity, and Culture); and Focus 3 (Life, Health, and Nutrition). The first call for proposals was launched in April 2016. The call attracted significant attention, garnering a total of 467 proposal submissions by the end of July 2016. USAID provided support for DIPI by funding DIPI's online grant management software, seconding high-level officials from US research funding agencies in DIPI to help set up and manage the peer review process, and organizing panel review meetings. At the same time, DIPI also embarked on a joint call for research proposals with the UK Medical Research Council (MRC) and then-Research Council UK (RCUK) under the Newton Fund partnership to support bilateral UK-Indonesia research projects in infectious diseases, air pollution and human health, peatland and mangrove, and astronomy.

The relatively high number of proposals indicated that DIPI's formation was much needed and welcomed by the scientific community in Indonesia, and that indeed the country's scholars were eager to conduct research if the funds were made available. Yet perhaps the true indicator of success is not simply the number of incoming proposals, but rather the number of shortlisted ones, which indicates the *quality* of the proposals, measured against international standards. In that light, it is worth noting that for the Newton Fund joint call, 75 percent of the incoming proposals made the cut, hence meeting UK's standard for fundable research projects.

DIPI was committed to carrying out the proposal selection process in accordance with international best practices, ultimately selecting 9 research proposals from the DIPI call and 11 proposals from the joint call. Unfortunately, funding promised by the government's LPDP program fell through, and the grant process was halted due to the lack of funds. This unforeseen incident was a virtually insurmountable challenge for such a new organization, and DIPI had to immediately enter crisis management mode in order to both protect the grant applicants and the organization's own reputation.

In order to fulfil DIPI's commitment to the winning applicants of DIPI Call on Focus 1 and Focus 3, DIPI applied for joint-call grant schemes while lobbying the Ministry of Research, Technology, and Higher Education (Kemenristekdikti) to provide some funds. Throughout a series of fundraising and advocacy efforts, in 2018 AIPI successfully secured the funds from Kemenristekdikti to fully cover the amount as proposed by the selected principal investigators in their proposals, provided that they now adhere to the sets of stipulations imposed by a Kemenristekdikti grant.

As of October 2018, three of the chosen principal investigators went ahead with the revised scheme, one rescinded their project as by that time they had submitted their proposal to a different grant scheme, while three others had not responded to DIPI.

Despite the major setback, DIPI maintained its reputation throughout the selection process. International reviewers—Prof. Bruce Alberts (Former Chair of the United States National Academy of Sciences), Prof. Suzanne Cory (Former Chair of the Australian Academy of Science) and Prof. James Fox (AAS Member)—sent a letter to President Joko Widodo, praising the quality of the selected research proposals and commending DIPI for carrying out the selection process with excellent standards. In the letter, they also congratulated Indonesia on the formation of DIPI as a research funding institution that prioritizes competition, transparency, and applies an international standard selection process.

In a separate agreement with LPDP, in May 2017 DIPI and LPDP signed a cooperative agreement to provide IDR 12.5 billion in funding for 11 Indonesian winners of the Joint Call with UK-MRC/RCUK for the first-year research. DIPI has signed 11 cooperative agreements with research institutions.

Moving beyond domestic borders, DIPI strengthened its efforts to expand research funding sources, including through joint funding schemes with international partners. Examples include the Indonesia-UK joint call and DIPI's participation as the call secretariat for the Southeast Asia – European Union Joint Funding Scheme (SEA-EU JFS) on the topic of “Infectious Disease and Bioeconomy” in 2018, and then again in 2019 on the topics “Integrated Water Resource Management and Nanotechnologies” and “Infectious Disease and Smart Cities.”

Meanwhile, DIPI continued to advocate for broader reforms and developments to the national research funds landscape. In 2018, DIPI developed a policy brief on a National Research Funding System, a milestone in the organization's mission to serve as influencers on the improvement of Indonesia's research funding ecosystem. Developed over the course of two months, the policy brief served as a key advocacy tool as DIPI continued to present its position at various meetings and platforms around research funding.

Another significant contribution by DIPI to the existing research landscape is in building a stronger culture of transparency, accountability, and rigorous performance measurement in the fundsmanagement process. Living up to its own standards, in 2018 DIPI evaluated all research activities conducted by the 11 research institutions receiving funds from the LPDP-facilitated Joint Call with UK-MRC/RC-UK through a peer-review process.

DIPI appointed a number of experts in the respective fields to examine the research reports submitted and provide recommendations as to whether the research funds should be continued. Based on this peer-review, the evaluators determined that the research progress was satisfactory and that 11 of the projects are recommended to be continued into their second year. In a follow-up meeting with LPDP and

the researchers, DIPI secured a collaboration agreement with LPDP to continue funding for the second year. In 2019, DIPI was appointed to manage LPDP's funding for international research collaboration, RISPRO. Under this partnership, DIPI will receive 2.5% of the total funding of the research projects, which strengthens the business model that can contribute to DIPI's sustainability.

DIPI has also recently put itself on the radar to be part of funding delivery for Kemenristek/BRIN's national research priority. Details of this partnership is still under discussion at the time of the writing.

Having faced and overcome significant challenges early on since its founding, DIPI currently still only provides a small fraction of the resources for Indonesia's vast research needs. However, its existence alone—as well as the commendable hard work of its officers to proactively pursue funding options and establish a culture of international standards in grants management best practices, DIPI's high-value contribution lies in its potential to usher in reforms to Indonesia's investment in research and knowledge production and management, and ensure high-calibre research gets funded and conducted.



Akademi Ilmu Pengetahuan Indonesia (AIPI) or the Indonesian Academy of Sciences was established in 1990 under the Law No. 8/ 1990. The academy serves as an independent body providing insights and advice to the Government on science and technology. It comprises of five commissions which cover the Basic Sciences, Medical Sciences, Engineering Sciences, Social Sciences and Cultural Sciences. AIPI strives to promote scientific knowledge through a variety of activities such as conferences, policy discussion forum, publications, as well as through expanding national and international collaborations. Current President of AIPI is Professor Satryo Soemantri Brodjonegoro.



Akademi Ilmuwan Muda Indonesia (ALMI) or the Indonesian Young Academy of Sciences was established in 2016 as an autonomous body and under the auspices of Indonesian Academy of Science (AIPI). With Indonesian prominent young scientists as members, ALMI aims to promote scientific culture of excellence and the advancement of science in Indonesia. Current President of AIPI is Dr Alan F. Koropitan.



Dana Ilmu Pengetahuan Indonesia (DIPI) of the Indonesian Science Fund is an autonomous body under the auspices of the Indonesian Academy of Sciences (AIPI) that directly fund researchers to produce world-class scientific research needed to build Indonesia's global competitiveness. DIPI funds fundamental and frontier research that show promise for increasing the knowledge value of scientific explorations in Indonesian society, while at the same time participating in the establishment of a vibrant Indonesian scientific research community on par with global and international scientific standards for excellence and merit-review. DIPI is currently led by Dr Teguh Rahardjo as an Executive Director.



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