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WORKING PAPER 24

Investing in Knowledge:

The Establishment of the Indonesian
Science Fund (Dana Ilmu Pengetahuan Indonesia)



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Written by

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Table of Contents

Table of Contents	iii
Abbreviations and Acronyms.....	iv
1. Introduction	1
2. The Origins of the Idea	3
3. Turning the Idea into Policy.....	7
4. Timeline	10

Abbreviations and Acronyms

AAPI	: Akademi Ilmu Pengetahuan Indonesia (Indonesian Academy of Sciences)
Bappenas	: Badan Perencanaan Pembangunan Nasional (Ministry of National Planning)
DIPI	: Dana Ilmu Pengetahuan Indonesia (Indonesian Science Fund)
LPDP	: Lembaga Pengelola Dana Pendidikan (Indonesian Education Endowment Fund)

Introduction

1



On the morning of 30 March 2016, in a ceremony held at the Ministry of Finance, the first large-scale independent grant-giving research fund in Indonesian history was announced. It was a seminal event. Indonesia is a member of the G20, a group of the world's wealthiest nations, and has the eighth highest gross domestic product in the world. But it spends only a minimal amount of its national resources on research and development—around 0.09 percent. This lack of research spending means that many issues of crucial concern to this developing lower middle-income nation—everything from how to efficiently develop infrastructure systems in an archipelago, to how a nation of 17,000 islands can protect itself from rising ocean levels—are not

sufficiently addressed.

The Indonesian Science Fund (Dana Ilmu Pengetahuan Indonesia – DIPI) would increase the total pot of Indonesian research funding. More importantly, it would use an international panel of experts to seek out innovative and inventive multi-year research projects that address key concerns of the Indonesian people. The independent nature of the Fund—grant conditions would not be determined by government bureaucrats—ensure that Indonesian researchers would have the support and resources they need to conduct high-level research without being inundated by government bureaucracy.

The Indonesian researchers at the event, many of them who had rarely had opportunities to pursue their own research

“We want researchers to be introduced to their future-in-laws, explain they are researchers, and have the parents be impressed”

J.W. Saputro

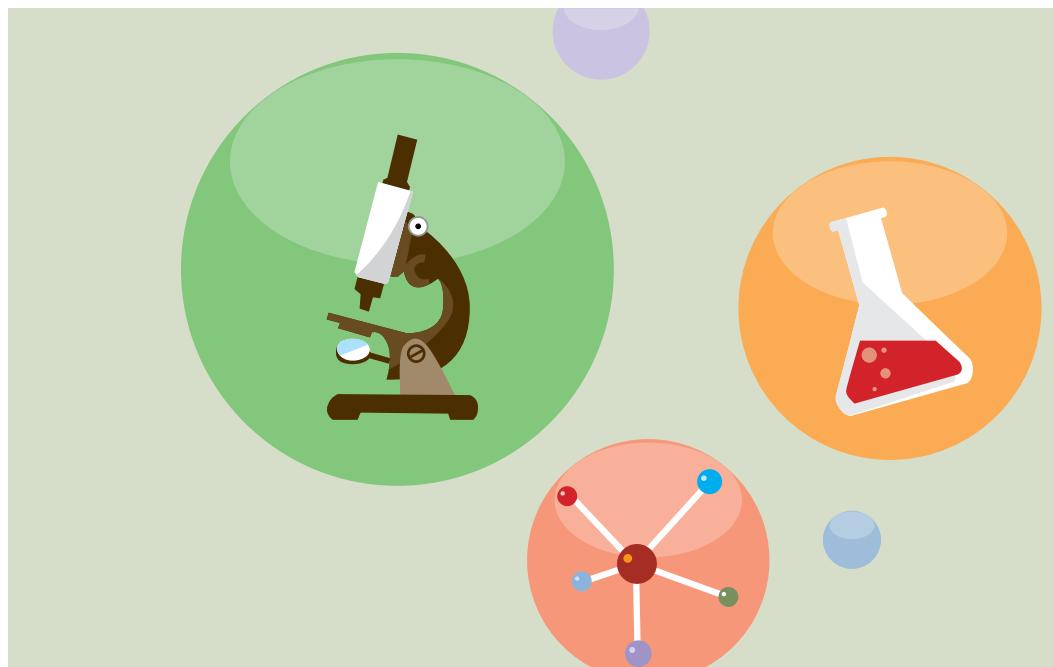
passions due to the lack of funding, were ecstatic. “It’s incredibly exciting,” said Sudirman Nasir, a researcher and lecturer in Public Health at Hasanuddin University in Makassar, Sulawesi. Funding scarcities meant Indonesian researchers like Sudirman were often required to become junior partners to international professors from developed countries with better research funding. But Nasir has the skills to be the principal investigator on his own research projects. “We want to be leading our own project, pursuing our passions,” he said. That was one reason he was so excited about the creation of the Indonesian Science Fund. He intends

to apply for multi-disciplinary grants with an array of partners to examine key questions in Indonesian public health.

At the press conference following the announcement of the Indonesian Science Fund, one of Indonesia’s leading academics, J.W. Saputro, who had been hired some months earlier by the Knowledge Sector Initiative to support the establishment of the Fund, addressed a group of Indonesian reporters. He said the goal of the Indonesian Science Fund was nothing less than to change the way Indonesians viewed research. “We want researchers to be introduced to their future in-laws, explain they are researchers, and have the parents be impressed.”

The Indonesian Science Fund represents the boldest attempt the Indonesian Government has ever made to upgrade its research capacity and develop Indonesia as a research hub. But Indonesia’s byzantine government bureaucracy tends to be a place where good ideas like the Science Fund struggle to flourish. This paper is about the journey that led to the establishment of this independent fund, where grant projects would be evaluated by a team of national and international experts according to the highest research standards.

The Origins of the Idea



Satryo Soemantri Brodjonegoro is an Indonesian professor of mechanical engineering who has been thinking for decades about how Indonesia could develop a culture of research. After receiving a scholarship from the Indonesian Government in the 1980s to pursue a PhD in mechanical engineering at UC Berkeley, Satryo taught for a few years at foreign universities before settling into life as a professor at the Bandung Institute of Technology, one of Indonesia's top universities. He spent many years considering why it was that even elite Indonesian universities did not have the same research culture that he found in the United States and Japan.

There were many reasons. Indonesian professors are paid extremely poorly, which forces them to divert time that should be

dedicated to scholarly pursuits to activities like corporate consulting. "Although they have a degree, they are moonlighting," he said.

When researchers need funding, they have to rely on grants from the Ministry of Research, Technology and Higher Education, but the ministry is mostly interested in funding 'downstream' research that has clear, short-term practical applications. This makes it hard for Indonesians interested in basic research to secure funding for their projects.

The question then, was how to get Indonesian researchers funding while bypassing government bureaucracy. It was this question that motivated Professor Satryo. With funding from the Government of Australia, Professor Satryo collaborated with Michael Greene, an American academic, to write [Creating an Indonesian Science Fund](#).

“Although they (Indonesian Professors) have a degree, they are moonlighting”

Satryo Soemantri Brodjonegoro

The study was published in 2012 by the Indonesian Academy of Sciences (Akademi Ilmu Pengetahuan Indonesia – AIPI) and the World Bank.

The paper proposed a novel way to avoid the limitations placed on researchers who accept government funding: create an independent Indonesian Science Fund to be overseen by the Indonesian Academy of Sciences. As the Indonesian Academy of Sciences is not a government ministry, the Academy would be able to devise a system for considering research proposals and disbursing grant money in whatever way it decided would best promote Indonesian research.

The paper was received well by researchers and employees at international organisations such as the World Bank. However, given Indonesia's bureaucratic climate, the concept of a science fund would prove difficult to translate into reality for various reasons. It was unclear which government ministry would have the power to authorise the Indonesian Academy of Sciences to run the Fund, and where its funding would come from. There was also the concern that established bureaucracies such as the Ministry of Research, Technology and Higher Education would feel that the Fund was treading on their areas of responsibility. Nonetheless, Professor Satryo, who in the meantime had become the Vice President of the Indonesian Academy of Sciences, and the President of the Academy, Professor Sangkot Marzuki, were committed to trying to jumpstart

an independent Indonesian Science Fund. Professor Satryo was able to find strong support for the project outside of government—most prominently from the Knowledge Sector Initiative. This is a joint programme between the governments of Indonesia and Australia which started in May 2013 and seeks to improve the lives of the Indonesian people through better quality public policies that make better use of research, analysis and evidence.

The Knowledge Sector Initiative is not a research programme. Rather, it seeks ways to improve the Indonesian Government's capacity to generate good policy research, and then find ways to improve the Government's ability to understand and make use of this research. As assisting the Government to establish the Indonesian Science Fund would improve the Government's ability to produce and implement cutting-edge research, supporting its creation quickly became a key focus of the programme.

The Knowledge Sector Initiative is managed through a Programme Steering Committee co-chaired by the Indonesian Ministry of National Development Planning (Bappenas) and the Australian Department of Foreign Affairs and Trade. In 2014, a key staff member of Bappenas told the then one-year-old Knowledge Sector Initiative team that if they could succeed in seeing through the establishment of the Indonesian Science Fund, that would be the programme's 'legacy'. Bappenas endorsed the programme support to the Indonesian Academy of Sciences and the establishment of the Indonesian Science Fund. Without this green light, it would not have been possible for the programme to continue its support.

The Knowledge Sector Initiative team that set out to support the Indonesian Academy of Sciences was led by Budiati Prasetyamartati, an Indonesian development specialist, and Fred Carden, a development professional who has built an international reputation for his work in evaluation.

By mid-2014 there had been limited

progress by the Indonesian Academy of Sciences in establishing the Indonesian Science Fund. The Knowledge Sector Initiative team decided it should try to strengthen support for the Academy. The team's engagement with the Indonesian Academy of Sciences began in mid-2014 and turned into a two-year problem-solving mission to help get the Indonesian Science Fund off the ground.

In order to help the Indonesian Academy of Sciences establish the Indonesian Science Fund, the Knowledge Sector Initiative team discussed with the Academy how to make it a more effective organisation. The Indonesian Academy of Sciences had generally played a consultative role for the Indonesian Government, advising on science policy and monitoring government policy related to science. It had very little experience with taking swift action to develop new funding institutions. The puzzle for the Knowledge Sector Initiative team was how to get the Academy to realise its potential for serious action on improving Indonesia's research environment.

A first step that the Knowledge Sector Initiative team recommended was, beginning in June 2015, hiring a management consultant to sit down with the board of the Indonesian Academy of Sciences. The Knowledge Sector Initiative organised and funded a series of meetings continuing well into 2016 designed to make the Academy more effective as a national science advisory board. As a result of these meetings the Indonesian Academy of Sciences started a change management process to improve its ability to coordinate big projects, such as the Indonesian Science Fund, and improved its outreach to ministries and government agencies.

Professors Satryo and Sangkot were leading the Indonesian Academy of Sciences and were committed to a vision of an independent science fund that did not fall under the umbrella of an Indonesian bureaucratic institution. The two senior scientists were also determined that the bulk of the funding for the

Indonesian Science Fund should come from Indonesia. If, as they hoped, the Indonesian Science Fund would help revolutionise how Indonesians view scientific enterprise, it was important that the Indonesian Government buy into the project. Although foreign aid programmes offered support, the Indonesian Academy of Sciences wanted to ensure that the initial funding was primarily Indonesian.

In December 2014, the Indonesian Academy of Sciences successfully defended these principles at the 'soft launch' of the Indonesian Science Fund. It succeeded in negotiating funding from the Ministry of Finance through the Indonesian Education Endowment Fund (Lembaga Pengelola Dana Pendidikan — LPDP).

The soft launch was coordinated by the then Minister of Finance, Bambang P.S. Brodjonegoro, and attended by the American Ambassador and the Minister Counsellor for Development Cooperation of the Australian Embassy.

A second project the Academy was working on ended up playing a key role in establishing the Indonesian Science Fund. In early 2014, the Indonesian Academy of Sciences launched SAINS45, an initiative that produced the Indonesian science and research agenda to 2045 making use of its extensive network of young Indonesian scientists. These scientists were alumni of four Indonesian-American Kavli Frontiers of Science symposia, the Wallace Young Scientists Conference that preceded the Frontiers symposia, and an Indonesian Frontiers of Social Science symposium. Their goal was to set down Indonesia's research agenda for the next 30 years and develop key research inquiries for the nation's scientists.

Following a series of consultations across Indonesia that were the foundation for drafting the SAINS45 agenda, the President of the Indonesian Academy of Sciences, Professor Sangkot, suggested organising a trip for the young researchers to Australia in November 2014 to meet researchers at several research institutions and academies. Professor Sangkot's objective was to put

the SAINS45 agenda to the test with senior Australian researchers. Realising the merit of this proposal, the Knowledge Sector Initiative stepped in with funding.

Helped along by the successful trip to Australia, the consultation edition for SAINS45 was published in May 2015. It was a small, compact book, written using non-academic Bahasa Indonesian accessible to non-scientists, that highlighted 45 important directions of inquiry for the country's scientists to investigate. The book was then translated into English by the Knowledge Sector Initiative to reach foreign researchers and help them

understand Indonesia's research priorities.

Although the Indonesian Science Fund and SAINS45 were initially conceived of as separate initiatives, SAINS45's research goals ended up becoming a central element of the Indonesian Science Fund's schemes. In January 2016 the Indonesian Academy of Sciences decided to use SAINS45's focus areas as the basis for the Indonesian Science Fund, after a delegation from the Indonesian Academy of Sciences and the Fund visited the Royal Society in the UK to learn about research funding systems and areas of scientific excellence.

Turning the Idea into Policy



By mid 2015, the Knowledge Sector Initiative team was beginning to feel confident that, thanks to the science goals clearly set out in SAINS45, the Indonesian Academy of Sciences' leadership and the Academy's change management activities, the Indonesian Science Fund was ready to launch. But bureaucracies operate on their own schedule. The Indonesian Academy of Sciences still had not taken a formal vote on whether to authorise the Fund. Key government ministers had not provided their sign off yet, and the President's office had had no opportunity to officially consider the creation of the Fund. The question for the team was how to get this idea moving through the many crucial government bureaucracies and become a reality.

In a sign of how complex the situation was, in May 2015 the Indonesian Academy of Sciences cooperated with the Indonesian Ministry of Finance and Bappenas to hold a 'silver jubilee' of the Academy and use that occasion to announce the creation of the Indonesian Science Fund. This was widely reported in the Indonesian news media and raised the public's expectations. These expectations needed to be met by policy decisions.

The Knowledge Sector Initiative team had initially hoped that key figures in the Indonesian Academy of Sciences would use their connections to swiftly push the Fund through the remaining hoops of Indonesia's bureaucracy. But Professor Sangkot, the President of the Indonesian Academy of Sciences, understood just how dense the obstacle course of Indonesian bureaucracy is, and suggested that the best way to get the Fund off the ground would be to hire someone who could dedicate themselves full-time to seeing the project through. The candidate needed to have a science background and sufficient credentials to be respected as an advocate for the Fund, but also needed to know his or her way around Indonesia's many government bureaucracies.

One of the names most frequently mentioned was J.W. Saputro. A scientist devoted to promoting Indonesian scientific enterprise, he had just managed to raise funds to send two teams of Indonesian high school students to study at the International Space Station in the United States when the Knowledge Sector Initiative approached him. Saputro was introduced to Professor Sangkot and confirmed he was interested in the assignment and in seeing the Indonesian Science Fund through. Professor Sangkot appointed him as the National Indonesian Science Fund Coordinator.

When Saputro joined the project in August 2015, the Indonesian Academy of Sciences had just succeeded in securing its initial first five years of funding from the LPDP. The Memorandum of Understanding between LPDP and the Indonesian Academy of Sciences was signed on 7 August 2015 and witnessed by the Minister of Finance. This meant that Professors Sangkot and Satryo's vision of an independent fund backed by the Indonesian Government was one step closer to becoming a reality.

An important next step was persuading the Indonesian Academy of Sciences' general assembly to vote to amend its bylaws and

constitution to allow the it to host and oversee the Indonesian Science Fund. In mid-October, after weeks of meetings, including trips outside of Jakarta and to the President's office, the Indonesian Science Fund was presented to the general assembly of the Academy. The assembly voted to authorise the Academy to oversee the Indonesian Science Fund. This critical decision came a few days before President Jokowi's first state visit to the United States when he announced, on 27 October, the Indonesian Science Fund's establishment as part of his commitment to US-Indonesian relations.

Although President Jokowi had already indicated his support for the Fund, he had yet to legally authorise it. In order for him to legally authorise the Fund, more ministerial signatures were needed. This led to a months-long effort where Saputro acted as an intermediary. He met with busy ministers in the Ministry of Finance, the Ministry of Research, Technology and Higher Education and the Ministry of State Apparatus and Bureaucratic Reform to have them sign documents that would authorise the creation of the Indonesian Science Fund. On 29 February 2016, President Jokowi signed a Presidential Decree authorising the Indonesian Science Fund, the first of its kind in Indonesia. The idea of the Fund, which Professor Satryo had had since the 1980s, was about to become a reality.

On March 30 2016, in the vast banquet hall of the Ministry of Finance, with high-level diplomats and aid officials from the embassies of the United States, Australia and the United Kingdom, the Indonesian Academy of Sciences announced the creation of the Indonesian Science Fund, together with its first Executive Director and the 13 members of its Science Board.

The establishment of the Indonesian Science Fund marks a milestone in the evolution of science and research in Indonesia. The first call for research proposals was launched in April 2016 with a thematic focus

on life, health and nutrition and on identity, diversity and culture. The Fund has received 467 proposals, and nine multi-year research projects have been selected and are awaiting the release of the funding.

The Indonesian Science Fund exists thanks to the Indonesian Academy of Sciences'

partnership with its counterpart organisations in the United States, the Netherlands, the United Kingdom and Australia. Coupled with commitments from the Indonesian and foreign governments to maintain the Fund, the future for Indonesian research looks substantially brighter.

4 Timeline

5 May 2014



Meeting between Knowledge Sector Initiative (KSI) programme, Australia's Department of Foreign Affairs and Trade (DFAT), and USAID to talk about the establishment of an Indonesian Science Fund (ISF) and the possible role of the Indonesian Academy of Sciences. USAID expresses keen interest to support AIPI towards the goal of establishing the ISF. The hope is to see ISF up and running in 5 years.

20 August 2014



Meeting between KSI and AIPI to discuss, among other things, the ISF. The idea emerged from Prof Dr Sangkot Marzuki (President of AIPI) and Pak Budhi Suyitno that the ISF should be under the responsibility of AIPI so that it can be governed through the law that established AIPI. This law gives AIPI some independence in terms of activities and funding. There is also agreement to make sure that this arrangement would not conflict with other pieces of legislation.

24 August 2015



Dr J.W. Saputro is contracted by KSI as ISF National Coordinator.

7 August 2015



Signing of the Memorandum of Understanding between AIPI and LPDP (Lembaga Pengelola Dana Pendidikan, Indonesia Endowment for Education) to support funding of basic research for five years.

May - August 2015



KSI develops a Scope of Work and search for candidates for the role of ISF National Coordinator.

September 2015



A legal firm/team is sought to provide legal and institutional expert support to assist the National Coordinator in the establishment and operationalization of ISF.

22 - 25 September 2015



USAID provides funding and support to a team from AIPI and the ISF National Coordinator to travel to the United States and visit the NAS and NSF in Washington DC. NAS offers technical support to AIPI and ISF on the development of a competitive granting schemes.

1 October 2014



Meeting between AIPI, DFAT, USAID to continue discussing ISF. There has been preliminary work during the previous two years on the establishment of ISF funded by DFAT via the World Bank. The consensus is to start small and simple in establishing the ISF with a unit within AIPI. KSI tasked to provide institutional strengthening support to AIPI.

18 December 2014



Soft launch of ISF at the AIPI office. Minister of Finance Bambang P. S. Brodjonegoro, Prof Dr Sangkot Marzuki (President of AIPI), Prof Satryo S. Brodjonegoro (Vice President of AIPI), Jean-Bernard Carrasco (Minister Counselor, Development Cooperation, Australian Department of Foreign Affairs and Trade), Dr. Bruce Alberts (U.S. Science Envoy to Indonesia 2010-2012), Robert O. Blake, Jr. (US Ambassador for Indonesia) attend the launch.

27 May 2015



Official Launching of ISF during AIPI's silver jubilee celebration by the Minister of Finance of Indonesia, Bambang P. S. Brodjonegoro and the State Minister of National Development Planning, Andrinof Chaniago. AIPI's President Prof Sangkot Marzuki requests KSI support to hire a 'full time' National Coordinator to help with the development of ISF.

February - April 2015



AIPI and KSI try to get legal advisors to provide technical input on the regulations required to establish and manage the ISF but fail. The reason is that the legal advisor provided legal suggestions and ideas that are not considered acceptable by Prof Dr Sangkot Marzuki (President of AIPI), Prof Satryo S. Brodjonegoro (Vice President of AIPI).

September - October 2015



The ISF National Coordinator and the legal team complete the legal and institutional analysis for ISF and draft AIPI's revision of regulations and bylaws (AD/ART) to be presented before the General Assembly of AIPI on October 13, 2015. The ISF National Coordinator conducts intensive lobbying with the key members of the General Assembly and relevant parties at Kantor Staff Presiden (KSP).

13 October 2015



AIPI General Assembly approves the establishment of the ISF. The meeting is attended by 2/3 of AIPI members to approve changes of AIPI's constitution and bylaws to include the establishment of a new autonomous agency to manage ISF, ALMI (or Indonesian Young Academy of Sciences).

Jon Emont

Jon Emont is a freelance journalist based in South East Asia, whose work appears in The New York Times, Washington Post, The Atlantic, and elsewhere. He first came to Indonesia on a Fulbright Research Fellowship in 2014.

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The Knowledge Sector Initiative (KSI) is a joint program between the governments of Indonesia and Australia that seeks to improve the lives of the Indonesian people through better quality public policies that make better use of research, analysis and evidence.
KSI is a consortium led by RTI International in partnership with Australian National University (ANU), Nossal Institute for Global Health, and Overseas Development Institute (ODI).



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