

Creating an Indonesian Science Fund

The State of Science and Engineering in Indonesia

By population, Indonesia, with its over 230 million people, is the fourth-largest country in the world. Illiteracy rates are very low, and the country has several good universities and research institutes.

However...



64th

For the years 1996-2010, Indonesia is in 64th place in the world in numbers of papers published in peer-reviewed journals.

74%

Moreover, about 74% of Indonesian scientific projects are international collaborations, so that the credit is shared with other countries.



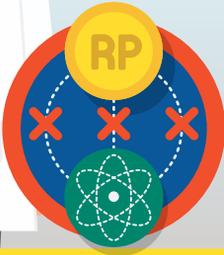
Indonesia does not fall within the group of countries of its size and resources in the measures of national productivity for science and technology.

How Could This Happen?

Some of the reason are:



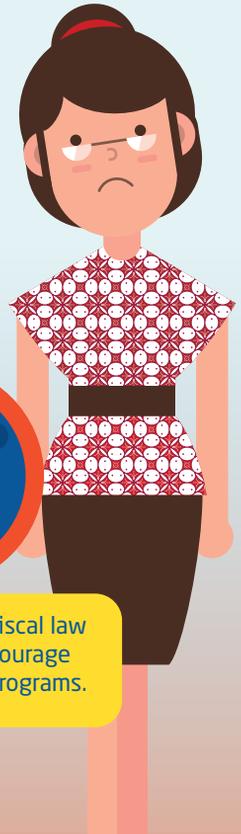
A low national investment in research and development. Indonesia's gross R&D investment is less than 0.1 percent of GDP.



Indonesia does not have the financial infrastructure in place to support cutting-edge science and technology. Maintain a state budgeting system that would allow the flexibility needed for scientific research.



Current Indonesian fiscal law and regulation discourage multiyear research programs.



Solution

These problems can be addressed together,
as a system, by creating:

Indonesian Science Fund



Indonesian Science Fund, on a competitive basis, would directly supply scientists and engineers with funds for world-class research.



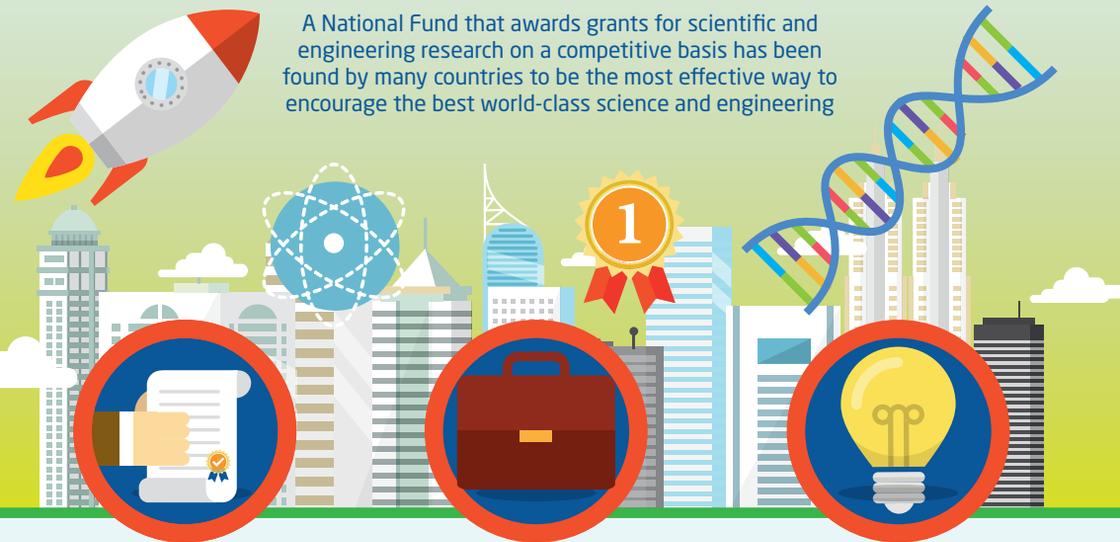
This agency could be housed under an existing independent government-funded institution, while remaining separate and autonomous.



Have capacity to raise other funds from private and international sources.

Where Does an Indonesian Science Fund Fit into This Picture?

A National Fund that awards grants for scientific and engineering research on a competitive basis has been found by many countries to be the most effective way to encourage the best world-class science and engineering



Encourage researchers to submit their best ideas in investigator-initiated research proposals, in addition to the more prescriptive, results-oriented projects required by mission-driven agencies.

Successful new ideas will lead to new companies and products if training, support, and facilities are made available to entrepreneurs whose ideas go beyond publication.

A competitive funding resource based on excellence, originality, and capability would provide incentives and rewards that furthered these goals.

Funding Instruments

1 Principal Investigator Research Grants



Will serve as the principal funding instrument for researchers. They will be awarded to the host institution for the exclusive use of the principal investigator and may include equipment acquisition, training, publication costs, and overhead.

2 Travel Grants



Would be awarded to individual investigators for participation in a conference, a visit to another laboratory for a short period, either abroad or within Indonesia, or a visit of a foreign scientist to a laboratory in Indonesia, in order to stay abreast of cutting-edge developments.

3 Student Fellowships



Would assist students who are working toward advanced degrees in a science or engineering field in an Indonesian institution

4 Industrial Cooperative Fellowships



Would enable students to work within a private company or LPNK on a project related to the students' interests

5 Cooperative Research Awards



Would support joint research by industrial or LPNK scientists and university scientists.

6 Entrepreneurial Support Grants



Would be awarded to universities to develop programs to assist students, faculty, and others to market and commercialize original inventions, products, or other commercializable intellectual property

7 Grants for Educational Research



May complement principal investigator research grants on educational topics, and enable new methods, curricula, or syllabi to be tested in schools

The different objectives of the Indonesian Science Fund require different funding instruments. Each will be directed toward achieving results related to the specific objective, but any grant or award to an institution can include more than one instruments

Recommendations

An Indonesian Science Fund (ISF) should be established under the auspices of the Indonesian Academy of Sciences (AIPI).

8 Divisions

There will be 8 divisions, such as physics, chemistry, biology, engineering, agriculture, medicine, energy and environment, and social science and education.

Research Budget

The research budget proposed is 360 billion rupiah for 250 new three-year grants, per year, averaging 1.5 billion rupiah.

20%

For the cost of administration and review of proposals, the rate of 20 per cent, common to similar grantee agencies, is used.

Annual Budget

The total annual budget for research and administration is 414 billion rupiah, or U.S. \$44 million.

Information and data used on this infographic are based on
Creating An Indonesia Science Fund report,
Collaboration between AIPI, World Bank and Australian Aid.



The Indonesian Academy of Sciences (AIPI) was established in 1990 under the Republic of Indonesia Law No. 8/1990 on the Indonesian Academy of Sciences. The Academy was created as an independent body to provide opinions, suggestions, and advice to the Government and public on the acquisition, development and application of science and technology. It is organized into five commissions dealing with Basic Sciences, Medical Sciences, Engineering Sciences, Social Sciences, and Culture. It seeks to promote science through scientific conferences and policy discussion forums, publications, furthering national and international relations, and other activities. Prof. Sangkot Marzuki is president of the Indonesian Academy of Sciences.



Kementerian PPN/
Bappenas



Australian Government

Department of Foreign Affairs and Trade

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.



Knowledge Sector Initiative

www.aipi.or.id

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