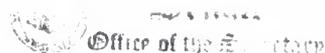


NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )



\*22 AUG -8 P 3 :10

**SENATE**

S. No. 1109

RECEIVED BY:

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**Introduced by Senator Jinggoy Ejercito Estrada**

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**AN ACT**  
**ADVANCING SCIENCE, TECHNOLOGY AND INNOVATION THROUGH A**  
**HARMONIZED NATIONAL RESEARCH AND DEVELOPMENT AGENDA AND**  
**MANDATORY ADOPTION OF PUBLICLY FUNDED AND GENERATED**  
**TECHNOLOGIES IN ALL GOVERNMENT ENTITIES, THEREBY ESTABLISHING**  
**THE SCIENCE FOR CHANGE PROGRAM (S4CP)**

**EXPLANATORY NOTE**

Article II Section 17 of the Constitution provides, "The State shall give priority to education, science and technology, arts, culture, and sports to foster patriotism and nationalism, accelerate social progress, and promote total human liberation and development."

Article XIV Section 10 also states, "Science and technology are essential for national development and progress. The State shall give priority to research and development, invention, innovation, and their utilization; and to science and technology education, training, and services. It shall support indigenous, appropriate, and self-reliant scientific and technological capabilities, and their application to the country's productive systems and national life."

With the onset of the New Normal, there is renewed attention to the sciences. We relied on the established methods and expertise of scientists on how to navigate the unknown territory created by the novel virus and how to immediately recover from its ill effects. People adapted new ways of doing things with the help of

emerging technologies and innovation. There was a sudden realization of how science, technology, and innovation (STI) sectors were overlooked, if not neglected, over the years.

In the updated Philippine Development Plan, a new chapter – Chapter 14: Vigorously Advancing STI – was introduced, as it recognized “the need to strengthen the country’s weak STI ecosystem.” The same also proposed the passage of Science for Change (S4C) Act with the aim of increasing investments in STI-based start-ups, enterprises, and spin-offs, and “advancing the proliferation of demand-driven innovation activities that will respond to the demand of the users of technologies.”<sup>1</sup>

This bill seeks to harness STI as an engine for economic recovery post-pandemic and a driving force for inclusive and sustainable national development. It intends to institute a Harmonized National Research and Development Agenda (HNRDA) and expand the existing programs of the Department of Science and Technology (DOST) that are targeted to respond to the pressing concerns of the country, like food security, disaster risk reduction, enhanced health care service delivery.

This legislation is also proposing an accelerated research and development program under four major strategies:

1. Niche Centers in the Regions for R&D (NICER) shall be implemented to address the discrepancy in access to R&D funding among the regions.
2. R&D Leadership Program (RDLead) shall be implemented to help develop and strengthen the research capabilities of the academe, research and development institutions (RDIs), and other government line agencies.
3. Collaborative R&D to Leverage the Economy (CRADLE) – Through the program, the academe and/or RDI, in partnership with a Filipino company, shall undertake research and development to improve the

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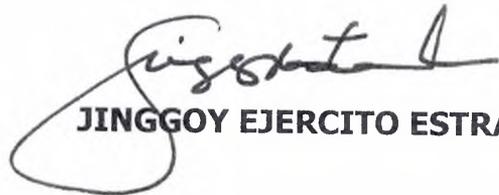
<sup>1</sup> Updated Philippine Development Plan 2017-2022. <https://pdp.neda.gov.ph/wp-content/uploads/2021/02/Pre-publication-copy-Updated-PDP-2017-2022.pdf>

company's products, processes, and services to become more competitive in their respective industries.

4. Business Innovation through S&T (BIST) shall be implemented to provide financial assistance to Filipino private companies for the acquisition of strategic and relevant technologies so they can undertake their R&D.

This measure was already approved on Third and Final Reading by the House of Representatives during the Eighteenth Congress.

The immediate passage of this legislation is earnestly sought.



**JINGGOY EJERCITO ESTRADA**

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
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Office of the Secretary

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**AN ACT  
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MANDATORY ADOPTION OF PUBLICLY FUNDED AND GENERATED  
TECHNOLOGIES IN ALL GOVERNMENT ENTITIES, THEREBY ESTABLISHING  
THE SCIENCE FOR CHANGE PROGRAM (S4CP)**

*Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:*

1 Section 1. *Short Title.* – This Act shall be known as the "Science for Change  
2 Program (S4CP) Act of 2022."

3 Sec. 2. *Declaration of Policy.* – The State shall give priority to science,  
4 technology and innovation to foster patriotism and nationalism, accelerate social  
5 progress, and promote total human liberation and development. It recognizes that  
6 science and technology are essential for national development and progress. Thus,  
7 the State shall give priority to research and development, invention, innovation, and  
8 their utilization. It shall likewise give priority to science and technology education,  
9 training, and services. It shall support indigenous, appropriate, and self-reliant  
10 scientific and technological capabilities, and their application to the country's  
11 productive systems and national life.

12 Sec. 3. *Objectives.* – The objectives of this Act are as follows:

- 13 a) To achieve a higher standard and more productive outputs of science,  
14 technology, and innovation (STI) to contribute to the sustainable and  
15 inclusive development of the economy and society and to the

1 improvement of the welfare of the nation and its citizens through  
2 prescribing the basic policy requirements for the promotion of STI and  
3 comprehensively and systematically promoting policies for the  
4 advancement of STI; and,

- 5 b) Through research and development, to come up with new products,  
6 processes and technologies, solve pressing national problems, increase  
7 productivity, enhance efficiency, improve capability in new and emerging  
8 technologies, promote the general welfare of the people and attain a  
9 globally competitive knowledge economy.

10 Sec. 4. *Definition of Terms.* – As used in this Act, the following terms shall  
11 mean:

- 12 a) *Harmonized National Research and Development Agenda (HNRDA)* – an  
13 outcome-based agenda where all research and development (R&D)  
14 programs and projects to be funded by the government are envisioned  
15 to contribute to the attainment of the majority of government’s key  
16 result areas, particularly responding to poverty reduction and  
17 empowerment of the poor and vulnerable; rapid, inclusive, and  
18 sustained economic growth; and integrity of the environment and  
19 climate change adaptation and mitigation;
- 20 b) *High-tech Equipment* – any equipment using the most advanced and  
21 developed machines and methods.
- 22 c) *National Innovation Council (NIC)* – a policy advisory body, established  
23 by virtue of the Philippine Innovation Act, mandated to formulate,  
24 develop, implement and monitor the country’s innovation goals,  
25 priorities, and long-term national strategy.
- 26 d) *Publicly-funded Technology* – any technology the development or  
27 generation of which was funded, in part or in full, using government  
28 money or resources;
- 29 e) *Research and Development* – any systematic and creative work  
30 undertaken in the physical, natural, mathematical, and applied sciences  
31 by using methods in order to increase the stock of knowledge in these  
32 fields to devise new applications;

- 1 f) *Science, Technology, and Innovation (STI)* – Science is the systematic  
2 way of acquiring knowledge through observation and experimentation  
3 whereas technology is the practical application of science. Innovation is  
4 the creation of new ideas that results to the development of new or  
5 improved products, processes, or services which are then spread or  
6 transferred across the market;
- 7 g) *Technology licensing* – a mode of technology transfer whereby a licensor  
8 (technology generator or owner) authorizes a licensee to use the  
9 technology under certain agreed terms and conditions.

10 Sec. 5. *The Science for Change Program (S4CP) and Utilization Policy*  
11 *Framework.* – The formulation of the S4CP is anchored on the Harmonized National  
12 R&D Agenda that is regularly updated based on the needs of the time.

- 13 a) In order to achieve the objectives of this Act, the following S&T  
14 programs of DOST shall be expanded:
- 15 i. Health Self Sufficiency and Responsiveness to Public Health  
16 Emergencies
  - 17 ii. Renewable Energy (RE) Systems & Bioenergy Technologies
  - 18 iii. Functional Materials for Alternative Energy Sources and Energy  
19 Conversion and Storage
  - 20 iv. Nuclear Science for Energy, Health, Agriculture and Industry
  - 21 v. Biotechnology, Nanotechnology, and Genomics
  - 22 vi. Climate and Environment Sciences
  - 23 vii. Nutrition and Food Security and Safety
  - 24 viii. Agriculture, Aquaculture and Fisheries Productivity
  - 25 ix. Natural Resource Management and Sustainable Development
  - 26 x. Transport Solutions
  - 27 xi. Industrial/Manufacturing/Mining Productivity
  - 28 xii. Disaster Risk Reduction and Climate Change Adaptation
  - 29 xiii. S&T Services for the Production Sector
  - 30 xiv. Metrology, Calibration and Standards
  - 31 xv. Technology Transfer and/or Commercialization
  - 32 xvi. Human Resource Development for STI

1 xvii. Nurturing a Culture of Science

2 b) The following new programs shall also be included in the Science for  
3 Change Program:

4 i. Defense and Security R&D, modernization of law enforcement and  
5 military capabilities, air and maritime border control

6 ii. Space Science and Technology

7 iii. Information and Communications Technology (ICT) Development,  
8 Electronics, Artificial Intelligence, Data Protection and Cybersecurity

9 iv. Strengthening of R&D and S&T Services in the Regions through  
10 Infrastructure and Human Resource Development

11 v. S&T for the Creative Arts and Cultural sectors, Tourism, and Services  
12 Industries

13 vi. New and Emerging Technologies

14 Sec. 6. *Major Strategies of the Science for Change Program.* – There shall be  
15 Accelerated R&D Program for Capacity Building of Research and Development  
16 Institutions and Industrial Competitiveness.

17 a) *Niche Centers in the Regions for R&D (NICER).* – The NICER Program  
18 shall be implemented to address the discrepancy in access to R&D  
19 funding among the regions. Through the program, qualified Higher  
20 Education Institutions (HEIs) in the regions shall be provided with grants  
21 so they can undertake quality research directed at promoting regional  
22 development with their existing capabilities and resources. A proposed  
23 NICER should be unique, a collaborative project between HEIs, and must  
24 be duly endorsed by the Regional Development Council (RDC) to ensure  
25 its socio-economic impact in the region.

26 b) *R&D Leadership Program (RDLead).* – The RDLead program shall be  
27 implemented to help develop and strengthen further the research  
28 capabilities of the academe, research and development institutions  
29 (RDIs), and other government line agencies nationwide. To this end,  
30 RDLeaders who are local S&T experts with strong leadership and  
31 innovative policy proficiencies shall be engaged to train, and direct and  
32 support their R&D goals. Depending on the R&D needs of the academe,

1 RDI, and line agencies, an RDLeader shall be engaged through  
2 application, screening, and evaluation by the National Research Council  
3 of the Philippines (NRCP). NRCP shall be the implementing agency of the  
4 RDLead Program.

5 c) *Collaborative R&D to Leverage the Economy (CRADLE) for RDIs and*  
6 *Industry.* – The CRADLE Program shall be implemented to enable  
7 technological advancement and innovation of local companies and to  
8 support the growth of the Philippine Innovation ecosystem. Through the  
9 program, the academe and/or RDI, in partnership with a Filipino  
10 company, shall undertake research and development to improve the  
11 company's products, processes, and services to become more  
12 competitive in their respective industries. Beneficiary-companies under  
13 this program must provide at least 20% counterpart funding and commit  
14 to adopt the technology that will be developed. This way, research  
15 outputs from the academe are directly translated commercially to the  
16 market.

17 d) *Business Innovation through S&T (BIST) for Industry.* – The BIST  
18 Program shall be implemented to provide financial assistance to Filipino  
19 private companies for the acquisition of strategic and relevant  
20 technologies so they can undertake their R&D. The financial assistance,  
21 which may only be used to purchase high-tech equipment or to secure  
22 technology licensing and/or patent rights, shall be refunded to DOST at  
23 zero percent interest.

24 *Sec. 7. Formulation and Submission of the Science for Change Program*  
25 *(S4CP) Plan.* – The DOST shall formulate the five-year Science for Change Program  
26 plan in coordination with other relevant government agencies, including State  
27 Universities and Colleges and representatives from the private sector undertaking  
28 R&D. The Secretary of DOST shall submit to the President the Science for Change  
29 Program plan for approval within ninety (90) days from the effectivity of this Act.

30 A successor S4CP plan shall be formulated and submitted for approval by the  
31 President at least three (3) months prior to the expiration of the existing S4CP plan.

1           Sec. 8. *S4C Program Management Office (PMO)*. – The Program Management  
2 Office for the Science for Change Program (PMO-S4CP) shall be created under the  
3 DOST- Office of the Undersecretary for R&D. The PMO shall ensure the effective and  
4 efficient implementation of the Science for Change Programs. It shall perform  
5 coordinating and Secretariat functions required in the accomplishment of the  
6 program objectives, as well as promote the various programs. The initial staffing  
7 structure and complement of the PMO shall be submitted by the DOST to the DBM.

8           Sec. 9. *The Harmonized National R&D Agenda*. – The DOST, in consultation  
9 with government research institutions and other agencies concerned, shall formulate  
10 a Harmonized National Research and Development Agenda (HNRDA) and a program  
11 for technology adoption for the government. The proposed agenda shall be  
12 submitted for approval by the National Innovation Council. All publicly funded R&D  
13 projects, Twenty million pesos (P20,000,000.00) and above, shall be certified by the  
14 DOST as to alignment with the HNRDA.

15           The HRNDA shall be directly related to the priorities under the Philippine  
16 Development Plan.

17           The DOST shall submit to the DBM, the Speaker of the House of  
18 Representatives, and the President of the Senate of the Philippines, either in printed  
19 form or by electronic document, a copy of the approved HNRDA. The Secretary of  
20 Science and Technology and the Agency's web administrator or his/her equivalent  
21 shall be responsible for ensuring that the approved HNRDA is posted on the  
22 Agency's website.

23           Sec. 10. *Mandatory Adoption of Publicly Funded Technologies*. – Mandatory  
24 adoption of publicly funded and generated technologies whenever feasible and  
25 practicable shall strictly be implemented by all government entities and  
26 instrumentalities. All national government agencies (NGAs), government-owned-and-  
27 controlled corporations (GOCCs), state universities and colleges (SUCs), and local  
28 government units (LGUs) performing science and technology development projects  
29 shall adopt publicly-funded technologies.

30           Sec. 11. *Science for Change Program Fund (S4CPF)*. – There is hereby  
31 created the Science for Change Program Fund to be used exclusively for the  
32 implementation of the projects and activities under the S4CP. The S4CPF shall be

1 administered by the DOST in accordance with existing government budgeting,  
2 accounting and auditing rules and regulations. The S4CPF shall be sourced from the  
3 following:

- 4 a) The initial amount of Ten billion pesos (P10,000,000,000.00) to be taken  
5 from the General Appropriations Act (GAA) and other funds/savings from  
6 GAA of the preceding year, in case the GAA is approved before this law  
7 is enacted. The yearly budget for Science for Change Program shall  
8 double yearly until it reaches 2% of the Government Appropriations Act  
9 (GAA) budget. Such amount shall be released to the DOST after the  
10 effectivity of this Act;
- 11 b) Royalty income produced under the S4CP; and
- 12 c) Loans, contributions, grants, bequests, gifts, and donations, whether  
13 from local or foreign sources: *Provided*, That acceptance of grants,  
14 bequests, contributions and donations from foreign governments shall  
15 be subject to the approval of the President, upon the recommendation  
16 of the Secretary of the DOST and Secretary of the Department of  
17 Foreign Affairs (DFA). The Secretary of DOST, with the approval of the  
18 NEDA and, subsequently, the Department of Finance (DOF) is hereby  
19 granted the authority to enter into loan agreements with foreign  
20 financial institutions.

21 Sec. 12. *Appropriations.* – The sum of Ten billion pesos  
22 (PhP10,000,000,000.00) is hereby appropriated as initial operating fund for the  
23 projects and activities under the S4CP. Thereafter, the amount needed for the  
24 operation of the SCP shall be included in the General Appropriations Act.

25 Sec. 13. *Annual Report.* – The DOST shall annually submit a report on the  
26 implementation of the S4CP to the Office of the President and to the Committee on  
27 Science and Technology of the House of Representatives and the Senate of the  
28 Philippines.

29 Sec. 14. *Separability Clause.* – If any provision of this Act is declared invalid  
30 or unconstitutional, the remaining provision not affected thereby shall continue to be  
31 in full force and effect.

1           Sec. 15. *Repealing Clause.* – All laws, decrees, orders or regulations or part  
2 thereof inconsistent with this Act are hereby repealed or modified accordingly.

3           Sec. 16. *Effectivity.* – This Act shall take effect fifteen (15) days following the  
4 completion of its publication in the *Official Gazette* or in a national newspaper of  
5 general circulation.

*Approved,*