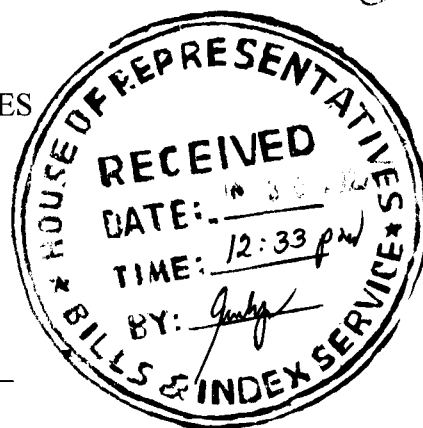


Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

Nineteenth Congress
First Regular Session

HOUSE BILL NO. 50



Introduced by **Representative JOEY SARTE SALCEDA**

**AN ACT
ESTABLISHING THE SCIENCE FOR CHANGE PROGRAM AND
APPROPRIATING FUNDS THEREFOR**

EXPLANATORY NOTE

In the last six (6) years, the Philippines' scientific and technological indicators, based on UNESCO benchmark, has improved significantly. According to UNESCO, for a developing country, there should be 380 Researchers, Scientists and Engineers per million population (RSEs) and the percentage of GDP expenditure on R&D (GERD) should be 1%. The number of RSEs in the country has increased from 180 in 2009 to 270 in 2013, while the budget of the Department of Science and Technology (DOST) has increased from P5.7B in 2009 to P20.8B in 2017, with Research and Development (R&D) budget allocation increasing from P1B in 2009 to P5.8B in 2017.

For the DOST Human Resource Development (HRD), the Philippine Science High School (PSHS) and the Science Education Institute (SEI) have significantly contributed to the RSEs. The PSHS increased the number of regional campuses from 11 in 2010 to 16 in 2016, therefore providing one PSHS campus per region. The number of students in PSHS will increase from 1,840 in 2009 to 8,083 in 2017, and 9,500 in 2021. The Science Education Institute (SEI) increase the freshman intake of scholars from 1,250 in 2010 to 5,590 in 2015, and has crafted the Grand Plan for S&T Human Resource Development such that the Philippines will achieve 380 RSEs by 2022.

The Department of Science and Technology (DOST) endeavors to significantly accelerate Science, Technology and Innovation (STI) in the country through massive increase in investment on S&T HRD and R&D through the Science for Change Program (SCP).

SCP consists of 4 components: Program Expansion 7 areas, New Programs in 6 areas, the Grand Plan for S&T Human Resource Development, and the Accelerated R&D Program for Capacity Building of Research and Development Institutions and Industrial Competitiveness.

The total R&D Budget for 2017 is at 5.8 billion pesos. The proposed and estimated R&D budget for the 5-year period under the S4C Bill is as follows (R&D budget doubles yearly):

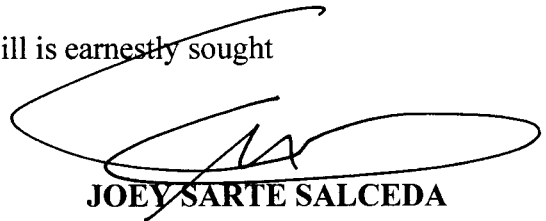
Year	Budget
2017	21bn
2018	42bn
2019	84bn
2020	168bn
2021	336bn
2022	672bn

The program has a big budget capturing all R&D efforts for the above stated 5-year period, as follows:

1. Niche Centers in the Regions for R&D (NICER) - total of 3.2 billion pesos
2. R&D Leadership Program (RDLead) - total of 6 billion pesos
3. Collaborative R&D to Leverage PH Economy (CRADLE) for RDIs and Industry - total of 3.2 billion pesos
4. Business Innovation through S&T (BIST) for Industry - 14.25 billion pesos (25 industry sectors, at 50 to 100M per sector X 75)
5. S&T HRD (STRAND, STAR, SRCUR)

The passage of this important piece of legislation will further boost innovation R&D and as well as significantly global competitiveness of Philippine products and services.

In view of the foregoing, the passage of this bill is earnestly sought



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

SECTION 1. *Short Title.* – This Act shall be known as the “Science for Change Program”.

SEC. 2. *Declaration of Policy.* – Article XIV of the Philippine Constitution recognizes that “science and technology are essential for national development and progress.” It declares that “the State shall give priority to research and development, invention, innovation, and their utilization; and to science and technology education, training, and services”. Likewise, the State “shall support indigenous, appropriate, and self-reliant scientific and technological capabilities, and their application to the country’s productive systems and national life”.

Towards these ends and in pursuit of excellence in the field of science, technology and innovation (STI), the State needs to accelerate the development of STI in the country through a massive increase in investment, expansion of existing STI initiatives, creation of new programs, development of human resources in STI, and capacity building of research and development institutions.

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

- a) To achieve a higher standard of science, technology and innovation (STI) and contribute to the development of the economy and society;
- b) To improve the welfare of the nation by prescribing comprehensive and systematic policies for the promotion of STI; and
- c) To encourage innovation and creativity among Filipinos, and come up with products, technologies and solutions to pressing national problems, and gain a competitive edge in the field of research and development.

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

- a) *Harmonized National Research and Development Agenda (HNRDA)* refers to an outcome-based agenda which identifies all the research and development (R&D) programs and projects to be undertaken and funded by the government to support the attainment of the key result areas of the government's development objectives, particularly those that aim to reduce poverty and empower the poor and vulnerable; induce rapid, inclusive, and sustained economic growth; promote the integrity of the environment, and enhance the country's climate change adaptation and mitigation capability.
- b) *High-tech equipment* refers to any equipment using the most advanced and developed machines and methods.
- c) *National Innovation Council (NIC)* refers to the policy advisory body, established by virtue of Republic Act No. 11293, or the Philippine Innovation Act, mandated to formulate, develop, implement and monitor the country's innovation goals, priorities, and long-term national strategy.
- d) *Publicly-funded technology* refers to any technology the development or generation of which was funded, in part or in full, using government money or resources.
- e) *Research and Development (R&D)* refers to any systematic and creative work undertaken in the physical, natural, mathematical, and applied sciences by using methods in order to increase the stock of knowledge in these fields to devise new applications.
- f) *Science*, refers to the systematic way of acquiring knowledge through observation and experimentation.
- g) *Technology* refers to the practical application of science.
- h) *Innovation* refers to the creation of new ideas that results to the development of new or improved products, processes, or services which are then spread or transferred across the market.
- i) *Technology licensing* refers to a mode of technology transfer whereby a licensor such as a technology generator or technology or intellectual property owner, authorizes a licensee to use the technology under certain agreed terms and conditions.

SEC. 5. *Science for Change Program (S4CP) and Utilization Policy Framework.* – The formulation of the S4CP is anchored on the HNRDA which shall be regularly updated based on the needs of the time.

- a) In order to achieve the objectives of this Act, the following science and technology (S&T) programs of the DOST shall be expanded:

- 1) Health Self Sufficiency and Responsiveness to Public Health Emergencies
 - 2) Renewable Energy Systems & Bioenergy Technologies
 - 3) Functional Materials for Alternative Energy Sources and Energy
 - 4) Conversion and Storage
 - 5) Nuclear Science for Energy, Health, Agriculture and Industry
 - 6) Biotechnology, Nanotechnology, and Genomics
 - 7) Climate and Environment Sciences
 - 8) Nutrition and Food Security and Safety
 - 9) Agriculture, Aquaculture and Fisheries Productivity
 - 10) Natural Resource Management and Sustainable Development
 - 11) Transport Solutions
 - 12) Industrial or Manufacturing or Mining Productivity
 - 13) Disaster Risk Reduction and Climate Change Adaptation
 - 14) Science and Technology (Services for the Production Sector
 - 15) Metrology, Calibration and Standards
 - 16) Technology Transfer or Commercialization
 - 17) Human Resource Development for Science Technology and Innovation
 - 18) Nurturing a Culture of Science
- b) The following new programs shall also be included in the Science for Change Program:
- 1) Defense and Security Research and Development
 - 2) Space Science and Technology
 - 3) ICT Development, Electronics and Artificial Intelligence
 - 4) Strengthening of Research & Development and Science & Technology Services in the Regions through Infrastructure and Human Resource Development
 - 5) S&T for the Creative, Tourism, and Services Industry
 - 6) New and Emerging Technologies

SEC. 6. *Major Strategies of the Science for Change Program.* – The S4CP shall focus on the Accelerated R&D Program for Capacity Building of Research and Development Institutions and Industrial Competitiveness which is composed of four (4) programs namely:

- a) **Niche Centers in the Regions for R&D (NICER).** The NICER Program shall be implemented to address the discrepancy in access to R&D funding among the regions. Through the program, qualified higher education institutions (HEIs) in the regions shall be provided with grants so they can undertake quality research directed at promoting regional development with their existing capabilities and resources. A proposed NICER should be a unique and collaborative project between HEIs, and must be duly endorsed by the Regional Development Council (RDC).
- b) **R&D Leadership Program (RDLead).** The RDLead program shall be implemented to help develop and strengthen further the research capabilities of the academe, research and development institutions (RDIs), and other government line agencies nationwide. To this end, RDLeaders who are

local S&T experts with strong leadership and innovative policy proficiencies shall be engaged to train, direct, and support R&D goals. Academic institutions RDIs, and other agencies may engage the services of an RDLeader through a screening and evaluation process to be conducted by the National Research Council of the Philippines (NRCP) based on their respective needs and specifications. The NRCP shall be the implementing agency of the RDLead Program.

- c) **Collaborative R&D to Leverage the Economy (CRADLE) for RDIs and Industry.** The CRADLE Program shall be implemented to promote technological advancement and innovation in local companies and to support the growth of the Philippine innovation ecosystem. Through the program, the academe or RDI in partnership with a Filipino company, shall undertake research and development to improve the company's products, processes, and services to become more competitive in their respective industries. To ensure that research outputs from the academe are commercially utilized by the market, beneficiary-companies under this program must provide at least twenty percent (20%) counterpart funding and commit to adopt the technology that shall be developed by their R & D Partner.
- d) **Business Innovation through S&T (BIST) for Industry.** The BIST Program shall be implemented by the DOST to provide financial assistance to Filipino private companies for the acquisition of strategic and relevant technologies so they can undertake their R&D activities. The financial assistance shall be used solely for the purchase of high tech equipment or to secure technology licensing or patent rights and shall be refunded to the DOST without interest.

SEC. 7. Formulation and Submission of the Science for Change Program (S4CP) Plan. – The DOST shall formulate the five-year S4CP Plan in coordination with other relevant government agencies, including state universities and colleges, and representatives from the private sector undertaking R&D. The Secretary of DOST shall submit to the President, for approval, the Science for Change Program Plan within ninety (90) days from the effectivity of this Act.

A successor S4CPPlan shall be formulated and submitted to the President for approval at least three (3) months prior to the expiration of the existing S4CP Plan.

SEC. 8. S4CP Program Management Office (PMO). – The Project Management Office for the Science for Change Program (PMO-S4CP) shall be created and placed under the supervision of the Office of the Secretary of the DOST. The PMO shall ensure the effective and efficient implementation of the Science for Change Programs. It shall perform coordinating and Secretariat functions and promote the various S4CP programs. The Secretary of the DOST shall formulate the staffing pattern of the PMO in coordination with the Department of Budget and Management and in accordance with rules and regulations of the Civil Service Commission.

SEC. 9. *The Harmonized National R&D Agenda.* – The DOST shall, in consultation with government research institutions and other agencies concerned, formulate a HNRDA and a program for technology adoption for the government in accordance with the priorities of the Philippine Development Plan. The proposed HNRDA shall be submitted to the National Innovation Council for approval. The DOST shall certify that all the publicly funded R&D projects form part of the HNRDA and included in our Harmonized National R&D Agenda under the annual General Appropriations Act.”

The DOST shall submit to the Department of Budget and Management, the Speaker of the House of Representatives, and the President of the Senate of the Philippines, either in printed form or by electronic document, a copy of the approved HNRDA. The Secretary of Science and Technology and the agency’s web administrator or an equivalent officer shall ensure that the approved HNRDA is posted on the agency’s website.

SEC. 10. *Mandatory Adoption of Publicly-Funded Technologies.* – All publicly-funded and generated technologies whenever feasible and practicable shall be utilized by all government entities or instrumentalities. All national government agencies government owned and controlled corporations, state universities and colleges, and local government units conducting science and technology development projects shall adopt publicly-funded technologies.

SEC. 11. *Science for Change Program Fund (S4CPF).* – All donations, contributions, grants, bequests, or gifts, in cash or in kind, for the S4CP shall be placed into a fund to be known as the Science for Change Program Fund: *Provided, That,* acceptance of grants, bequests, contributions, and donations from foreign governments shall be subject to the approval of the President of the Philippines, upon recommendation of the Secretary of the DOST and the Secretary of the Department of Foreign Affairs.

SEC. 12. *Appropriations.* – The initial amount for the implementation of this Act shall be charged against the current year’s appropriations of the DOST. Thereafter, such funds as may be required for the implementation of this Act shall be included in the Annual General Appropriations Act.

SEC. 13. *Annual Report.* – The DOST shall submit an annual report on the implementation of the S4CP to the Office of the President and to the Committee on Science and Technology of the House of Representatives and the Senate.

SEC. 14. *Implementing Rules and Regulations.* – Within One hundred eighty (180) days from the effectivity of this Act, the DOST shall formulate rules and regulations for its effective implementation.

SEC. 15. *Separability Clause.* – If any part or provision of this Act is declared invalid or unconstitutional, the remaining parts or provisions not affected shall remain and in full force and effect.

SEC. 16. *Effectivity.* – This Act shall take effect fifteen (15) days after its publication in the *Official Gazette* or in a newspaper of general circulation.

Approved.