

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City, Metro Manila

TWENTIETH CONGRESS
First Regular Session



HOUSE BILL No. 412

Introduced by Representative **JESUS R. MARQUEZ**

EXPLANATORY NOTE

It is stated in Article II Section 17 of the Constitution that “the State shall give priority to science, technology and innovation to foster patriotism and nationalism, accelerate social progress, and promote total human liberation and development.”

In addition, the United Nations Educational, Scientific and Cultural Organization (UNESCO) recommends that developing countries should have at least one percent (1%) of gross domestic product (GDP) expenditure on research and development to make significant advances in Science, Technology and Innovation (STI) which will result in the acceleration of the country’s progress. On top of that, there should be at least three hundred eighty (380) Researches, Scientists and Engineers per million populations.

UNESCO also states that “creating knowledge and understanding through Science equips us to find solutions to today’s acute economic, social and environmental challenges and to achieving sustainable development and greener societies.” As the country experience the risks and limitations posed by the CoVid-19 pandemic, now more than ever, we should support the Department of Science and Technology as it endeavors to significantly accelerate STI through massive increase in investments on S&T, Human Resource Development (HRD) and Research and Development (R&D).

The Department of Science and Technology (DOST) offers solutions to the country’s perennial and most pressing problems brought by the pandemic as it provides science-based interventions on how to safely get every Filipino’s lives on track and reopen the country’s economy. It also guides us amid the uncertainties by providing opinions from the experts in the science community.

It is with this mindset that the enactment of the Science for Change Program Act or the S4CP Act which aims to massively increase STI investments and permanently put a robust policy-making measure that yields towards the achievement of inclusive and sustainable development through enhanced innovation and creative capacity of the Filipinos is intensely pursued.

The S4CP is consist of four (4) components namely:

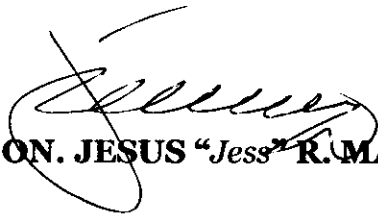
1. Program Expansion in 7 years
2. New Programs in 6 years
3. Grand Plan for S&T Human Resource Development
4. Accelerated R&D Program for the Capacity Building of Research and Development Institutions and Industrial Competitiveness

The significant increase in the budget will capture all the country's R&D efforts spread through a 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 100 million per sector times 75)
5. S&T HRD (STRAND, STAR, SRCUR)

The passage of this significant piece of legislation will further boost R&D and will accelerate the global competitiveness of Philippine products and services.

In this light, the passage of this important measure is earnestly sought.



HON. JESUS "Jess" R. MARQUEZ

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

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 Program
2 Act”.

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

10 To this end and in pursuit of excellence in the field of science, technology and
11 innovation (STI), the State needs to accelerate the development of STI in the country
12 through a massive increase in investment, expansion of existing STI initiatives, creation of
13 new programs, development of human resources in STI, and capacity building of research
14 and development institutions.

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

16 1. To achieve a higher standard of science, technology and innovation (STI) and
17 contribute to the development of the economy and society;

18 2. To improve the welfare of the nation by prescribing comprehensive and systematic
19 policies for the promotion of STI; and

20 3. To encourage innovation and creativity among Filipinos, and come up with new
21 products, technologies and solutions to pressing national problems, and gain competitive
22 edge in the field of research and development.

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

24 a. *Harmonized National Research and Development Agenda*(HNRDA)
25 refers to an outcome-based agenda where all research and development (R&D)
26 programs and projects to be funded by the government are envisioned, to contribute

1 to the attainment of the majority of government’s key result areas, particularly
2 responding to poverty reduction and empowerment of the poor and vulnerable;
3 rapid, inclusive, and sustained economic growth; and integrity of the environment
4 and climate change adaptation and mitigation.

5 b. *High-tech equipment* refers to any equipment using the most advanced
6 and developed machines and methods.

7 c. *National Innovation Council* (NIC) refers to the policy advisory body,
8 established by virtue of the Philippine Innovation Act, mandated to formulate,
9 develop, implement and monitor the country’s innovation goals, priorities, and long-
10 term national strategy.

11 d. *Publicly-funded technology* refers to any technology the development
12 or generation of which was funded, in part or in full, using government money or
13 resources.

14 e. *Research and development (R&D)* refers to any systematic and creative
15 work undertaken in the physical, natural, mathematical, and applied sciences by
16 using methods in order to increase the stock of knowledge in these fields to devise
17 new applications.

18 f. *Science, Technology, and Innovation* (STI): *science* refers to the
19 systematic way of acquiring knowledge through observation and experimentation;
20 *technology* refers to the practical application of science; and *innovation* refers to the
21 creation of new ideas that results to the development of new or improved products,
22 processes, or services which are then spread or transferred across the market.

23 g. *Technology licensing* refers to a mode of technology transfer whereby
24 a licensor (technology generator or owner) authorizes a licensee to use the technology
25 under certain agreed terms and conditions.

26 **SEC. 5. Science for Change Program (S4CP) and Utilization Policy Framework.**

27 The formulation of the S4CP is anchored on the HNRDA which shall be regularly updated
28 based on the needs of the time.

29 a. In order to achieve the objectives of this Act, the following Science and
30 Technology (S&T) programs of the DOST shall be expanded:

31 1. Health Self Sufficiency and Responsiveness to Public Health
32 Emergencies

33 2. Renewable Energy (RE) Systems & Bioenergy Technologies

34 3. Functional Materials for Alternative Energy Sources and
35 Energy Conversion and Storage

36 4. Nuclear Science for Energy, Health, Agriculture and Industry

37 5. Biotechnology, Nanotechnology, and Genomics

38 6. Climate and Environment Sciences

39 7. Nutrition and Food Security and Safety

40 8. Agriculture, Aquaculture and Fisheries Productivity

41 9. Natural Resource Management and Sustainable Development

10. Transport Solutions
11. Industrial or Manufacturing or Mining Productivity
12. Disaster Risk Reduction and Climate Change Adaptation
13. Science And Technology (S&T) Services for the Production Sector
14. Metrology, Calibration and Standards
15. Technology Transfer or Commercialization
16. Human Resource Development for STI
17. 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(R&D)
2. Space Science and Technology
3. ICT Development, Electronics and Artificial Intelligence
4. Strengthening of R&D and S&T 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.

1 **c. Collaborative R&D to Leverage the Economy (CRADLE) for**
2 **RDIs and Industry.** The CRADLE Program shall be implemented to promote
3 technological advancement and innovation in local companies and to support the
4 growth of the Philippine innovation ecosystem. Through the program, the academe
5 or RDI in partnership with a Filipino company, shall undertake research and
6 development to improve the company's products, processes, and services to become
7 more competitive in their respective industries. To ensure that research outputs from
8 the academe are commercially utilized by the market, beneficiary-companies under
9 this program must provide at least Twenty Percent (20%) counterpart funding and
10 commit to adopt the technology that shall be developed by their R & D Partner.

11 **d. Business Innovation through S&T (BIST) for Industry.** The
12 BIST Program shall be implemented by the DOST to provide financial assistance to
13 Filipino private companies for the acquisition of strategic and relevant technologies
14 so they can undertake their R&D activities. The financial assistance shall be used
15 solely for the purchase of hightech equipment or to secure technology licensing or
16 patent rights and shall be refunded to the DOST at zero percent interest.

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

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

25
26 **SEC.8. S4CP Management Office.** The S4CP Management Office shall be created
27 and placed under the supervision of the Office of the Secretary of the DOST. The S4CP
28 Management Office shall ensure the effective and efficient implementation of the Science
29 for Change Programs. It shall perform coordinating and secretariat functions and promote
30 the various S4CP programs. The Secretary of the DOST shall determine the organizational
31 structure and staffing pattern of the S4CP Management Office in accordance with the
32 Revised Compensation and Position Classification System subject to the evaluation and
33 approval of the Department of Budget and Management and in compliance with Civil Service
34 rules and other pertinent laws and regulations.

35 **SEC. 9. The Harmonized National R&D Agenda.** The DOST shall, in consultation
36 with government research institutions and other agencies concerned, formulate a
37 harmonized national research and development agenda (HNRDA) and a program for
38 technology adoption for the government in accordance with the priorities of the Philippine
39 Development Plan. The proposed HNRDA shall be submitted to the National Innovation
40 Council for approval. The DOST shall certify that all the publicly funded R&D projects form

1 part of the HNRDA subject to the provision on Harmonized National R&D Agenda in the
2 General Appropriations Act.”

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

8 **SEC.10. *Mandatory Adoption of Publicly-Funded Technologies.*** All publicly-funded
9 and generated technologies whenever feasible and practicable- shall be utilized by all
10 government entities or instrumentalities. All national government agencies (NGAs),
11 government owned and controlled corporations (GOCCs), state universities and colleges
12 (SUCs), and local government units (LGUs) conducting science and technology
13 development projects shall adopt publicly-funded technologies.

14 **SEC. 11. *Administration.*** The Science for Change Program shall be administered by
15 the DOST. The DOST shall coordinate their activities with other departments, agencies and
16 bureaus, including government owned and controlled corporations and local government
17 units to carry out effectively the provisions of this Act.

18 The DOST shall provide for a mechanism that will prioritize areas for application of
19 research to attain technological advancement and innovation leading to economic
20 development in accordance to this act.

21 The DOST may assign the implementation of the science for change program to the
22 research councils and institutes that is consistent and will strengthen its mandate.

23 They shall consider their enhancement that will complement the specific mandates
24 of the research councils and institutes within the DOST that is consistent to the Philippine
25 Development Plan.

26 **SEC. 12. *Data Banking Responsibility.*** The DOST shall create and maintain a central
27 databank of persons who have availed the Science for Change Program pursuant to this Act
28 to serve as directory and guide in sustaining the pool of science technology and innovation
29 experts in the country.

30 The DOST shall require all funding recipients to submit their periodic
31 accomplishment reports to ensure that R&D activities are properly applied and utilized in
32 all over the country and deliberately transfer technologies to the private sector to reach the
33 intended users and to authentically respond to the issues in the Philippine science,
34 technology and innovation ecosystem in accordance to its objectives.

35
36 **SEC. 13. *International cooperation in research and development.*** The DOST shall
37 undertake and encourage collaboration in the scientific research and development activities
38 with different international scientific organizations and facilitate the active participation of
39 domestic and foreign private entities in order to establish a system of priorities towards
40 filling the basic and immediate needs of the country.

41 **SEC. 14. *Interagency coordination.*** The DOST shall coordinate and promote

1 cooperation in the application of research and development with various institutions being
2 undertaken by the bureaus, offices, agencies, universities and instrumentalities of the
3 government to prevent duplication.

4 **SEC. 15. *Evaluation and Review.*** The DOST shall undertake at least once every three
5 (3) years a monitoring and evaluation of the Science for Change Program in order to review
6 and assess, among others, how the program has impacted the state of science, technology
7 and innovation human resources development and the local economy on the
8 implementation of this Act and submit recommendations for its improvement.

9 **SEC. 16. *Donations.*** The DOST is authorized to receive donations, contributions,
10 grants, bequests, or gifts, in cash or in kind, **to** be used exclusively for the implementation
11 of this Act in accordance with existing budgeting, accounting, auditing and other pertinent
12 laws, rules and regulations.

13 **SEC.17. *Appropriations.*** The amount necessary for the initial implementation of this
14 Act shall be charged against the current year's appropriations of the DOST. Thereafter, the
15 funding of which shall be included in the Annual General Appropriations Act.

16 **SEC.18. *Annual Report.*** The DOST shall submit an annual report on the
17 implementation of the S4CP to the Office of the President and to the Committee on Science
18 and Technology of the House of Representatives and the Senate.

19 **SEC.19. *Implementing Rules and Regulations.*** Within One hundred eighty (180)
20 days from the effectivity of this Act, the DOST shall formulate rules and regulations for its
21 effective implementation.

22 **SEC.20. *Separability Clause.*** If any part or provision of this Act is declared invalid
23 or unconstitutional, the remaining parts or provisions not affected shall remain and in full
24 force and effect.

25 **SEC. 21. *Repealing Clause.*** - All laws, ordinances, rules, regulations, other issuances
26 or parts thereof, which are inconsistent with this Act, are hereby repealed or modified
27 accordingly.

28 **SEC.22. *Effectivity.*** This Act shall take effect fifteen (15) days after its publication in
29 the *Official Gazette* or in a newspaper of general circulation.

Approved,