

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



23 NOV 29 A11 :25

SENATE
S. No. 2499

RECEIVED BY:

A handwritten signature in black ink, consisting of a large, stylized loop and a horizontal line extending to the right.

Introduced by Senator Joseph Victor Ejercito

AN ACT
PROVIDING FOR THE MODERNIZATION OF THE PHILIPPINE INSTITUTE OF
VOLCANOLOGY AND SEISMOLOGY (PHIVOLCS), PROVIDING FUNDS
THEREFOR AND FOR OTHER PURPOSES

EXPLANATORY NOTE

The Philippines is a country prone to various natural disasters due to its location along the Pacific Ring of Fire, where tectonic plate boundaries and volcanic arcs prevalent, and because of this, the country is prone to earthquakes of varying magnitudes which causes structural damage, landslides, and tsunamis. And over the years, the country has experienced several volcanic disasters with significant impact on communities and the environment. On the other hand, an average of 20 typhoons enters the Philippines annually making it one of the most typhoon-prone countries in the world.

The World Risk Index for 2022 ranked the Philippines no. 1 for the most-disaster prone country in the world. Further, the Global Risks Report 2023 by World Economic Forum revealed that the top risk faced by the country in the next two years is natural disasters and extreme weather events.¹ Such disasters that regularly hit the Philippines could easily take back any economic gains the country has.

¹ The Global Risks Report 2023. 18th Edition-
https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf

The Philippine Institute of Volcanology and Seismology (PHIVOL) remains at the forefront in the forecast and determination of risks related to volcano, earthquake, tsunamis, and its related hazards. They are able to provide timely, quality and socially-inclusive information and services for warning, disaster preparedness and mitigation through the development and application of technologies for the monitoring and accurate prediction of said hazards.

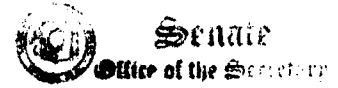
Considering the vulnerability of the country to such natural disasters, modernizing the PHIVOLCS is crucial and essential to enhance the country's ability to monitor and respond that may arise from volcanic eruptions, earthquakes, tsunami and other related seismic or geotectonic events. This is to ensure that the agency's upgraded capabilities would contribute to better disaster preparedness, public safety, and scientific knowledge, ultimately reducing the impact of volcanic disasters on communities and promoting sustainable development in the Philippines.

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



JOSEPH VICTOR G. EJERCITO

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



23 NOV 29 A11 :25

SENATE

RECEIVED BY:

S. No. 2499

Introduced by Senator Joseph Victor Ejercito

AN ACT
PROVIDING FOR THE MODERNIZATION OF THE PHILIPPINE INSTITUTE OF
VOLCANOLOGY AND SEISMOLOGY (PHIVOLCS), PROVIDING FUNDS
THEREFOR AND FOR OTHER PURPOSES

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

1 Section. 1. *Short title.* - This Act shall be the "PHIVOLCS Modernization Act."

2 Sec. 2. *Declaration of Policy.* - It has been the policy of the State to utilize
3 scientific and technical knowledge and information as an effective instrument to
4 ensure the safety, well-being and economic security of the people; to safeguard the
5 environment; and to promote national progress and sustainable socioeconomic
6 development through various applications of geology, geophysics, geodetic
7 engineering and allied sciences. The State also recognizes the need to strengthen the
8 capability of government personnel tasked to monitor volcanic and seismological
9 activities and other related services and information to the public. Towards this end,
10 the State shall undertake the modernization of the Philippine Institute of Volcanology
11 and Seismology (PHIVOLCS) to improve its technological operational capacity,
12 strengthen its role as the premier national volcano and earthquake monitoring agency
13 and to attain its vision as a center of excellence for related information services.

14 Sec. 3. *Objectives.* - Pursuant to the foregoing policy, the PHIVOLCS
15 Modernization Program shall be implemented in accordance with the following
16 objectives:

- 1 (a) To upgrade physical resources and operational techniques through acquisition
2 and development of state-of-the-art instruments, equipment, facilities and
3 systems to enhance current capabilities in providing useful, timely, accurate
4 and reliable volcanic and seismological data and localized warning and
5 information services for use in decision-making in disaster preparedness,
6 climate change adaptation, water resources management, agriculture,
7 transportation, health, tourism and other sectors;
- 8 (b) To enhance research and development capabilities by adopting a rationalized
9 and integrated approach with focus on the improvement of basic operations
10 and specialized services;
- 11 (c) To integrate disaster risk reduction and management in the sustainable
12 socioeconomic development planning at the national and local levels in
13 coordination with appropriate government agencies and other entities;
- 14 (d) To strengthen linkages and cooperation at the national level among the various
15 providers and users of geological, seismological and other services as well as
16 to provide for the appropriate mechanisms for this purpose;
- 17 (e) To establish and enhance volcanic and seismological activity monitoring service
18 centers in strategic areas in the country to broaden the agency base for the
19 delivery of service in the countryside;
- 20 (f) To strengthen a technology-based data center consistent with international
21 standards to make information available to those involved, whether from the
22 government or private sector in Disaster Risk Reduction and Management
23 Plans, among others;
- 24 (g) To enhance public information, education and advocacy on geological
25 activities, as well as their impacts, risks and vulnerability;
- 26 (h) To facilitate the appropriate appreciation and delivery of information, products
27 and services to decision makers, media, other users and the general public;
28 and
- 29 (i) To provide a more competitive base pay and other benefits for its personnel in
30 order to promote professionalism and commitment to the service.

31 **Sec. 4. *Definition of Terms.*** - the following terms are defined as follows:

- 1 (1) Seismology - the scientific study of the sudden, violent movements of the earth
2 connected with earthquakes
- 3 (2) Tsunami - a series of large waves of extremely long wavelength and period
4 usually generated by a violent, impulsive undersea disturbance or activity near
5 the coast or in the ocean.
- 6 (3) Volcanology - Is the study of volcanoes, lava, magma, ash or tephra fall and
7 related geological, geophysical and geochemical phenomena.
- 8 (4) Disaster Risk/Hazard- a process, phenomenon or human activity that may
9 cause loss of life, injury or other health impacts, property damage, social and
10 economic disruption or environmental degradation.
- 11 (5) Risk Transfer- the process of formally or informally shifting the financial
12 consequences of particular risks from one party to another whereby a
13 household, community, enterprise or state authority will obtain resources from
14 the other party after a disaster occurs, in exchange for ongoing or
15 compensatory social or financial beneficial provided to that other party.
- 16 (6) Vulnerability – the conditions determined by physical, social, economic and
17 environmental factors of processes which increase the susceptibility of an
18 individual, a community, assets or systems to the impacts of hazards.

19 **Sec. 5. *Mandate.*** - The PHIVOLCS is mandated to:

- 20 (a) Predict the occurrence of volcanic eruptions and earthquakes, and their related
21 geotectonic phenomena,
- 22 (b) Determine how volcanic eruptions and earthquakes shall occur and areas likely
23 to be affected,
- 24 (c) Mitigate hazards of volcanic activities through appropriate detection, forecast
25 and warning system.
- 26 (d) Provide appropriate volcano, earthquake and tsunami products and services
27 for disaster preparedness,

28 PHIVOLCS shall provide timely, quality and socially-inclusive information and
29 services for warning, disaster preparedness and mitigation.

30 **Sec. 6. *Organizational Structure.*** - The PHIVOLCS shall be an attached agency of
31 the Department of Science and Technology (DOST) for purposes of policy and program

1 coordination, to ensure alignment in national science and technology policies and
2 priorities.

3 It shall be headed by an Executive Director V with the rank and compensation
4 of a Department Undersecretary who shall be appointed by the President upon
5 recommendation by the Secretary of the DOST.

6 The Executive Director V shall be assisted by three (3) Deputy Executive
7 Director V for Operations Services; Research and Development and S&T Services; and
8 Administration, Finance and General Services, all with the rank and compensation of
9 a Department Assistant Secretary to be appointed by the President.

10 *Sec. 7. Qualifications.* - No person shall be appointed as Executive Director V
11 unless that person is a natural-born citizen and a resident of the Philippines, of good
12 moral character, has an advanced degree in geology, geodetic engineering,
13 volcanology, physics, and other related fields and with at least five (5) years of
14 competence and expertise in volcanology, geophysics, and or allied sciences.
15 Provided, That the Executive Director V and the three (3) Deputy Executive Director
16 V shall be career executive officers.

17 *Sec. 8. Components of Modernization.* - The PHIVOLCS modernization shall
18 have the following components:

19 (a) Upgrade and Maintenance of Physical Resources and Operational
20 Performance. This shall entail the acquisition and/or upgrade of state-of-the-
21 art instruments, equipment, facilities, systems, and operational techniques,
22 with emphasis on volcano, earthquake and tsunami monitoring and warning
23 system: *Provided*, that prior to such acquisition and/or upgrade, an inventory
24 of existing government and private, volcanic and seismological instruments
25 nationwide shall be undertaken: *Provided*, further, that the acquisition of new
26 instruments, equipment and systems shall be harmonized with the phase-out
27 of uneconomical and obsolete instruments, equipment and systems in the
28 PHIVOLCS inventory;

29 (b) Volcano Monitoring Network Infrastructure and Information System
30 Development for all active volcanoes of the Philippines that will ensure early-
31 warning of volcanic activity even at volcanoes of long dormancy.

- 1 (c) Sustainable development of continually evolving technologies for eruption
2 early- warning will help the national government keep abreast with the latest
3 in S&T while maximizing its investment in public safety amidst technology
4 shifts and changes. From state-of-the-art systems to customized off-the-shelf
5 instruments interfaced by the Internet-of-Things, such technologies provide
6 quality scientific data while Instilling a culture of dynamic technical learning,
7 vital to long-term organizational growth and performance.
- 8 (d) Earthquake Monitoring and Information System Development. Establish,
9 operate and maintain an advanced infrastructure for earthquake and tsunami
10 monitoring throughout the Philippines that operates with high performance
11 standards, gathers critical technical data, and effectively provides information
12 products and services to meet the needs of the Philippine government and
13 the public
- 14 (e) Reliable Monitoring. Continuously monitor earthquakes and other seismic
15 disturbances throughout the Philippines, including earthquakes that may
16 cause a tsunami or precede a volcanic eruption, with special focus on regions
17 of moderate to high hazard and risk.
- 18 (f) Enhancement of Earthquake Monitoring Network for Protection/Conservation.
19 This will thoroughly measure strong earthquake shaking at ground sites and
20 in buildings and critical structures. Focus should be in urban areas and near
21 major active fault zones to gather greatly needed data and information for
22 reducing earthquake impacts on buildings and structures.
- 23 (g) Development of Forecasting Capability for Impending Large Earthquakes/
24 Tsunami Events. Develop machine learned capability to determine earthquake
25 parameters and the resulting information will automatically be broadcast to
26 mobile phones and social media accounts whenever a significant earthquake
27 occurs, for immediate assessment of impacts. In areas feasible, for sites at a
28 distance from the epicenter, an early warning will be broadcasted seconds
29 before strong shaking arrives. Provide similar capabilities for automated
30 warning and alert for tsunamis.
- 31 (h) Establishment of permanent PHIVOLCS main office building and facilities
32 including land acquisition to house the Data Receiving/ Operation Centers for

1 real-time volcano, earthquake and tsunami monitoring. This shall ensure
2 stability and protection of government investments on scientific, technical
3 equipment and research laboratories.

4 (i) Enhancement of Research and Development Capability. This shall involve the
5 enhancement of research and development capability through a more
6 rationalized and totally integrated approach with established earthquake and
7 volcano research laboratories, focusing on improvement of operations, as well
8 as the strengthening of specialized services with cost recovery measures;

9 (j) Enhancement of Public Information and Linkages with Local Government Units
10 (LGUs) and other stakeholders. This shall include continuous sharing of
11 information to LGUs and other stakeholders that help in the disaster planning,
12 preparation, disaster mitigation, among others;

13 (k) Enhancement of Volcanic and Earthquake Data and Information Dissemination
14 Services. This shall involve the development and use of communication
15 strategy for ensuring the use of plain and local language, nontechnical terms
16 and familiar graphical presentations, in combination with science-based
17 information that will ensure the delivery of accurate, up-to-date and timely
18 earthquake, tsunami, and volcano-related information to create greater public
19 awareness and draw appropriate response for disaster risk reduction:
20 Provided, that PHIVOLCS shall partner with the Komisyon sa Wikang Filipino
21 (KWF), various Sentro ng Wika at Kultura, Philippine Commission on Women,
22 and other rights-based organizations for the development or enhancement of
23 socially-inclusive products. PHIVOLCS shall collaborate with both public and
24 private organizations to effectively disseminate data and products.

25 (l) Strengthening of the Human Resource Development Program (HRDP). - The
26 HRDP of PHIVOLCS will continue to be aligned with the strategic goals of the
27 Institute. This shall ensure that personnel are provided equal opportunities for
28 self- improvement to be competent, motivated to work and rewarded.

29 Priority will be given to complementation and capacity building of a wide-
30 range of experts in volcanology, seismology related sciences, engineering and
31 information technology and to efficiently develop, operate and maintain
32 advanced monitoring systems and distill and communicate accurate volcano,

1 earthquake and tsunami information for public guidance. Support to continued
2 professional learning will further ensure skills development and motivation
3 that will translate to better S&T services.

4 (m) Provision of Risk Information. This involves the sharing of risk
5 information to LGUs and other stakeholders in order to provide social and
6 economic protection and increase resiliency in the face of disaster; This shall
7 include continuous sharing of information to LGUs and other stakeholders that
8 help in the disaster planning, preparation, disaster mitigation, risk transfer,
9 among other.

10 (n) International Cooperation. – enhance interaction and cooperation with the
11 international community and ensure that the Philippines has official
12 representation in the geoscientific community.

13 *Sec. 9. Collaboration or linkages with Local Government Units (LGUs).* - With
14 this institutional modernization of PHIVOLCS, the roles of the local government will
15 also be enhanced to cover the following areas:

16 (a) Public Intermediary. The local government, together with national & local news
17 media and the emergency management community, shall frequently act as
18 intermediaries between PHIVOLCS and its complex target audience including
19 the general public, institutional decision makers, and emergency responders,
20 especially in crafting plans attuned to the local needs of its constituents to
21 increase public resilience to earthquakes, tsunami and volcanic eruptions, to
22 reduce or eliminate long-term risk to human life and property and shorten
23 recovery periods based on risk assessments.

24 (b) Information Dissemination. It is critically important for PHIVOLCS to work
25 closely with the national and local disaster agencies to craft appropriate
26 information messages, to regularly test and evaluate their dissemination
27 communication channels, and to identify gaps and dissemination problems, so
28 that the tsunami messages reach the intended users when an event occurs.

29 (c) Awareness and Promotion. Outreach and communication with the public is
30 crucial to their understanding and awareness of the nature of the geotectonic
31 hazards, the risks to personal safety and property, and the steps to reduce
32 those risks including the deployment of sustainable, reliable and effective

1 monitoring and warning systems. With this, the local government is expected
2 to promote in local and international recognition programs, its own interfaces
3 with the enhanced PHIVOLCS system with its increased coverage and explore
4 avenues to enjoy its full benefits

- 5 (d) Technical Review. The local government shall contribute in the review of local
6 research, exchange information and coordinate local projects during regular
7 local meetings to ensure readiness to disasters, that appropriate guidelines are
8 consistently crafted and that local support infrastructure to the enhanced
9 systems are funded;

10 *Sec. 10. Components of the HRDP.* - This component shall include the following:

- 11 (a) New Salary Scale for PHIVOLCS Personnel. - The Department of Budget and
12 Management (DBM) shall develop a new salary scale for PHIVOLCS personnel
13 in consonance with Republic Act No. 8439, as amended otherwise known as
14 the "Magna Carta for Scientists, Engineers, Researchers and other Science and
15 Technology Personnel in Government" with a corresponding increase in the
16 base pay, allowances and other benefits;

- 17 (b) PHIVOLCS Personnel Retention Incentive. - An additional incentive to be
18 known as the "Personnel Retention Incentive" shall be provided to qualified
19 PHIVOLCS personnel, to be determined by PHIVOLCS in consultation with DBM
20 in an amount not exceeding twenty percent (20%) of the monthly basic salary
21 subject to the implementing rules and regulations (IRR) which shall be
22 hereinafter formulated; and

- 23 (c) Scholarship Program. - Not later than three (3) years from the enactment of
24 this Act, scholarships shall be provided for undergraduate and graduate studies
25 in volcano- and seismology-related fields as well as for specialized training
26 programs, in coordination with the DOST, Commission on Higher Education
27 (CHED) and Higher Education Institutions (HEIs). Cooperation on human
28 resources upgrading and capability enhancement with regional and
29 international organizations shall also be undertaken.

- 30 (d) Development of Regional and International Cooperation Program. - This shall
31 entail the development of appropriate collaborative arrangements with

1 relevant regional and international bodies and government institutions to
2 complement the national effort for modernization.

3 **Sec. 11. *Disaster Preparedness, Public Information and Dissemination Services.* -**

4 The institutional modernization of PHIVOLCS shall enhance public information,
5 education and advocacy on earthquake, tsunami and volcano hazards and risks. To
6 facilitate the appropriate appreciation and delivery of science-based information to
7 target stakeholders for proper response actions before and during the occurrence of
8 these hazards, there shall be provision for:

9 (a) Fully-equipped and well-staffed learning / training center that will serve as a
10 platform for planning, implementing, monitoring, and evaluating capacity
11 development programs for various stakeholders regarding mitigation and
12 preparedness for volcanic eruptions, earthquakes, and tsunami-related
13 hazards.

14 (b) A knowledge management system (composed of people, process,
15 infrastructure, and strategy) that will ensure that researches are attuned to
16 the public's needs and that research and development outputs are translated
17 into culturally-relevant, gender-responsive, and disability-inclusive capacity
18 development programs, and warning and risk information products and
19 services for key stakeholders and the public.

20 (c) A multi-channel and multi-directional communication strategy and
21 standardized procedures that shall ensure access to and effective
22 dissemination of useful information on volcano, earthquake and tsunami
23 disaster preparedness, risk reduction, and emergency response to intended
24 stakeholders and the public.

25 **Sec. 12. *Formulation and Submission of the PHIVOLCS Modernization Program.* —**

26 The Executive Director of the PHIVOLCS in coordination with the Secretary of the DBM
27 and the Director-General of the National Economic and Development Authority
28 (NEDA), shall formulate the PHIVOLCS Modernization Program and oversee its
29 implementation based on the policy objectives provided in this Act.

30 The PHIVOLCS Modernization Program shall indicate among others:

31 (a) PHIVOLCS requirements in terms of personnel, equipment and facilities during
32 the various stages of modernization;

1 (b) The modernization projects, which shall indicate the equipment and technology
2 acquisitions, including major construction or upgrade of facility and the
3 particular objective and component to which such intended acquisition,
4 construction and upgrading belongs to; and

5 (c) The priorities, schedules and estimated cost of each modernization project.

6 **Sec. 13. *Period of Implementation.*** - The modernization program under this Act
7 shall be implemented for an initial period of three (3) years: Provided, that payments
8 for multi-year contract obligations incurred under this Act may extend beyond this
9 period. Provided, further, that PHIVOLCS shall continue to modernize and constantly
10 update its operational capabilities to keep pace with best international practices.

11 **Sec. 14. *PHIVOLCS Modernization Fund.*** — There is hereby created the PHIVOLCS
12 Modernization Fund to be used exclusively for the PHIVOLCS Modernization Program,
13 which shall be sourced from the following:

14 (a) The amount of five billion pesos (P5,000,000,000.00) to be taken from the
15 share of the National Government in the gross income of the Bases Conversion
16 and Development Authority (BCDA). For two (2) years after the effectivity of
17 this Act, an amount of two billion five hundred million pesos
18 (P2,500,000,000.00) per year shall be released to the PHIVOLCS. The entire
19 amount of five billion pesos (P5,000,000,000.00), including any interest income
20 thereon, shall be used exclusively for capital outlay.

21 (b) Loans, grants, bequests, and donations whether from local or foreign sources.
22 The Secretary of the DOST with the approval of the NEDA and subsequently
23 the Department of Finance (DOF) is hereby granted the authority to enter into
24 loan agreements with foreign financial institutions.

25 The PHIVOLCS Modernization Fund shall be administered by the Executive Director
26 of the PHIVOLCS in accordance with existing government budgeting, accounting and
27 auditing rules and regulations.

28 **Sec. 15. *Annual Report.*** —The Executive Director of the PHIVOLCS shall prepare
29 an annual report on the status of the implementation of the PHIVOLCS Modernization
30 Program which shall be submitted through the DOST Secretary, to the President and
31 to the Chairpersons of the Committee on Science and Technology of the Senate and
32 the House of Representatives not later than June 30 of the succeeding year.

1 *Sec. 16. Tax Exemptions.* – Donations, grants, gifts, endowments, legacies, and
2 contributions used actually, directly and exclusively for the purpose for PHIVOLCS shall
3 be exempt from donor’s tax and the same shall be considered as allowable deduction
4 from gross income for purposes of computing the taxable income of the donor, in
5 accordance with Section 34 (H)(2)(a) of the National Internal Revenue Code of 1997,
6 as amended. Likewise, such other transfers of ownership and/or possession of real or
7 personal properties of all kinds shall be exempt from all taxes.

8 *Sec. 17. Procurement of Scientific and Technical Materials, Equipment and*
9 *Services.* – The PHIVOLCS shall undertake the procurement of scientific and technical
10 materials, equipment and services in its operation and administration in the most
11 expeditious manner and adopt the most suitable or appropriate method of
12 procurement that it deems fit based on its identified needs and requirements
13 depending on the existing conditions and requirements that justify the use of a
14 particular alternative modality provided for by Republic Act No. 9184, otherwise known
15 as the “Government Procurement Reform Act” and its IRR.

16 *Sec. 18. Exemption from Import Duties, Taxes and Restrictions.* - Importation and
17 consignments of equipment shall benefit from:

- 18 (a) Exemption from all duties and taxes;
19 (b) Waiver of economic prohibitions and restrictions except for categories of special
20 goods and equipment that may be indicated by the PHIVOLCS;
21 (c) Clearance without regards to the country of origin or the country from which
22 the goods have arrived, subject to monitoring for reasons of public health and
23 security; and
24 (d) Immediate release of urgent, necessary monitoring equipment when there is
25 an ongoing volcanic eruption.

26 *Sec. 19. Simplification of Documentation Requirements.* -

- 27 (a) Consignments of equipment sent by international collaborative research
28 partners shall be cleared or released on the basis of a simplified equipment
29 declaration providing the minimum information necessary for the Bureau of
30 Customs to identify the equipment and object, when deemed necessary, to
31 completion of a more complete declaration within a specified period.

1 (b) The requirements for the declaration for all imports of equipment by or on
2 behalf of international collaborative research partners and any supporting
3 documents relating to it, release and clearance shall be simplified and lodged
4 without fee.

5 Sec. 20. *Appropriations.* - The amount necessary to carry out the
6 implementation of this Act shall be initially charged against the current fiscal year
7 appropriations of the DOST-PHIVOLCS. Thereafter, the amount needed for the
8 continued implementation of the modernization program shall be included in the
9 General Appropriations Act.

10 Sec. 21. *Implementing Rules and Regulations (IRR).* - Within ninety (90) days
11 from the effectivity of this Act, the PHIVOLCS shall issue the IRR for the effective
12 implementation of this Act in consultation with relevant stakeholders.

13 Sec. 22. *Separability Clause.* - If any provision or part of this Act is declared
14 unconstitutional, the remainder of this Act or any provisions not affected thereby shall
15 remain to be in full force and effect.

16 Sec. 23. *Repealing Clause.* - All laws, orders, proclamations, rules and
17 regulations or parts thereof which are inconsistent with the provisions of this Act are
18 hereby repealed or modified accordingly.

19 Sec. 24. *Effectivity Clause.* - This Act shall take effect fifteen (15) days after its
20 publication in one (1) national newspaper of general circulation.

Approved,