

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

NINETEENTH CONGRESS
First Regular Session

HOUSE BILL NO. 7142



Introduced by Rep. Anna York P. Bondoc

EXPLANATORY NOTE

The geographic location of the Philippines makes it exposed to a plethora of hazards, including recurrent typhoons, 24 active volcanoes, 27 potentially active volcanoes and numerous active faults and trenches capable of producing large magnitude earthquakes that can result in disasters and disrupt life in communities. Of the 24 active volcanoes, only (ten) 10 are currently being monitored. And out of the (ten) 10 monitored volcanoes, only (two) 2 are instrumented with all required station types.

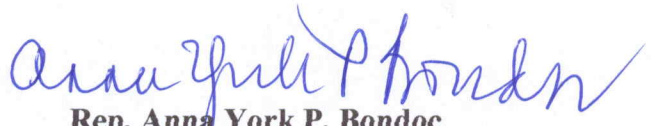
On the other hand, at least 60% of the country's total land area is exposed to multiple hazards, and 74% of the population is susceptible to their impact. 66 out of 81 provinces in the Philippines are coastal, and are therefore, exposed to tsunami threats. The total coastal population in the Philippines based on the 2015 PSA data is 64.7 million, or almost 61.6 % of the total population.

Although the Philippines has made progress in collecting comprehensive and updated risk information using different technological tools including GIS, Light Detection and Ranging (LiDAR), there is a need to further enhance the capabilities of the Philippine Institute of Volcanology and Seismology (PHIVOLCS) of the Department of Science and Technology (DOST) to mitigate disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.

This measure seeks, among others, to modernize the Institute, by augmenting its present volcano and seismic monitoring network, and updating its human resource requirements to better provide timely and quality information and services for warning, disaster preparedness, and mitigation.

This Representation, and our district, the 4th District Pampanga, along with other affected provinces of Central Luzon, have first-hand experience of the devastation caused by the eruption of the Mt. Pinatubo volcano in 1991 and the calamitous flooding in its aftermath. It took us decades to fully recover from the magnitude of the havoc wreaked by the volcanic eruption.

It is hoped that with the modernization of PHILVOLCS and its capabilities, we can have better services for warning, preparedness, and mitigation, for disasters like the Mt. Pinatubo volcano eruption.


Rep. Anna York P. Bondoc
4th District Pampanga

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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 House of Representatives of the Philippines in Congress Assembled:

SECTION 1. Short Title. – This Act shall be the “**PHIVOLCS Modernization Act.**”

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

SEC. 3. Objectives. – Pursuant to the foregoing policy, the PHIVOLCS Modernization Program shall be implemented in accordance with the following objectives:

- (a) To upgrade physical resources and operational techniques through acquisition and development of state-of-the-art instruments, equipment, facilities and systems to enhance current capabilities in providing useful, timely, accurate and reliable volcanic and seismological data and localized warning and information services for use in decision-making in disaster preparedness, climate change adaptation, water resources management, agriculture, transportation, health, tourism and other sectors;
- (b) To enhance research and development capabilities by adopting a rationalized and integrated approach with focus on the improvement of basic operations and specialized services;
- (c) To integrate disaster risk reduction and management in the sustainable socioeconomic development planning at the national and local levels in coordination with appropriate government agencies and other entities;
- (d) To strengthen linkages and cooperation at the national level among the various providers and users of geological, seismological and other services as well as to provide for the appropriate mechanisms for this purpose;

- (e) To establish and enhance volcanic and seismological activity monitoring service centers in strategic areas in the country to broaden the agency base for the delivery of service in the countryside;
- (f) To strengthen a technology-based data center consistent with international standards to make information available to those involved, whether from the government or private sector in Disaster Risk Reduction and Management Plans, among others;
- (g) To enhance public information, education and advocacy on geological activities, as well as their impacts, risks and vulnerability;
- (h) To facilitate the appropriate appreciation and delivery of information, products and services to decision makers, media, other users and the general public; and
- (i) To provide a more competitive base pay and other benefits for its personnel in order to promote professionalism and commitment to the service.

SEC. 4. *Definition of Terms.* – the following terms are defined as follows:

- (1) Seismology – the scientific study of the sudden, violent movements of the earth connected with earthquakes
- (2) Tsunami - a series of large waves of extremely long wavelength and period usually generated by a violent, impulsive undersea disturbance or activity near the coast or in the ocean.
- (3) Volcanology – is the study of volcanoes, lava, magma, ash or tephra fall and related geological, geophysical and geochemical phenomena.

SEC. 5. *Mandate.* – The PHIVOLCS is mandated to:

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

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

SEC. 6. *Organizational Structure.* The PHIVOLCS shall be an attached agency of the Department of Science and Technology (DOST) for purposes of policy and program coordination, to ensure alignment in national science and technology policies and priorities.

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

The Executive Director V shall be assisted by three (3) Deputy Executive Director V for Operations Services; Research and Development and S&T Services; and Administration,

Finance and General Services, all with the rank and compensation of a Department Assistant Secretary to be appointed by the President.

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

SEC. 8. *Components of Modernization.* – The PHIVOLCS modernization shall have the following components:

- (a) Upgrading and Maintenance of Physical Resources and Operational Techniques. – This shall entail the acquisition and/or upgrade of state-of-the-art instruments, equipment, facilities, systems, and operational techniques, with emphasis on volcano, earthquake and tsunami monitoring and warning system: Provided, that prior to such acquisition and/or upgrade, an inventory of existing government and private, volcanic and seismological instruments nationwide shall be undertaken: Provided, further, that the acquisition of new instruments, equipment and systems shall be harmonized with the phase-out of uneconomical and obsolete instruments, equipment and systems in the PHIVOLCS inventory;
- (b) Sustained development of Volcano Monitoring network infrastructure for all active volcanoes of the Philippines that will ensure early-warning of volcanic activity even at volcanoes of long dormancy.
- (c) Sustainable development of continually evolving technologies for eruption early-warning will help the national government keep abreast with the latest in S&T while maximizing its investment in public safety amidst technology shifts and changes. From state-of-the-art systems to customized off-the-shelf instruments interfaced by the Internet-of-Things, such technologies provide quality scientific data while instilling a culture of dynamic technical learning, vital to long-term organizational growth and performance.
- (d) Earthquake Monitoring and Information System Development. Establish, operate and maintain an advanced infrastructure for earthquake and tsunami monitoring throughout the Philippines that operates with high performance standards, gathers critical technical data, and effectively provides information products and services to meet the needs of the Philippine government and the public
- (e) Reliable Monitoring. Continuously monitor earthquakes and other seismic disturbances throughout the Philippines, including earthquakes that may cause a tsunami or precede a volcanic eruption, with special focus on regions of moderate to high hazard and risk.
- (f) Long-term Protection/ Conservation of Built Environment. Thoroughly measure strong earthquake shaking at ground sites and in buildings and critical structures. Focus should be in urban areas and near major active fault zones to gather greatly needed data and information for reducing earthquake impacts on buildings and structures.
- (g) Development of Forecasting Capability for Impending Large Earthquakes/ Tsunami Events. Develop machine learned capability to determine earthquake parameters and the resulting information will automatically be broadcast to mobile phones and social media accounts whenever a significant earthquake occurs, for immediate assessment of impacts. In areas feasible, for sites at a distance from the epicenter, an early warning will be

broadcasted seconds before strong shaking arrives. Provide similar capabilities for automated warning and alert for tsunamis.

- (h) Establishment of permanent PHIVOLCS building including land acquisition to house the Data Receiving/ Operation Centers for real-time volcano, earthquake and tsunami monitoring. This shall ensure stability and protection of government investments on scientific, technical equipment and research laboratories.
- (i) Enhancement of Research and Development Capability. – This shall involve the enhancement of research and development capability through a more rationalized and totally integrated approach with established earthquake and volcano research laboratories, focusing on improvement of operations, as well as the strengthening of specialized services with cost recovery measures;
- (j) Enhancement of Public Information and Linkages with Local Government Units (LGUs) and other stakeholders. -This shall include continuous sharing of information to LGUs and other stakeholders that help in the disaster planning, preparation, disaster mitigation, among others;
- (k) Enhancement of Volcanic and Earthquake Data and Information Dissemination Services. – This shall involve the development and use of communication strategy for ensuring the use of plain and local language, nontechnical terms and familiar graphical presentations, in combination with science-based information that will ensure the delivery of accurate, up-to-date and timely earthquake, tsunami, and volcano-related information to create greater public awareness and draw appropriate response for disaster risk reduction: Provided, that PHIVOLCS shall partner with the Komisyon sa Wikang Filipino (KWF), various Sentro ng Wika at Kultura, Philippine Commission on Women, and other rights-based organizations for the development or enhancement of socially-inclusive products. PHIVOLCS shall collaborate with both public and private organizations to effectively disseminate data and products.
- (l) Strengthening of the Human Resource Development Program (HRDP). - The HRDP of PHIVOLCS will continue to be aligned with the strategic goals of the Institute. This shall ensure that personnel are provided equal opportunities for self-improvement to be competent, motivated to work and rewarded.

Complementation and capacity-building of a wide-range of experts in volcanology and seismology and to efficiently develop, operate and maintain advanced monitoring systems and distill accurate volcano, earthquake and tsunami information for public guidance. Support to continued professional learning will further ensure skills development and motivation that will translate to better S&T services.

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

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

- (b) Information Dissemination. It is critically important for PHIVOLCS to work closely with the national and local disaster agencies to craft appropriate information messages, to regularly test and evaluate their dissemination communication channels, and to identify gaps and dissemination problems, so that the tsunami messages reach the intended users when an event occurs.
- (c) Awareness and Promotion. Outreach and communication with the public is crucial to their understanding and awareness of the nature of the geotectonic hazards, the risks to personal safety and property, and the steps to reduce those risks including the deployment of sustainable, reliable and effective monitoring and warning systems. With this, the local government is expected to promote in local and international recognition programs, its own interfaces with the enhanced PHIVOLCS system with its increased coverage and explore avenues to enjoy its full benefits
- (d) Technical Review. The local government shall contribute in the review of local research, exchange information and coordinate local projects during regular local meetings to ensure readiness to disasters, that appropriate guidelines are consistently crafted and that local support infrastructure to the enhanced systems are funded;

SEC. 10. *Components of the HRDP.* – This component shall include the following:

- (a) New Salary Scale for PHIVOLCS Personnel. – The Department of Budget and Management (DBM) shall develop a new salary scale for PHIVOLCS personnel in consonance with Republic Act No. 8439, as amended otherwise known as the “Magna Carta for Scientists, Engineers, Researchers and other Science and Technology Personnel in Government” with a corresponding increase in the base pay, allowances and other benefits;
- (b) PHIVOLCS Personnel Retention Incentive. – An additional incentive to be known as the “Personnel Retention Incentive” shall be provided to qualified PHIVOLCS personnel, to be determined by PHIVOLCS in consultation with DBM in an amount not exceeding twenty percent (20%) of the monthly basic salary subject to the implementing rules and regulations (IRR) which shall be hereinafter formulated; and
- (c) Scholarship Program. – Not later than three (3) years from the enactment of this Act, scholarships shall be provided for undergraduate and graduate studies in volcano- and seismology-related fields as well as for specialized training programs, in coordination with the DOST, Commission on Higher Education (CHED) and Higher Education Institutions (HEIs). Cooperation on human resources upgrading and capability enhancement with regional and international organizations shall also be undertaken.
- (d) Development of Regional and International Cooperation Program. – This shall entail the development of appropriate collaborative arrangements with relevant regional and international bodies and government institutions to complement the national effort for modernization.

SEC. 11. *Disaster Preparedness, Public Information and Dissemination Services* – The institutional modernization of PHIVOLCS shall enhance public information, education and advocacy on earthquake, tsunami and volcano hazards and risks. To facilitate the appropriate appreciation and delivery of science-based information to target stakeholders for proper response actions before and during the occurrence of these hazards, there shall be provision for:

- (a) Fully-equipped and well-staffed learning / training center that will serve as a platform for

planning, implementing, monitoring, and evaluating capacity development programs for various stakeholders regarding mitigation and preparedness for volcanic eruptions, earthquakes, and tsunami-related hazards.

- (b) A knowledge management system (composed of people, process, infrastructure, and strategy) that will ensure that researches are attuned to the public's needs and that research and development outputs are translated into culturally-relevant, gender-responsive, and disability-inclusive capacity development programs, and warning and risk information products and services for key stakeholders and the public.
- (c) A multi-channel and multi-directional communication strategy and standardized procedures that shall ensure access to and effective dissemination of useful information on volcano, earthquake and tsunami disaster preparedness, risk reduction, and emergency response to intended stakeholders and the public.

SEC. 12. *Formulation and Submission of the PHIVOLCS Modernization Program.* – The Executive Director of the PHIVOLCS in coordination with the Secretary of the DBM and the Director-General of the National Economic and Development Authority (NEDA), shall formulate the PHIVOLCS Modernization Program and oversee its implementation based on the policy objectives provided in this Act.

The PHIVOLCS Modernization Program shall indicate among others:

- (a) PHIVOLCS requirements in terms of personnel, equipment and facilities during the various stages of modernization;
- (b) The modernization projects, which shall indicate the equipment and technology acquisitions, including major construction or upgrade of facility and the particular objective and component to which such intended acquisition, construction and upgrading belongs to; and
- (c) The priorities, schedules and estimated cost of each modernization project.

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

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

SEC. 14. *PHIVOLCS Modernization Fund.* – There is hereby created the PHIVOLCS Modernization Fund to be used exclusively for the PHIVOLCS Modernization Program, which shall be sourced from the following:

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

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

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

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

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

SEC. 17. *Procurement of Scientific and Technical Materials, Equipment, and Services.* - The PHIVOLCS shall undertake the procurement of scientific and technical materials, equipment, and services in its operation and administration, in the most expeditious manner, and adopt the most suitable or appropriate method of procurement that it deems fit based on its identified needs and requirements depending on the existing conditions and requirements that justify the use of a particular alternative modality provided for by Republic Act No. 9184, otherwise known as the "Government Procurement Reform Act" and its Implementing Rules and Regulations (IRR).

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

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

Sec. 19. *Land Area.* - A land area equivalent to at least ten (10) hectares out of the vast land which are under the administration of BCDA within the Clark Special Economic Zone in Pampanga and Tarlac, shall be allocated for free exclusively for the PHIVOLCS office and its stations.

Sec. 20. *Simplification of Documentation Requirements* -

- (a) Consignments of equipment sent by international collaborative research partners shall be cleared or released on the basis of a simplified equipment declaration providing the minimum

information necessary for the Bureau of Customs to identify the equipment and object, when deemed necessary, to completion of a more complete declaration within a specified period.

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

SEC. 21. Appropriations. – The amount necessary to carry out the implementation of this Act shall be initially charged against the current fiscal year appropriations of the DOST – PHIVOLCS. Thereafter, the amount needed for the continued implementation of the modernization program, shall be included in the annual General Appropriations Act.

SEC. 22. Implementing Rules and Regulations (IRR) – Within ninety (90) days from the effectivity of this Act, the PHIVOLCS shall issue the IRR for the effective implementation of this Act in consultation with relevant stakeholders.

SEC. 23. Separability Clause. – If any provision or part of this Act is declared invalid or unconstitutional, the other provisions hereof which are not affected thereby shall continue to be in full force and effect.

SEC. 24. Repealing Clause. – All laws, orders, proclamations, rules and regulations or parts thereof which are inconsistent with the provisions of this Act are hereby repealed or modified accordingly.

SEC. 25. Effectivity Clause. – This Act shall take effect fifteen (15) days after its publication in one (1) national newspaper of general circulation.

Approved.

References:

- Philippine Institute of Volcanology Website, accessed 8 January 2023 <<https://www.PHIVOLCS.dost.gov.ph/index.php/about-us/about-PHIVOLCS>>.
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