

NINETEENTH CONGRESS OF THE REPUBLIC OF THE PHILIPPINES Third Regular Session

3

4

5

6

7

8

9

10

SEP 16 P4:34

SENATE s. No. 2825

)

(In substitution of S. Nos. 2038, 2152, 2156, 2164, 2316, and 2499)

Prepared by the Committees on Science and Technology; Ways and Means; and Finance with Senators Zubiri, Estrada, Revilla Jr., Tolentino, M. Villar, Ejercito, A. Cayetano, Villanueva, and Escudero as authors thereof

AN ACT

PROVIDING FOR THE MODERNIZATION OF THE PHILIPPINE INSTITUTE OF **VOLCANOLOGY AND SEISMOLOGY (PHIVOLCS) AND PROVIDING FUNDS** THEREFOR

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 "PHIVOLCS Modernization" 1 Act." 2

Sec. 2. Declaration of Policy. – It is 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 geosciences and allied sciences. The State adheres to existing treaties and international agreements related to geologic activities to which the Philippines is a signatory, to ensure international cooperation, peace and security. The State recognizes the need to strengthen the capability of government personnel tasked to monitor

volcanic and seismological activities, perform related services and provide adequate and timely 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 principal authority mandated to mitigate hazards of volcanic eruptions, earthquakes, tsunami, and other related geotectonic phenomena through reliable and accurate detection, forecast, and warning systems and to attain its vision as a center of excellence for geotectonic information services.

- **Sec. 3. Objectives**. The PHIVOLCS Modernization Program shall have the following objectives:
 - a) To upgrade physical resources and operational standards through the acquisition and development of state-of-the-art instruments, equipment, facilities and systems to enhance capabilities in providing critical, timely, accurate and reliable volcanological and seismological data and localized warning and information services for decision-support in disaster preparedness, climate change adaptation, the security and management of water resources, agriculture, transportation, health, tourism and other sectors;
 - b) To advance research and development capabilities by adopting a systematic approach and integrating all developed methodologies focused on the improvement of vital operations and specialized functions and services;
 - c) To expand volcanological and seismological monitoring stations on strategic sites in the country to broaden the base for the delivery of services in the countryside;
 - d) To strengthen a state-of-the-art data center consistent with international standards, in order to centralize the provision of volcanic, earthquake, tsunami and other related information to the public and stakeholders involved in Disaster Risk Reduction and Management (DRRM);
 - e) To facilitate the appreciation and enhance delivery of information, products and services, including education and advocacy on geoscience and geotectonic phenomena, their dangers and impacts, and the risks and vulnerabilities of communities and the different sectors of society to decision makers, national and

- local DRRM planning, media, and the general public towards sustainable socioeconomic development;
- f) To strengthen linkages and cooperation at the national level among the various providers and users of geological, seismological and other services; and
- g) To provide a more competitive base pay and benefits for the PHIVOLCS personnel to promote professionalism and commitment to the service.

Sec. 4. Definition of Terms. – As used in this Act:

7

8

9

10

- Disaster Risk the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.
- 2) *Hazard* a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.
- 3) *Risk transfer* the process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.
- 4) *Seismology* the scientific study of the sudden, violent movements of the earth connected with earthquakes.
- 5) *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.
- 6) *Volcanology* is the multidisciplinary study of volcanoes, volcanic processes, eruptions, hazards, impacts, and other related aspects including the monitoring, modeling, assessment and communication of these.
- 7) *Vulnerability* the conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

- 8) Whole-of-Government Approach an approach that instills and fosters collaboration among all the government instrumentalities both at the national and local levels toward shared sustainable development goals and outcomes.
 - 9) Whole-of-Society Approach an approach that encourages the meaningful and active participation and synergy of the different stakeholders of society toward climate change adaptation, and disaster risk reduction and management at the national and local levels.

Sec. 5. Mandate. – The PHIVOLCS is mandated to:

- Predict volcanic eruptions, earthquakes, tsunamis, and related geotectonic phenomena through reliable and accurate detection, forecast, and warning systems;
- 2) Determine how volcanic eruptions, earthquakes, tsunamis, and related geotectonic phenomena occur; the possible hazards; and the areas at risk; and
- 3) Reduce the impacts of volcanic eruptions, earthquakes, tsunamis, and related geotectonic events and enhance disaster preparedness with timely and accurate information products and services.
- **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 of the Philippines 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 Science and Technology (S&T) Services; and Administration, Finance and Information and Communication Technology Services, all with the rank and compensation of a Department Assistant Secretary, to be appointed by the President of the Philippines.
- **Sec. 7. Qualifications.** The Executive Director V must be a natural-born citizen and a resident of the Philippines; of good moral character; has an advanced degree in geosciences, engineering, or other related fields; and with at least five (5) years of

- expertise and competence in volcanology, geophysics, or allied sciences: *Provided*, That
- the Executive Director V and the three (3) Deputy Executive Directors V shall be Career
- 3 Executive Service Officers (CESOs).

- Sec. 8. Components of Modernization. The PHIVOLCS Modernization Program shall have the following components:
 - a) *Upgrade and Maintenance of Physical Resources and Operational Standards*. It shall entail the acquisition of and/or upgrade to state-of-the-art instruments, equipment, facilities, systems, and operational techniques, with emphasis on volcano, earthquake, and tsunami monitoring and disaster-resilient warning and communication system: *Provided*, That prior to such acquisition and/or upgrade, an inventory of existing government volcanological and seismological instruments nationwide shall be undertaken;
 - b) Volcano Monitoring Network and Information System Development. It shall involve sustained development of volcano monitoring networks and observatories for all active volcanoes of the Philippines, whether active or dormant, to ensure early warning of volcanic activity;
 - c) Earthquake Monitoring Network and Information System Development. It shall entail the establishment, operation, and maintenance of an advanced system for earthquake and tsunami monitoring throughout the Philippines that operates with high performance standards; gathers critical data; and effectively provides information products and services independently and directly to meet the needs of the stakeholders;
 - d) *Reliable Monitoring*. It shall ensure uninterrupted monitoring of volcanoes, earthquakes, and other related geotectonic phenomena 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;
 - e) Enhancement of Earthquake Monitoring Network for the Protection or Conservation of the Built Environment. It shall 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 critical data and information for reducing earthquake impacts on buildings and structures;

- f) Development of Forecasting Capability for Impending Major Earthquakes or Tsunami Events. It shall develop machine-learned capability to determine earthquake parameters and the resulting information will automatically be broadcast to mobile phones, social media accounts, and other platforms whenever a significant earthquake or tsunami occurs;
- g) Enhancement of Research and Development Facility. It shall involve the enhancement of research and development facilities including the establishment of state-of-the-art earthquake and volcano research laboratories, focusing on the transdisciplinary approach on the generation of knowledge for the provision of science-based recommendations;
- h) Enhancement of Public Information and Linkages with Local Government Units (LGUs) and other Stakeholders. It shall include continuous sharing of information with LGUs and other stakeholders that will help in disaster planning, preparation, and disaster mitigation, among others;
- i) Enhancement of Data and Information Dissemination Services. It shall involve the development of communication strategies to ensure the use of easily understandable local language, non-technical 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 volcanorelated information to create greater public awareness and draw appropriate response for disaster risk reduction: Provided, That the PHIVOLCS shall partner with the Komisyon sa Wikang Filipino (KWF), various Sentro ng Wika at Kultura institutions, Philippine Commission on Women, and other rights-based organizations for the development or enhancement of socially-inclusive products. The PHIVOLCS shall collaborate with public and private organizations to effectively disseminate data and products;
- j) Strengthening of the Human Resource Development Program (HRDP). The HRDP shall be aligned with the agency's strategic goals. The PHIVOLCS, in consultation

with the Department of Budget and Management (DBM), shall create new plantilla positions. The HRDP shall likewise ensure that personnel have equal opportunities for continuous learning to be competent, motivated, and rewarded.

It shall prioritize the complementation and capacity-building of a wide range of experts in volcanology, seismology, engineering, information technology, communication, social and other related sciences to efficiently develop, operate, and maintain advanced monitoring systems and distill and communicate accurate volcanic, earthquake, and tsunami information for public guidance. Support for continued professional learning shall ensure skills development and motivation that will translate to better S&T services;

- k) Provision of Risk Information. This involves the sharing of risk information with LGUs and other stakeholders that helps in the disaster planning, preparation, disaster mitigation, risk transfer, among others, to provide social and economic protection and increase resilience in times of disaster;
- International Cooperation. Enhance interaction and cooperation with the international community and ensure that the Philippines has official representation in the geoscientific community;
- m) *PHIVOLCS Hazards and Risk Information Platforms.* The PHIVOLCS shall exert sustained efforts to collaborate with the LGUs so that the agency's hazards and risk information systems, such as GeoRiskPH and Rapid Earthquake Damage Assessment System (REDAS) platforms, can be updated regularly for disaster planning, preparation, disaster mitigation, among others; and
- n) Establishment of Permanent PHIVOLCS Main Office Building and Facilities. This includes land acquisition for the Data Receiving/ Operation Centers for real-time volcano, earthquake and tsunami monitoring, among others. This shall ensure stability and protection of government investments on scientific, technical equipment and research laboratories.
- **Sec. 9. Whole-of-Government- and -Society Approach.** This Act shall be implemented using a whole-of-government- and -society approach to ensure proper and effective coordination of various aspects in disaster risk mitigation, and response across

- all areas of government policy spanning local governance, education, communication,
- 2 science and technology, among others. The PHIVOLCS shall engage with the private
- 3 sector, civil society, academic community, and other stakeholders to pursue areas of
- 4 collaboration consistent with Sec. 5 of this Act. The PHIVOLCS Modernization Program
- shall be aligned with national policies and priorities. Accordingly, the PHIVOLCS shall:

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

- a) Incorporate its latest geohazard maps and scientific studies in the appropriate
 seismic provisions in the National Structural Code of the Philippines and its future
 revisions;
 - b) In consultation with the Department of Education (DepEd) and other concerned agencies, include the teaching of volcano, earthquake, tsunami and other hazards related to geotectonic phenomena as part of the regular school curriculum;
 - c) In coordination with the Commission on Higher Education (CHED), the PHIVOLCS shall support the development and promotion of volcanology, seismology and other related courses in State Universities and Colleges (SUCs) and higher education institutions (HEIs) in communities at risk to active volcanoes, earthquakes, and tsunamis; and
 - d) Closely coordinate with Telecommunications Service Providers (TSPs) in the allocation of ports, Virtual Private Networks (VPNs), and other related facilities that will help ensure the unimpeded transmission of critical real-time data to-and-from the PHIVOLCS stations and equipment. TSPs shall delegate a PHIVOLCS counterpart that will ensure the expeditious resolution of concerns crucial to the effective implementation of this Act.
 - **Sec. 10. Collaboration or Linkages with Local Government Units (LGUs).** The PHIVOLCS shall develop and strengthen collaboration with LGUs to cover the following areas:
 - a) Disaster Risk Mitigation. In the implementation of the National Building Code of the Philippines and its IRR, the PHIVOLCS shall closely collaborate with LGUs to ensure that its geohazard maps and other research outputs are incorporated in the disaster risk mitigation plans such as the Comprehensive Land Use Plan;

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

- c) *Information Dissemination.* The PHIVOLCS shall 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 help identify gaps and dissemination problems, so that the accurate volcanic unrest, earthquake, tsunami, and related hazard information reach the intended users in a timely manner;
- d) Awareness and Promotion. The PHIVOLCS shall encourage the LGUs and other stakeholders to promote in local and international recognition programs their own interfaces with the enhanced PHIVOLCS services in order to help increase the coverage and benefits of these to the public. In collaboration with the PHIVOLCS, a regular public education and awareness campaign on the hazards of volcanic eruptions, earthquakes, tsunamis, and disaster risk reduction procedures shall be designed and implemented by the LGUs concerned, considering the special needs of different communities, such as the marginalized, the indigenous peoples and persons with disabilities. Information on volcanic, seismic, tsunami risks and measures taken if the threat of hazard is present in the area shall be simplified and made available in a commonly understood local language or dialect;
- e) Data Inputs and Exchange. The PHIVOLCS shall enlist the contribution of the LGUs in the review of local research and update of information used in DRRM. This is to ensure that the exposure database of PHIVOLCS is updated and the LGU is kept abreast with the latest information for application to their own readiness, so that appropriate guidelines are consistently crafted and that local support infrastructure to the enhanced PHIVOLCS systems are funded; and

f) Other Assistance. – The PHIVOLCS shall seek the assistance of the LGUs in the identification and acquisition of lands under their jurisdiction where new PHIVOLCS offices and/or stations for equipment shall be established.

Sec. 11. Components of the HRDP. – The HRDP component shall include:

- a) *Increase in Plantilla Positions*. The PHIVOLCS, in consultation with the DBM, shall determine the needed human resource requirements for the modernization program;
- b) New Salary Scale for PHIVOLCS Personnel. The DBM shall develop a new salary scale for the PHIVOLCS personnel in consonance with Republic Act No. 8439, otherwise known as the "Magna Carta for Scientists, Engineers, Researchers and other Science and Technology Personnel in Government", as amended, with a corresponding increase in the base pay, allowances and other benefits;
- c) *PHIVOLCS Personnel Retention Incentive*. An additional incentive to be known as the "Personnel Retention Incentive" shall be provided to qualified technical PHIVOLCS personnel, to be determined by the PHIVOLCS in consultation with DBM in an amount not exceeding twenty percent (20%) of the monthly basic salary subject to the IRR which shall be hereinafter formulated; and
- d) *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 HEIs. Cooperation on human resources upgrading and capability enhancement with regional and International organizations shall also be undertaken.
- **Sec. 12. Disaster Preparedness, Public Information and Dissemination Services.** The modernization of the PHIVOLCS shall enhance public information, education and advocacy on earthquake, tsunami and volcanic hazards and risks. To facilitate the appropriate appreciation and delivery of science-based information to target stakeholders for proper response actions before, during, and after the occurrence of these hazards, there shall be provision for:

a) Data Receiving Center (DRC). – A fully-equipped state-of-the-art DRC shall serve as
 PHIVOLCS's centralized reception, processing, visualization and dissemination hub
 for real-time earthquake, tsunami and volcano monitoring and data;

- b) Modern Learning Hub. The PHIVOLCS shall establish a Modern Learning Hub consisting of:
 - Library A state-of-the-art library that utilizes both traditional and modern research and learning facilities. The library shall continue to be updated with most recent scientific journals that are relevant to the mandates of the PHIVOLCS;
 - ii. Exhibit Area An exhibit area that can accommodate large groups and is equipped with the latest audio-visual equipment and simulation facility;
 - iii. Training Center a fully-equipped and well-staffed training center that shall 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; and
- c) Media Room. A fully-equipped media room shall be set up as a venue for press conferences and interviews.
- Sec. 13. 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) The 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.
- 2 Within ninety (90) days from the effectivity of this Act, the PHIVOLCS Modernization
- 3 Program shall be submitted to the President for approval.
- **Sec. 14. Period of Implementation**. The modernization program under this Act
- shall be implemented for a period of five (5) years: *Provided*, That payments for multi-
- 6 year contract obligations incurred under this Act may extend beyond this period:
- 7 Provided, further, That PHIVOLCS shall continue to modernize and constantly update its
- 8 operational capabilities to keep pace with best international practices.
- 9 **Sec. 15. PHIVOLCS Modernization Fund.** There is hereby created the PHIVOLCS
- 10 Modernization Fund to be used exclusively for the PHIVOLCS Modernization Program,
- which shall be sourced from the following:
- a) An amount of Seven billion pesos (Php7,000,000,000.00) shall be appropriated by
- 13 Congress under the General Appropriations Act (GAA). It shall be treated as a
- distinct and separate budget item from the regular appropriation for the DOST. For
- five (5) years following the effectivity of this Act, an amount of One billion two
- hundred fifty million pesos (Php1,250,000,000.00) per year for the first four (4)
- years shall be appropriated for the PHIVOLCS Modernization Fund, and the amount
- of Two billion pesos (Php2,000,000,000.00) shall be appropriated in the fifth year.
- The entire amount of Seven billion pesos (Php7,000,000,000.00), including any
- interest income thereon, shall be used exclusively for capital outlay; and
- b) 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, and to receive grants, bequests and
- donations, whether from local or foreign sources.
- The PHIVOLCS Modernization Fund shall be administered by the Executive Director of
- 26 the PHIVOLCS in accordance with existing government budgeting, accounting and
- 27 auditing rules and regulations.
- Sec. 16. Official Site. The PHIVOLCS shall acquire available land within the greater
- Metropolitan Manila as a first choice for establishing its new headquarters under this bill.
- 30 Alternatively, a land area, equivalent to at least five (5) hectares, which is under the

- administration of BCDA within the Clark Special Economic Zone in Tarlac, shall be allocated for the free and exclusive use of PHIVOLCS.
- **Sec. 17. Tax Exemptions**. Donations, grants, gifts, endowments, legacies, and
- 4 contributions used actually, directly and exclusively by the PHIVOLCS shall be exempt
- 5 from donor's tax and the same shall be considered as allowable deduction from gross
- 6 income for purposes of computing the taxable income of the donor, in accordance with
- 7 Section 34 (H)(2)(a) of the National Internal Revenue Code of 1997, as amended:
- 8 Provided, That such other transfers of ownership and/or possession of real or personal
- 9 properties of all kinds shall be exempt from all taxes.

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

- Sec. 18. Procurement of Scientific and Technical Materials, Equipment, and
- 11 Services. The PHIVOLCS shall adopt the most appropriate and expeditious method of
- procurement that it deems fit depending on the existing conditions and requirements that
- justify the use of a particular alternative modality provided for under Republic Act No.
- 12009, otherwise known as the "New Government Procurement Act" and its IRR.

Sec. 19. Simplification of Documentation Requirements. –

- a) Consignments of equipment sent by international collaborative research partners shall be cleared or released based on a simplified equipment declaration, which shall contain the minimum information as may be required by the Bureau of Customs (BOC), to identify the equipment and object, accompanied by a declaration of undertaking to complete the information or submit the necessary supporting documents within a specified period;
- b) The requirements for the declaration, release, and clearance for all imports of equipment by or on behalf of international collaborative research partners and any supporting documents relating thereto shall be simplified and lodged without fee;
- c) Waiver of economic prohibitions and restrictions for categories of special goods and equipment that may be indicated by the PHIVOLCS;
- d) Clearance without regard 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

- e) Immediate release of urgent and necessary monitoring equipment when there is an ongoing volcanic eruption.
- Sec. 20. 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 of the Philippines and to the Chairpersons of the respective Committees on Science and Technology of the Senate and the House of Representatives not later than June 30 of the
- Technology of the Senate and the House of Representatives not later than June
 succeeding year.
- 9 **Sec. 21. Appropriations**. The amount necessary to carry out the initial implementation of this Act shall be charged against the current year's appropriations of the DOST-PHIVOLCS. Thereafter, such 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, in consultation with relevant stakeholders, shall formulate the rules and regulations to effectively implement the provisions of this Act.
- Sec. 23. Separability Clause. If any provision or part of this Act is declared unconstitutional, the remainder thereof not otherwise affected shall remain in full force and effect.
- Sec. 24. Repealing Clause. All laws, presidential decrees, executive orders, letters of instruction, proclamations or administrative regulations that are inconsistent with the provisions of this Act are hereby repealed, amended, or modified accordingly.
- Sec. 25. Effectivity. This Act shall take effect after fifteen (15) days following the completion of its publication in the Official Gazette, or in a newspaper of general circulation.

Approved,

1