

FIFTEENTH CONGRESS OF THE REPUBLIC OF THE PHILIPPINES
HOUSE OF REPRESENTATIVES
H.B. No. 1877

INTRODUCED BY THE HONORABLE ANGELO PALMONES

**AN ACT PROVIDING FOR THE MODERNIZATION OF THE PHILIPPINE
ATMOSPHERIC, GEOPHYSICAL, AND ASTRONOMICAL SERVICES
ADMINISTRATION (PAGASA) PROVIDING FUNDS THEREFOR AND FOR
OTHER PURPOSES**

EXPLANATORY NOTE

The Philippines is constantly at risk from high-impact weather related events, such as typhoons, storm surge, floods, drought, as well as extreme climatic events like the El Niño/La Niña phenomenon. These phenomena pose serious threats to life and property. Hundreds of lives and billions of pesos worth of property are lost every year from the ravages of these disaster-causing natural hazards. There is therefore a need for a reliable national hydro-meteorological data collection, analysis and forecasting, and finally a sophisticated and faultless warning and dissemination system.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is mandated to:

- Provide forecasts on weather, flood, and other climatological conditions affecting national safety, welfare and economy and for this purpose maintain a nationwide network of monitoring stations;
- Observe, collect, assess and process atmospheric and allied data for the benefit of agriculture, commerce and industry;
- Engage in studies of atmospheric, geophysical and astronomical phenomena essential to the safety and welfare of the people as well as undertake researches on the structure, development and motion of typhoons and formulate measures for their mitigation.
- Maintain effective linkages with scientific organization here and abroad and promote exchange of scientific information and cooperation among personnel engaged in atmospheric, geophysical, astronomical and space studies.
- Undertake activities to provide an adequate manpower pool of well-trained

specialists and personnel.

Try as it has, PAGASA has yet to provide warning of severe weather and flash floods that are satisfactory to the general public. At times, the PAGASA had been able to react to events providing warnings of severe weather or flash floods after detecting these events, or after reports of actual occurrences. It has been difficult for PAGASA forecasters to predict small-scale violent weather, resulting in short lead times for warnings. The existing facilities for weather observations, information processing and communication in PAGASA are outmoded albeit functional. Most of them, by virtue of age, suffer long down-time which makes them costly to maintain. At the moment PAGASA has only four working radars and they are of the old models. The improvement of Weather Surveillance Radar System capable of monitoring wind fields and cloud formation in three dimensions, for instance, will enable the PAGASA to advance its operational activity to "nowcasting" and mesoscale meteorology at localized community areas. Currently PAGASA can forecast the occurrence of rain but could not specify the intensity of rain nor the amount of rain that will fall. In addition, PAGASA forecasters have only rudimentary computer systems to assimilate, analyze and communicate complex weather information in near real-time.

New observation and information processing systems can improve the services of PAGASA as proven in countries with modern and sophisticated weather data processing equipment and forecasting and disseminating systems. The improvement of existing weather forecasting system include the replacement of outdated equipment and facilities, acquisition of new and state-of-the-art data gathering and observation platforms such as the Doppler radar, improvement of synoptic weather stations that are scattered all over the country that gather data on temperature, rainfall, humidity, wind velocity and wind direction that are needed inputs in formulating weather forecasts and severe weather warnings.

Development of the national weather system to meet national needs efficiently depends on the application of findings of basic and applied meteorological research. Modern technology has produced numerous research tools whose coordinated-use contribute importantly to improved understanding of the meteorological processes associated with severe storm development, to more accurate weather analysis and forecasting, and to eventual beneficial modification or control of weather including severe storms. The data gathering, assessment and analysis require the specialized knowledge of well-trained weather personnel.

The PAGASA modernization program requires a human resource development component that emphasizes professional education and training. Training on the new instruments and equipment is indispensable and considerable specialization in techniques of radar data display and processing, including synthesis of radar data with other kinds of information, is required.

The different parts of the country may experience contrasting weather systems. So much so that one part of the country would be under severe weather conditions such as

typhoons while another part of the country would be enjoying fair weather. There is therefore a need for localized weather forecasting. Anent to this it is necessary to establish regional weather forecasting centers. To implement this would require the changes in the organizational structure of PAGASA.

A handwritten signature in black ink, consisting of a stylized 'J' followed by a loop and a vertical line.

Republic of the Philippines
Congress of the Philippines
Metro Manila

Fifteenth Congress
First Regular Session
1877

By Representative Angelo B. Palmones

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

ARTICLE I

Title, Declaration of Policy and Objectives

SECTION 1. *Title* - This Act shall be known as the PAGASA Modernization Act of 2010.

SECTION 2. *Statement of Policy and Objectives* – It is the policy of the State to promote and maintain peace and order, protect life, liberty and property and promote the general welfare of the people which are essential in the enjoyment of the blessing of democracy. It is the purpose of this Act to support the modernization of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) in modernizing its facilities, improve and strengthen its manpower and modify its structure for a better delivery of its services to the nation.

ARTICLE II

Definition of Terms

SECTION 3. *Definition of Terms* – For the purpose of this Act the following terms will have these corresponding definitions:

- (a) Astronomy –the science that deals with the material universe beyond the earth's atmosphere.
- (b) Atmosphere – the gaseous envelope surrounding the earth

- (c) Climate - refers to the "average" weather conditions for an area over a long period of time (e.g., the average high temperature for today's date).
- (d) Doppler radar – is a radar tracking system that determines the velocity of a moving object by measuring the shift in frequency of a radar signal reflected by the object. The shift is to higher frequency when the object approaches and to lower frequencies when it recedes.
- (e) El Niño phenomenon - the periodic warming of central and eastern tropical Pacific waters that significantly influence global weather and cause below normal rainfall or drought in the Philippines. It occurs on average every two to five years and typically lasts about 12 months.
- (f) Flood – a temporary covering by water of land not normally covered by water
- (g) Forecast – an estimation of the state of the weather at some specified future date.
- (h) Geophysical – is the study of the whole Earth by the quantitative observation of its physical properties
- (i) La Niña phenomenon – this is the cold phase counterpart of El Niño which usually cause above normal rainfall in the Philippines
- (j) Mesoscale meteorology - is the study of weather systems smaller than synoptic scale systems but larger than microscale and storm-scale cumulus systems. Horizontal dimensions generally range from around 5 kilometers to several hundred kilometers.
- (k) Meteorology – deals with the study of the atmosphere.
- (l) Nowcasting – refers to the forecasting of the weather in the 0-6 hour timeframe.
- (m) Storm – also known as thunderstorm, is a form of weather characterized by the presence of lightning and its acoustic effect on the Earth's atmosphere known as thunder.
- (n) Synoptic station – A station at which meteorological observations are made for the purposes of synoptic analysis. The observations are made at the main synoptic times of 0000, 0600, 1200, 1800 UTC and normally at the intermediate synoptic hours of 0300, 0900, 1500, 2100 UTC and are entered into a coded format for dissemination.
- (o) Typhoon – an intense tropical cyclone with wind speeds greater than 117 kilometers per hour.
- (p) Weather - The state of the atmosphere with respect to wind, temperature, cloudiness, moisture, pressure, etc. Weather refers to these conditions at a given point in time (e.g., today's high temperature).

ARTICLE III

Modernization of Equipment and Systems

SECTION 4. *Modernization Plan* – PAGASA shall develop a 5-year modernization plan that includes the strengthening of the observation/acquisition of data and information, transfer of data and information to processing centers, appreciation, processing and analysis of data and information, forecasting and distribution of information to concerned offices and institutions and feedback mechanisms for such information. The Plan shall be

endorsed by the Secretary of the Department of Science and Technology to the National Economic and Development Authority (NEDA) and approved by the Office of the President.

SECTION 5. *Acquisition of modern equipment, machines, computers and other instruments* – PAGASA shall acquire the needed equipment, machines, tools, computers and other instruments necessary to implement the 5-year modernization plan. Any such equipment or machines or instruments or computers that have to be imported shall be without tax and its importation facilitated by concerned offices such as the Bureau of Customs.

SECTION 6. *Manpower training* – The 5-year modernization plan shall have a component on manpower training that include undergraduate and graduate degree training. Scholarships shall be provided for undergraduate and graduate degree training. The University of the Philippines Los Banos is mandated, along with the Bicol University, the Central Luzon State University, the Mariano Marcos State University, the Pamantasan ng Maynila, and the University of the Visayas to offer undergraduate degree in Meteorology within three (3) years from the enactment of this Act. Other state and private universities and college may likewise offer a Bachelor of Science in Meteorology.

SECTION 7. *Structural organization of PAGASA* – To provide more accurate weather forecasting that are specific to group of regions PAGASA is authorized to establish regional service centers (RSC) in Tuguegarao City for Northern Luzon, Legaspi City for Bicol Region, Mactan for Visayas, Cagayan de Oro City or Northern Mindanao, and Davao City for Southern Mindanao. The PAGASA Central Office will service Central Luzon and Southern Tagalog for the localize forecast in addition to the provision of general forecasts and warnings for the entire country. PAGASA is further authorized to create and fill-up the needed personnel requirements for the additional service centers following established Civil Service rules and regulations.

ARTICLE IV Miscellaneous Provisions

SECTION 8. *Funding Provisions* – To implement the provisions of this Act, the amount of SIX BILLION PESOS (P6,000,000,000.00) shall be provided from the emergency funds of the Office of the President. Thereafter, funds for maintenance of equipment and for other purposes initially funded from the Six Billion Pesos but are recurring expenses shall be included in the General Appropriations Act.

SECTION 9. *Implementing Rules and Regulations* – The Department of Science and Technology and the Civil Service Commission shall promulgate the implementing rules and regulations of this Act within a period of 180 days from its approval. It shall become effective after thirty (30) days following their publication in the Official Gazette or in two (2) major daily newspapers of general circulation.

SECTION 10. *Separability clause* – If any section or provision of this Act shall be declared invalid or unconstitutional, such shall not invalidate any other section or provision of this Act.

SECTION 11. *Repealing Clause* – All laws, decrees, executive orders, rules and regulations or parts thereof which are in conflict with the provisions of this Act are hereby repealed or modified accordingly.

SECTION 12. *Effectivity* – This Act shall take effect thirty (30) days following its full publication in the Official Gazette or two (2) major daily newspaper of general circulation.

Approved