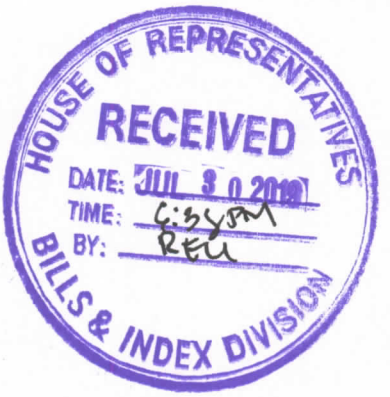
Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

EIGHTEENTH CONGRESS

First Regular Session

HOUSE BILL NO. 3180



Introduced by Honorable **ABRAHAM "BAMBOL" N. TOLENTINO**

EXPLANATORY NOTE

Climate change affects the entire world in a number of ways. It brings rising sea levels, intense heat waves, and rising temperatures. It is foreseen that climate change will become worse in the decades to come and may bring devastating effects to humanity if nothing is done.

One of the aspects of human life that will be most affected is water consumption as there will be increased precipitation and declining water quality due to natural and man-made factors, according to the Union of Concerned Scientists. This affects many sectors such as health, agriculture, and energy production, among others. Even water utilities in Asia, Europe, and Australia already anticipate this and are looking for alternative ways as supplying water is energy intensive.

It is undeniable that the Philippines is already going through water shortages. As a matter of fact, the Japan International Cooperation Agency, in cooperation with our National Water Resources Board, has foreseen a national water crisis that will affect all major cities in the Philippines by 2025. It is necessary, then, that a water research commission is created to further study and assess the effects of climate change to the

water industry and what comprehensive adaptive strategies can be made. Hence, this bill proposes an intensive research body on this area.

Water is needed in various aspects of life and access to clean and adequate water is a basic human right. In light of this, the passage of this bill is earnestly sought.

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AN ACT COMMISSIONING A RESEARCH ON CLIMATE CHANGE DRINKING WATER ADAPTATION

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

Section 1. *In General.* – The Department of Science and Technology (DOST), in cooperation with the Department of Environment and Natural Resources (DENR), shall establish and provide funding for a program of directed and applied research which will be conducted through a non-profit water research foundation. It will be sponsored by drinking water utilities to assist suppliers of drinking water in adapting to the effects of climate change.

Sec. 2. *Research Areas.* – All research conducted in accordance with this Act shall include studies into:

1. Water quality impacts and solutions, including studies:
    a. To address probable impacts on raw water quality resulting from:
        i. Erosion and turbidity from extreme precipitation events;
        ii. Watershed vegetation changes;
        iii. Increasing ranges of pathogens, algae, and nuisance organisms resulting from warmer temperatures; and
    b. On mitigating increasing damage to watersheds and water quality by evaluating extreme events, such as wildfires and hurricanes. To learn and develop management approaches to mitigate:

i. Permanent watershed damage;
ii. Quality and yield impacts on source waters; and
iii. Increased costs of water treatment;

2. Impacts on groundwater supplies from carbon sequestration, including research to evaluate potential water quality consequences of carbon sequestration in various regional aquifers, soil conditions, and mineral deposits;
3. Water quantity impacts and solutions, including research:
    a. To evaluate climate change impacts on water resources throughout hydrological basins of the Philippines;
    b. To improve the accuracy and resolution of climate change models at a regional level;
    c. To identify and explore options for increasing conjunctive use of aboveground and underground storage of water; and
    d. To optimize operation of existing and new reservoirs in diminished and erratic periods of precipitation and runoff;
4. Infrastructure impacts and solutions for water treatment facilities and underground pipelines, including research:
    a. To evaluate and mitigate the impacts of sea level rise on:
        i. near-shore facilities;
        ii. soil drying and subsidence;
        iii. reduced flows in water and wastewater pipelines; and
    b. On ways of increasing the resilience of existing infrastructure and development of new design standard for future infrastructure;
5. Desalination, water reuse, and alternative supply technologies including research:
    a. To improve and optimize existing membrane technologies, and to identify and develop breakthrough technologies, to enable the use of seawater, brackish groundwater, treated wastewater, and other impaired sources;
    b. Into new sources of water through more cost-effective water treatment practices in recycling and desalination; and

more sustainability and means to assist drinking water utilities in reducing the production of greenhouse gas emissions in the collection production, transmission, treatment, distribution, and disposal of drinking water;

10. Water conservation and demand management, including research:
    a. To develop strategic approaches to water demand management that offer the lowest cost, non-infrastructural options to serve growing populations or manage declining supplies, primarily through:
        i. Efficiencies in water use and reallocation of the saved water;
        ii. Demand management tools;
        iii. Economic incentives; and
        iv. Water-saving technologies; and
    b. Into efficiencies in water management through integrated water resource management that incorporates:
        i. Supply-side and demand-side processes;
        ii. Continuous adaptive management; and
        iii. The inclusion of stakeholders in decision-making processes; and
11. Communications, education, and public acceptance, including research:
    a. Into improved strategies and approaches for communicating with customers, decision makers, and other stakeholders about the implications of climate change on water supply; and
    b. To develop effective communication approaches to gain:
        i. Public acceptance of alternative water supplies and new policies and practices, including conservation and demand management; and
        ii. Public recognition and acceptance of increased costs.

Sec. 3. *Annual Reports.* – The DOST shall submit reports on compliance with this Act to the appropriate committees in the Senate and the House of Representatives annually for the first two years after the date of effectivity of this Act and once every three years thereafter.

Sec. 4. *Appropriations.* – The amount necessary for the initial implementation of this Act shall be charged against the appropriations of the DOST under the

current General Appropriations Act. Thereafter, such sum as may be necessary for its full implementation shall be included in the annual General Appropriations Act as a distinct and separate item.

Sec. 5. *Separability Clause.* – If any provision of this Act is held invalid or unconstitutional, the same shall not affect the validity and effectivity of the other provisions thereof.

Sec. 6. *Repealing Clause.* – Any law, presidential decree or issuance, executive order, letter of instruction, administrative order, rule or regulation contrary to or is inconsistent with the provision of this Act is hereby repealed, modified, or amended accordingly.

Sec. 7. *Effectivity.* – This Act shall take effect fifteen (15) days after its publication in the Official Gazette or in two (2) newspapers of general circulation.

Approved,