



23 JAN 30 P5:30

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

RECEIVED BY: _____

SENATE
S.B. No. 1805

Introduced by **SENATOR IMEE R. MARCOS**

AN ACT
PROMOTING THE USE OF AEROPONICS, HYDROPONICS AND AQUAPONICS
FOR THE PRODUCTION OF HIGH VALUE FISH, CROPS AND VEGETABLES,
AND FOR OTHER PURPOSES

EXPLANATORY NOTE

Despite advances in modern agriculture, which include high-tech farm mechanization, modern irrigation system, and advanced controlled environment agriculture, food production remains at the mercy of nature and is subject to various destructive elements of the changing climate.

The Philippines frequently experiences extreme weather events. Around 20 tropical cyclones or storms enter the Philippine Area of Responsibility yearly, not to mention the regular occurrence of El Niño and La Niña in the country. Based on the climate outlook of the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), El Niño may take place after June or during the latter half of 2023. Meanwhile, La Niña continues to plague the Northern Mindanao and Davao Regions, resulting in adverse impacts such as heavy rainfall, flashfloods, and landslides. The latter phenomenon is expected to continue until April 2023.

One of the main causes cited for the extremely high prices of onion in the country – to amounts so staggering that the issue of rising onion costs in the Philippines held the spotlight in a multitude of international news outlets since the past year – are the strain of extreme weather events that recently occurred in the country. Moreover, soaring prices of vegetables in general have baffled the Department of Agriculture (DA) early this year, with retail prices of cabbage reaching Php 140.00 to Php 150.00 per kilo; carrots reaching Php 100 to Php 120 per kilo; potatoes, Php 140 to Php 150 per kilo; pechay, Php 100 to Php 120 per kilo; sayote, Php 40 to Php 60 per kilo; and Baguio beans, Php 80 to Php 100 per kilo.

For these reasons, there is now massive importation of crops and vegetables, and even fish, in the country to augment local supply and tame their increasing and

erratic prices in the market. However, there have been news reports warning the public against the consumption of imported fish because it contains harmful substances and are unsafe – round scad (galunggong) tainted with formalin, and cream dory and milk fish (bangus) that are double dead.

In view of the foregoing, and with the ever-increasing population and therefore huge demand in food supply, we must utilize advanced systems to grow more food while conserving the Earth's limited resources.

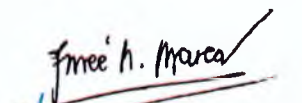
The country must devote more research and development to the use of state-of-the-art technologies aimed at improving agricultural production and ensuring food security and safety. Fortunately, new trends and innovative methods in fish and vegetable farming have evolved and is being used now locally and abroad.

Specifically, the adoption of soilless agriculture technologies such as aeroponics, hydroponics, and aquaponics are widely perceived as innovative measures to increase agricultural productivity.

Aeroponics is the process of growing plants in an air or mist environment without the use of soil or an aggregate medium. Hydroponics is the cultivation of plants by placing the roots in liquid nutrient solutions rather than in soil. Lastly, Aquaponics combines aquaculture and hydroponic plant production in a closed-loop water system that simultaneously grows both plants and fish.

This proposed measure seeks to promote the use of aeroponics, hydroponics, and aquaponics technology in agricultural production of high value fish, crops and vegetable to further increase volume of agricultural production and ensure food security and safety.

In view of the foregoing, approval of this bill is earnestly requested.


IMEE R. MARCOS

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AND FOR OTHER PURPOSES

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

1 **Section. 1. Short Title.** – This Act shall be known as the "*Soilless Agricultural*
2 *Production Act*".

3
4 **Sec. 2. Declaration of Policy.** – It is hereby declared to be the policy of the
5 State to reaffirm the fundamental right of every person to food security. The
6 attainment of self-sufficiency in the field of food production is therefore adopted as a
7 primary State policy. For this purpose, key reforms for the advancement of, and
8 support to agricultural advancement in technology adaptation are hereby promoted in
9 order to ensure the food security of the country.

10
11 Furthermore, the State commits itself to the adoption of state-of-the-art
12 technologies and the active development of modern, appropriate and cost-effective,
13 and environmentally safe agricultural technology in order to ensure and provide food
14 security and safety.

15
16 **Sec. 3. Definition of Terms.** – For purposes of this Act, the following terms shall
17 mean or be understood as follows:

18
19 "*Aeroponics*" shall refer to the process of growing vegetation in an air or mist
20 environment without the use of soil or an aggregate medium. Aeroponic growing is
21 considered to be safe and ecologically friendly for producing natural and healthy plants
22 and crop.

23
24 "*Hydroponics*" shall refer to the method of growing plants in a water based,
25 nutrient rich solution. The basic premise behind hydroponics is to allow the plant roots

1 to come in direct contact with the nutrient solution, while also having access to oxygen,
2 which is essential for proper growth.

3
4 "Aquaponics" shall refer to the integration of aquaculture and hydroponic plant
5 production in a closed-loop water system that simultaneously grows both plants and
6 fish. In a symbiotic relationship, the waste that is produced by fish in water tanks,
7 which could become toxic for the fish if not cleaned, is used directly or converted by
8 bacteria into useful nutrients for plants.

9
10 **Sec. 4. Use of Aeroponics, Hydroponics, and Aquaponics Technologies.** – The
11 Department of Agriculture (DA) is hereby mandated to promote the use of aeroponics,
12 hydroponics, and aquaponics technologies as instruments to further improve the
13 production of high value fish, crops and vegetables in the country and address food
14 security concerns.

15
16 Idle government lands owned by either national or local governments or
17 available land resources in state universities and colleges shall be considered for fish
18 farming and growing crops and vegetables using aeroponics, hydroponics, or
19 aquaponics technology, whichever is applicable.

20
21 **Sec. 5. Comprehensive Research on Aeroponics, Hydroponics, and Aquaponics**
22 **Technologies Applied in Agricultural Production.** – For purposes of this Act, the
23 Secretary of the DA is hereby mandated to conduct a comprehensive research and
24 information drive on aeroponics, hydroponics, and aquaponics technologies applied in
25 agricultural production.

26
27 The DA is further enjoined to support research activities aimed at expanding
28 the knowledge and understanding of aeroponics, hydroponics, and aquaponics
29 technologies and to invest in advance technology research in order to adopt state-of-
30 the-art technologies to promote agricultural production of high value fish, crops and
31 vegetables.

32
33 **Sec. 6. Inclusion of Aeroponics, Hydroponics and Aquaponics Technologies in**
34 **Agricultural Training.** – Aeroponics, Hydroponics, and Aquaponics technologies, as
35 used in agricultural production, shall be integrated in the academic curriculum for
36 secondary and tertiary level students of both public and private academic institutions,
37 who are studying courses on Agriculture, Practical Arts, Home Economics and/or other
38 subjects related to agriculture.

39
40 The Department of Education (DepEd), in coordination with the Commission on
41 Higher Education (CHED), shall promulgate the necessary rules and regulations for the
42 implementation of this section within ninety (90) days from the date of effectivity
43 hereof.

1 **Sec. 7. *Implementing Rules and Regulations (IRR)*.** – Within ninety (90) days
2 from the effectivity of this Act, the DA, in consultation with the Department of Science
3 and Technology (DOST), shall promulgate the necessary implementing rules and
4 regulations to implement the provisions of this Act.

5
6 **Sec. 9. *Repealing Clause*.** - All laws, decrees, orders, rules and regulations or
7 other issuances or parts thereof inconsistent with the provisions of this Act are hereby
8 repealed or modified accordingly.

9
10 **Sec. 10. *Appropriation*.** - The amount necessary to carry out the provisions of
11 this Act shall be included and incorporated in the annual general appropriations of the
12 DA, DepEd, and Commission on Higher Education (CHED).

13
14 **Sec. 11. *Separability Clause*.** – If any portion or provision of this Act is declared
15 unconstitutional, the remainder of this Act or any provision not affected thereby shall
16 remain in force and effect.

17
18 **Sec. 12. *Effectivity*.** – This Act shall take effect fifteen (15) days after its
19 publication in the Official Gazette or in a newspaper of general circulation in the
20 Philippines.

Approved,