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

HOUSE OF REPRESENTATIVES

Introduced by Representative Maximo B. Rodriguez, Jr.

House Bill No. 2587

EXPLANATORY NOTE

Successful agriculture depends on healthy soil and water. Fertile soil and clean water are both non-renewable resources in natural systems and, when managed properly, can also be renewable resources in the context of agricultural production. Soil and water are required resources for life on Earth. Most terrestrial life needs a continual source of water for sustenance and soil is an essential medium for plant growth in most terrestrial ecosystems, providing nutrients, water, physical support, and biological interactions with roots. Soil and water are closely linked in nature, impacting each other through the hydrologic, geo-chemical and energy cycles. In most cases, an impact on the soil system has a direct impact on water resources.

According to the most recent estimates of the Bureau of Soils and Water Management of the Department of Agriculture, about 38% or around 11.45 million hectares of sloping areas in the uplands are vulnerable to land degradation consist of areas classified as either moderately or severely eroded due to massive deforestation and unsustainable land management practices in the upland areas. Moreover, land degradation is a major ecological problem in the Philippines. Degraded lands are widely seen as a major contributor to the frequent occurrence of heavy and catastrophic floods in the parts of Luzon, Mindanao and the Visayas.

This legislative measure seeks to provide the conservation of soil and water resources in the country. It aims to mainstream, promote and support soil and water conservation in order to prevent and control erosion and land degradation, provide rational utilization of soil and water resources, increase farm productivity, improve ecological environment and mitigate the impacts of flood and drought.

MAXIMO B. RODRIGUEZ JR.

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

HOUSE OF REPRESENTATIVES

Introduced by Representative Maximo B. Rodriguez, Jr.

House Bill No. 2587

AN ACT
PROMOTING SOIL AND WATER CONSERVATION FOR SUSTAINABLE LAND MANAGEMENT AND IMPROVING FARM PRODUCTIVITY IN THE COUNTRY AND FOR OTHER PURPOSES

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

SECTION 1. *Short Title.* This Act shall be known as the *"Soil and Water Conservation Act of 2016".*

SECTION 2. *Declaration of Policy.* It is hereby declared the policy of the State to mainstream, promote and support soil and water conservation in order to prevent and control erosion and land degradation, provide rational utilization of soil and water resources, increase farm productivity, improve ecological environment, mitigate the impacts of flood and drought, and enhancing people's welfare

For this purpose, the State shall: a) establish and support a National Soil and Water Conservation Program; b) strengthen soil and water conservation research, development and extension; c) provide regulatory measures to conserve soil and water resources; d) identify and map vulnerable areas and land degradation hotspots as priority areas for soil and water conservation; and d) unify and strengthen the support services of the national government agencies and local government units including the provision of funding support.

SECTION 3. *Definition of Terms.* As used in this Act, the following terms shall mean:

(a) *Abandoned Mines*-refers to mines or mineral processing sites where min closure/rehabilitation was not done or incomplete and with no legal owner exists;

(b) *Critical watershed*- refers to a drainage area of a river system which supplies the major water requirements of several irrigation systems, hydro- electric dams, and domestic, as well as industrial water systems or existing facilities needing immediate protection and rehabilitation;

(c) *Land degradation* refers to the reduction or loss of the biological and economic productivity and complexity of rain-fed cropland, irrigated cropland, range, pasture, forest, and woodlands resulting from land use or from processes or combination of processes arising from human activities and habitation pattern such as a) soil erosion caused by wind and/ or water; b) deterioration of the physical, chemical, and biological or economic properties of soils, and c) long term loss of natural vegetation;

(d) *Sloping Agricultural Land Technology (SALT)* refers to a simple, applicable, low-cost method of upland farming which consists of alley farming in which field and perennial crops are grown in bands 4-5 meters wide between contoured rows of leguminous trees and shrubs;

(e) *Soil and Water Conservation* refers to the management of soil to prevent or reduce soil erosion and depletion by wind and water, and the protection, development. and efficient management of water resources for beneficial purposes;

(d) *Sustainable Land Management (SLM)* refers to the use of land resources, including soils,water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions;

(e) *Upland* refers to the extensive portion of land located within 100-500 meters above sea level, gently sloping to undulating and general temperature of > 22.5 degrees Celsius;

SECTION 4. *National Soil and Water Conservation Program*- To prevent soil erosion and land degradation, a National Soil and Water Conservation Program, herein referred to as the Program is hereby established. The Program shall foment synergies between agricultural productivity improvement and sustainable land management through mainstreaming, promotion and implementation of soil and water conservation measures. These Soil and water conservation measures shall be planned, designed and applied in the cultivation and management of agricultural lands, watershed protection, development of grazing areas, farms, forests, fisheries, mine exploration, mining, digging of wells, construction and repairs of public or private roads, canals or ditches, slope land, forest areas, agricultural and waste disposal and to prevent erosion and landslides on coasts, the riparian zones around lakes and dams and on the banks of waterways. For this purpose, the Program shall have the following components:

a) *Appraisal of the status of soil and water resources*- The Department of Agriculture (DA) through the Bureau of Soils and Water Management (BSWM) shall conduct a continuing appraisal and assessment of the status of soil and water resources which shall include but not limited to 1) soil health; 2) extent of land degradation hotspots; 3) capability and limitations of soil and water resources for meeting the current and future demands; 4) extent of adoption of soil and water conservation measures and their impacts as bright spots; and 5) priority areas for the adoption of soil and water conservation measures. The appraisal shall be undertaken in cooperation with the Department of Environment and Natural Resources (DENR) and concerned local government units (LGUs) to identify both areas of national and local concerns pertaining to soil and water conservation.

b) *Establishment of Soil and Water Conservation Guided Farms*- The Department of Agriculture through the Bureau of Soils and Water Management (BSWM), its Regional Field Offices (DA-RFOs) and the Local Government Units (LGUs) shall establish soil and water conservation guided farms at least one in agricultural areas of each barangay nationwide to showcase sustainable land management best practices such as but not limited to sloping agricultural land technology (SALT), organic-based agriculture, conservation agriculture, farm waste and residue management, wastewater recycling and re-use, rainwater harvesting or combination of two or more of these practices.

For purposes of this Act, Soil and Water Conservation Guided farms are farms established to showcase appropriate soil and water conservation technologies for possible replication and up-scaling. As an approach, they facilitate the proper implementation of soil and water conservation technologies through the provision of technical assistance in the field survey, soil and water conservation farm planning and implementation of the plan. In case of high impact areas such as watersheds, these soil and water conservation guided farms shall be established in cluster in accordance with the Soil and Water Conservation Farm Plan to be developed, farmers' capabilities and preferences, and available resources.

Potential sites shall be identified and selected, using approved site selection criteria, in coordination with concerned LGUs and farmers associations. Selected sites shall be subjected to various field surveys, bio-physical characterization, and socio-economic profiling as inputs in the preparation of Soil and Water Conservation Farm Plan, and shall be prepared in consultation with farmers based on the sites bio-physical characteristics, market potential of crops to be produced, and capability and resources of farmer-cooperators to manage the farm.

The DA Regional Field Offices (DA-RFOs) and the Agriculture Offices of the LGUs shall provide the necessary technical support and extension services to farmer-cooperators for the establishment of soil and water conservation guided farms.

c) *Establishment of Rainwater Harvesting Systems* - To collect, accumulate, and store rainwater and surface runoff for purposes of supplemental irrigation, inland fish production, and other agricultural purposes, small scale rain water harvesting program shall be formulated and implemented by the Department of Agriculture and the LGUs.

Small- scale rainwater harvesting system/structures or reservoir storage facilities with a height of not more than 5 meters and a surface area of not more than 2, 500 sq. meters shall be established in all barangays nationwide, and in cluster to store rainwater and surface runoff within a watershed.

Potential sites shall be identified and selected using approved site selection criteria in coordination with concerned LGUs and farmers associations. Selected sites shall be subjected to various field surveys, bio-physical characterization and socio-economic profiling.

The small-scale rainwater harvesting structures and its field distribution system/facilities shall be implemented in accordance with the approved engineering plans and design and the Philippine Agricultural Engineering Standards.

The BSWM and DA-RFOs shall turn over the small-scale rainwater harvesting structures to the concerned LGUs wherein said structures are located. Subject to the requirements to be set, the LGU shall accordingly entrust and delegate the operation and maintenance of structures to duly organized farmers associations as recipients. Appropriate cropping pattern and calendar that will optimize the use of stored rainwater shall be prepared by farmers with technical assistance from the LGUs.

c) *Promotion of Bio-engineering Technologies*- Bio-engineering technologies such as the use of coconet shall be promoted and applied as fender to soil erosion control, slope protection/stabilization, embankment and shore protection, and in the rehabilitations of mined areas. This shall be integrated in the design and construction of infrastructure projects of the DPWH, irrigation projects of NIA specifically on the irrigation canal linings and embankment of small water impounding projects of DA and LGUs.

Moreover, the DA and DENR in partnership with State Colleges and Universities, DOST and LGUs shall formulate and implement a National Biogas Extension Program to prevent and control ground water contamination and river pollution due to livestock and bio-waste disposal, and convert these biowaste into fertilizer and bioenergy.

d) *Aquifer Characterization and Re-Charging*- The BSWM, DA- RFOs, and the Mines and Geo-sciences Bureau of DENR shall undertake aquifer characterization in all production areas nationwide as basis in the establishment of shallow tube wells and other pump irrigation projects.

The construction of small-scale rainwater harvesting structures as provided under this Act will also form part of the program to recharge the aquifer.

e) *Water Management* – The BSWM, DA-RAEDs and LGUs shall promote among farmers to adopt appropriate water management in their farm operations based on the crop's water requirement and consumptive use, rainfall pattern and other agro-meteorological consideration, and for this purpose, shall engage the professional services of agricultural and bioystems engineers.

f) *Knowledge Management* - As a part of the National Soil and Water Conservation Program, the promotion and exchange of knowledge on soil and water conservation and sharing of lessons and experiences from the implementation of the Program shall be pursued to enable broader adoption of soil and water conservation measures and ensure program sustainability. Knowledge products such as overview books and IEC materials on soil and water conservation shall be developed. The BSWM, ATI, DA-RFOs and concerned SUCs shall formulate mechanisms and strategies to implement this knowledge management component of the Program.

SECTION 5. ***Research, Development and Extension.*** The Department of Agriculture through the Bureau of Agricultural Research (BAR) and the Agricultural Training Institute (ATI), Ecosystem Research and Development Bureau (ERDB) of the Department of Environment and Natural Resources (DENR) in consultation with concerned State and Private Universities and Colleges (SUCs), Local Government Units and other stakeholders shall formulate and implement a National Soil and Water Conservation Research, Development and Extension Program which shall :

a. Conduct of research and development (R & D) in key areas pertaining but not limited to rainwater harvesting design methods, runoff management, soil moisture conservation impacts, soil erosion vulnerability and soil and water conservation impacts assessment; and groundwater recharge enhancement.

b. Capacitate the LGUs for the provision of training and institutional development of beneficiaries and/ or cooperators of Soil and Water Guided Farms and small-scale rainwater harvesting systems prior to operation and/ or turn-over of said facilities. Farmer-cooperators and program recipients shall be organized into associations and/ or cooperatives and shall be capacitated on soil and water conservation. The BSWM, ATI and DA-RFOs shall train the LGUs on soil and water conservation, assist them in accessing available credit windows to sustain the operation and maintenance of soil and water conservation facilities to be established and facilitate the registration of such associations and/ or cooperatives for purposes of participation in the National Soil and Water Conservation Program;

c. Capacity development of agricultural engineers and soil technologists of the DA and LGUs; and

d. Establishment of Soil and Water Conservation Demonstration Farms in concerned Research and Extension Centers of BSWM, DA, LGUs and DENR;

SEC. 6. ***Soil and Water Conservation Plan*** **-** All projects and activities pertaining to mining exploration, digging of wells for pump irrigation, excavation of soils for buildings and infrastructure projects, and in cultivating slope land areas for agriculture production, as additional requirement for the issuance of Mining Permits and Environmental Clearance Certificates by DENR, Water Permit by the Water Resources Board, Building Permit, and in the accreditation for Good Agricultural Practices by the Department of Agriculture must have Soil and Water Conservation plan duly prepared and certified by a registered and licensed Agricultural Engineer. The implementation of the Soil and Water Conservation plan shall be monitored by the Department of Agriculture.

SEC. 7. ***Priority Areas for Soil and Water Conservation***- The following areas shall be mapped as priority areas for the National Soil and Water Conservation Program:

1. Critical watershed areas including reservoir watersheds
2. Areas immediately above the waterline of reservoirs and lakes; river banks side slopes of roads and canals, and other excavated or disturbed areas that need slope protection; and coastal areas;
4. Sand dune areas, beaches, and other areas which are especially susceptible to wind erosion;
5. Upland and hilly lands under agricultural cultivation and/or being utilized for production purposes;
6. Abandoned mines; and
7. Other land degradation hot spots areas identified and mapped by the BSWM.

The DA, DENR and concerned LGUs shall jointly be responsible in protecting these areas through the development and implementation of soil and water conservation programs and projects.

SECTION.8. *Creation of National Soil and Water Conservation Inter-Agency Committee-* A National Soil and Water Conservation Inter-Agency Coordinating Committee is hereby created which shall be chaired by the DA and its members are the duly designated representative from DENR, DILG, DOST, DPWH and DAR which shall oversee, coordinate, integrate and monitor the implementation of the National Soil and Water Conservation Program established under this Act. The BSWM shall serve as the Secretariat to this Inter-Agency Committee. A counterpart Regional Inter-Agency Soil and Water Conservation Committee is hereby also established in all administrative regions of the country which shall be chaired by the Regional Agricultural Engineering Division of the Department of Agriculture.

SECTION. 9. *Role of the Local Government Units-* The Local Government Units, pursuant to the provisions of the Local Government Code and through its Agricultural Engineering Division/Section shall be responsible in the planning and implementation of Soil and Water Conservation Program at the provincial, city and municipal levels, and shall:

a) Formulate Provincial, City and Municipal Soil and Water Conservation Program which shall form part in the Local Development Plans and Land Use Plans and shall be adopted and approved through an Ordinance by the Sangguniang Bayan;

b) Prepare and/or evaluate plans, designs and specifications of small water impounding projects, small farm reservoirs and other soil and water conservation structures, facilities and projects;

c) Supervise the construction, implementation, operation and maintenance of small water impounding projects, farm reservoirs and other soil and water conservation structures, facilities and projects;

d) Conduct of training and extension and promotion of appropriate soil and water conservation technologies; and

e) Evaluate soil and water conservation plans;

To effectively carry out these duties and tasks, the LGUs shall further strengthen and transform these Agricultural Engineering Division/Section into Agricultural and Bioystems Engineering Office.

SEC 10. ***Incentive Mechanism.*** In order to encourage the active participation and engagement of farmers on the Program, a market-based incentive mechanism (e.g. Payment for environmental services) shall be formulated jointly by the DA and the DENR.

Within the context of a watershed, this mechanism shall be designed to provide duly organized farmers associations or cooperatives incentives either in form of securing market access, revolving funds or favourable terms of credit, farm implements and equipment, and community benefits such as farm-to-market roads, barangay trading post, and other projects that address their needs, as a reward or payment for their improved soil and water management. As part of the mechanism, a contract agreement shall be entered between the farmers groups and the DA and DENR or private sectors that demand the services. Appropriate and acceptable incentive mechanism at the farm level shall also be formulated.

SEC 11. ***Implementing Rules and Regulations***. The Department of Agriculture together with the DENR and DILG and in consultation with other concerned agencies and stakeholders, shall promulgate the necessary rules and regulations to implement this Act within five (5) months upon the enactment of this Act.

SEC. 12. ***Appropriations.*** - The amount necessary for the initial implementation of this Act shall be charged to the budget of the Department of Agriculture and the Department of Environment and Natural Resources under the current General Appropriations Act. Thereafter, such sums as may be necessary for its continued implementation shall be included in the annual General Appropriations Act.

SEC. 13. ***Repealing Clause.*** - All laws or parts thereof, decrees, orders, rules and regulations inconsistent with the provisions of this Act are hereby repealed or modified accordingly.

SEC. 14. ***Separability Clause***. - If any of the provisions of this Act are declared invalid, the other provisions which are not affected thereby shall remain to be in full force and effect.

SEC. 15. ***Effectivity Clause.*** - This Act shall take effect immediately following its publication in a newspaper of general circulation or in the Official Gazette, whichever comes first.

Approved,