

**NATIONAL COUNTRY REPORT  
ON THE UNCCCD IMPLEMENTATION  
(PHILIPPINES)**

**ROGELIO N. CONCEPCION  
CCD FOCAL POINT FOR THE PHILIPPINES**

**INTRODUCTION**

The Philippine (Figure 1) ratified the United Nations Convention to Combat Desertification on February 10, 2000 and finally the final accession to the Convention comes into full force in May 2000. As an initial effort, this report provides an insight on the country's increasing vulnerability to drought and land degradation on account of poor watershed and land management, increasing population, and increasing recurrence of extended dry spell, and alternating incidence of El Nino and La Nina. These conditions resulted in continuing loss in soil productivity, decline in water availability, and create serious stress on the marginal lands that become the primary source of subsistence for the marginally poor farmers.

***Drought Vulnerable Areas Suffering from Seasonal Aridity and Dry Sub-humid Conditions***

While the Philippines is not within the geographic limits and do not have the conditions defined for the Convention on Desertification and Desertified Areas, there are specific areas in the northern tip of Luzon and southern tip of Mindanao that are within dry-sub-humid agricultural areas and are suffering from seasonal aridity and have clear conditions similar to desertification caused by recurrent drought.

These vulnerable areas with seasonal aridity are the major areas for food security in the Philippines. These areas are the major corn and feed grain-producing areas located within the moisture-deficit, rain shadow areas of Region 11 (General Santos City, South Cotabato, Sarangani, and portions of Davao del Sur in the southern tip of Mindanao Island) and of Region 2 in the northern tip of Luzon (Sand dunes of Ilocos Sur, significant portions of Tuguegaro in the Cagayan Valley).

The areas with seasonal aridity and within the dry sub-humid areas are specific portions of the country with dominantly sandy soils that are vulnerable to drought and have land degradation that simulate desertification processes. The seasonal aridity is accentuated by the increasing incidence of El Nino, which now follows a 2 to 3 year cycle from a 5-year interval. The mean daily temperature vary from 30 to 35 degrees C and the relative humidity ranged from 70 to 80 percent, which is much lower than in most parts of the country. Under these conditions, the soil organic matter is almost depleted (1 percent or less) and is characterized by receding groundwater and drying rivers, particularly when extended dry spell and El Nino occurs.

The range of annual growing period, based from historical analysis of rainfall and evapotranspiration analysis indicated that under normal conditions, is limited to 4 months and the remaining months suffer from severe moisture stress and is highly variable and unpredictable. During El Nino periods these areas will suffer most since dry spell would extend up to 10 months, preventing small and marginal farmers to plant their corn crops. During this extended dry spell, the soils of areas, which are generally sandy, soil moisture is unable to support normal crop growth without supplemental irrigation and the degradation of organic matter is accelerated and wind erosion predominates during the height of the dry season.

## **HOT SPOTS**

The Hot Spots refer to areas that have conditions favorable to the initiation of drought and are the major causes of land degradation in the country.

### ***Increasing Incidence of Drought, El Nino and La Nina Phenomenon***

Major drought events in the Philippines have been related to the various El Nino events. Historical records indicated that there are 13 serious El Nino events that happen within four (4) decades (1950 to 1999). The last quarter of 1982 represents the start of the most severe El Nino related drought in the country. The most recent El Nino in 1997-1998 was the most extensive in terms of coverage and has seriously affected agricultural lands and crop production and has caused widespread forest fires in the country's already derelict watershed and grassland areas. Area planted to rice decreased from 3,842,000 hectares to 3,170,000 hectares resulting in the contraction of palay output by 24.1 percent and yield per hectare by 7.9 percent. In the same manner, the area planted to corn decreased by 14.3 percent resulting in the contraction of corn output by 11.7 percent, although the yield per hectare improved slightly from 1.59 tons in 1997 per hectare to 1.62 tons per hectare during the El Nino year, 1998.

The 1997-1998 El Nino caused many rivers dried up and induced extensive destruction of watershed areas through forest fires. This event likewise resulted in drying up of many dams, notably the Angat dam which is the source of irrigation and domestic water supply of Metro-Manila. During the height of drought, the government decided to cut-off irrigation water for about 25,000 hectares located in two provinces order to ensure the water supply of Metro-Manila.

The incidence of long dry spell has affected some 10 percent or 1.05 million hectares of the country's agricultural lands. This resulted in the loss of 2.5 million mt of agricultural products. Water levels in different hydroelectric dams were observed to have gone down from October 1991 to March 1992, significantly affecting their power generation capacity. The eight-month drought in Mindanao also caused health and sanitation problems due to drying up of rivers and wells. These forced tribal communities to drink unsafe water resulting in the widespread outbreak of gastro-intestinal diseases. Forest fires induced by long dry months

were so severe. For instance, in the 1992 drought caused the burning down of a total area of 43,789 hectares of watershed areas.

### ***Active Land Degradation***

Soil erosion is the most dominant and most dynamic and active force of land degradation in the Philippines. The general extent of land damage caused by soil in the three major islands in the country shows an average of 45.6 percent of total lands are suffering from moderate (28.3 percent) and severe (17.3 percent) erosion.

Other forms of land degradation are loss of soil nutrients, river erosion, water logging, urbanization and other forms of land degradation.

### ***Volcanic Eruptions***

The Philippines has more than 200 active volcanoes, 21 of which is considered as active. There are four volcanic belts, namely Westerly Convex Volcanic Belt in Northern Luzon, Easterly convex volcanic belt from Southern Luzon, Westerly Volcanic belt in Negros and Panay Islands, Southeasterly volcanic belt in Sulu archipelago and Zamboanga Peninsula in Mindanao.

The major volcanic eruption was that of Mt. Pinatubo in June 12, 1991. This eruption resulted in the widespread coverage of volcanic ash and lahar (about 80,000 hectares of agricultural and urbanized areas) and have created a desertified, drought prone condition.

### ***Declining Arable Land and Increasing Use of Marginal Degraded Lands due to Land Conversion***

The Philippines is suffering from losses in prime agricultural lands from urbanization, construction of golf courses, housing projects, and other socio-economic development infrastructures. The net impact of these losses of prime lands is the movement of deprived, marginalized farmers into the uplands which have marginal productive potential and are seriously lacking in development facilities. Records indicated that these lands are actively degrading and can not provide even the subsistence needs of the farm families.

### ***Low Investment in Irrigation Development and Inefficient Water Technologies***

The last major irrigation system development was completed in 1980 and after that period no major investment for new irrigation systems were provided. The current efforts are dedicated to the rehabilitation of existing systems and create more investments on small irrigation systems.

## **STRATEGIES AND PRIORITIES**

The first major effort to create appropriate strategies for the Philippines is to undertake Mindanao Workshop on Drought Mitigation and Land Degradation Control on the last quarter of year 2000. The CCD, UNDP and the National Government of the Philippines will support the proposed workshop in Mindanao.

The strategies adopted by the government cover wide but inter-related actions on soil and water conservation and management. This includes:

1. More focused attention on small - scale irrigation system and major investment on rehabilitating existing national irrigation systems to improve their irrigation efficiency.
2. Shallow Tube well Development. Individual shallow wells were installed in individual farmers field as a way to augment irrigation in lowland areas not covered by the national and communal irrigation system. The total number of shallow tube wells established is 23,240, serving at least 69,720 hectares.
3. Intensive campaign for rainwater harvesting and management. The country has about 369 rainwater retention structures (small water impounding projects), which now provides water for irrigation of about 21,180 hectares of rice and other upland crops. Freshwater fish and watershed development are important outputs of the establishment of small water impounding projects. There are some 20,009 small farm reservoirs (serving 20,009 hectares) established and completed to serve individual farmers.
4. Switch to organic-based farming, using the Balanced Fertilization Strategy, which provide optimum mix of organic and inorganic fertilizers. The fertilization strategy resulted in sustained yield increase from 2.5 tons per hectare to 6 – 7 tons per hectare, and improvement in soil fertility properties.
5. Watershed Protection and Resource Management. There is now “no-logging” policy, especially in critical watershed areas.
6. Recognition of the Watershed Domain of the Indigenous Communities.
7. Encourage wider and closer participation of NGO, PO, and other private sector groups in land use and management planning.
8. Legally defining the locations and distribution of prime agricultural lands or the Strategic Agriculture and Fishery Development Zones with the ultimate aim of protecting prime lands from irrational conversion and ensuring that the best lands of agriculture are identified and set aside for the country’s agriculture modernization program.

## **ESTABLISHMENT OF A NATIONAL CONSERVATION BODY**

The prescribed National Conservation Body is not established. However, there are existing organizations, both in the private and government sectors that have concerns on land degradation and drought. There are considerable number of agencies and private organizations directly and indirectly concerned on drought and land degradation. These bodies shall be tapped to become party to the National Conservation Body.

## **INSTITUTIONAL AND POLICY FRAMEWORK**

The Philippine government has espoused the framework of Philippine Agenda 21, which subscribed to the full achievement of sustainable development. The Philippine Agenda for Sustainable Development is a multi-sectoral organization that integrates people with development and environmental protection. The participatory approach is well emphasized to ensure that all stakeholders of development and environmental management have high awareness of the plans and programs of the government.

In responding to the fundamental laws contained in the Constitution, the government promulgated supportive legislation. Such legislations describe and prescribe the specific uses for land and water resources. Following are the Republic Acts and Presidential Decrees currently enforced by the respective sectors relative to land and water utilization and management.

- a. R.A. No. 6657: comprehensive Agrarian Reform Law provides that after the lapse five years from its award, when the land ceases to be economically feasible and sound for agricultural purposes, or the locality has become urbanized and the land will have a greater economic value for residential, commercial or industrial purposes, the Department of Agrarian Reform may authorize the reclassification or conversion and deposition of the land.
- b. R.A. no. 7160: Local Government Code of 1991 states that a city or municipality may classify agricultural lands provided that there exists an approved zoning ordinance implementing its comprehensive land use plan and provided that it is within the limits prescribed thereof. It is further stated that agricultural lands maybe classified if it cease to be economically feasible and sound agricultural purposes or when the land shall have substantially greater economic values for residential, commercial and industrial purposes. Agricultural lands may be reclassified in excess of the limits for food production, human settlements, ecological considerations, and other relevant factors in the city or municipality. Cities and municipalities are also mandated to prepare and update their respective comprehensive land use plans enacted through zoning ordinances that shall be the basis for use of their resources and reclassification of agricultural lands.

- c. R.A. 8435: Agricultural Fisheries and Modernization Act of 1997 provides the delineation of Strategic Agriculture and Fisheries Development Zones (SAFDZ) within the Network of Protected Areas for Agriculture and Agro-industrial Development (NPAAAD) to ensure that lands are efficiently and sustainably utilized for food and non-food production and agro-industrialization.
- d. R.A No. 8550: The Philippine Fishery Code of 1998 provides for the achievement of food security as the overriding consideration in the utilization, management, development, conservation and protection of fishery resources and ensure the rational and sustainable management and conservation of the fishery and aquatic resources in the Philippine waters including the Exclusive Economic Zone (EEZ) and in adjacent high waters.
- e. R.A. No. 7586: National Integrated Protected Areas System Act of 1992 recognizes the critical importance of protecting and maintaining the natural biological and physical diversities of the environment notably on areas with biologically unique features to sustain human life and development, as well as plant and animal life. In this regard, the State adopts the policy to establish a comprehensive system of integrated protected areas within the classification of national park as provided for by the Constitution for the purpose of securing perpetual existence of all native plants and animals for the present and future generations.
- f. R.A. No. 8371: Indigenous Peoples' Rights Act of 1997 provides that the rights of indigenous cultural communities/indigenous people (ICCs/IPs) to their ancestral domains to ensure their economic, social, and cultural well being shall be protected and the applicability of customary laws governing property rights or relations in determining ownership and extent of ancestral domain shall be recognized by the State. Specifically, the ICCs/IPs shall have the right to develop, control and use lands and territories traditionally occupied, owned or used; to manage and conserve natural resources within the territories; benefit and share the profits from allocation and utilization of the natural resources found therein; and negotiate the terms and conditions for the exploration of natural resources among others.
- g. P.D. 705: Revised Forestry Code of the Philippines provides that the multiple uses of forestlands shall be oriented to the development and progress requirements of the country, the advancement of science and technology and the public welfare. The protection, development and rehabilitation of forestlands shall be emphasized so as to ensure their continuity in productive condition.
- h. P.D. 1067: 1976 Water Codes of the Philippines adopts a basic law governing the ownership, appropriation, utilization, exploitation, development, conservation and protection of water resources and rights to land thereto. It

provides that any watershed or any area of land adjacent to any surface water or overlaying any ground water may be declared as protected area. Rules and regulations may be promulgated to prohibit or control such activities by the owners or occupants thereof within the protected area which may damage or cause the deterioration of the surface water or groundwater or interfere with the investigation, use, control, protection, management or administrative of such waters.

- i. R.A. No. 7942: Philippine Mining Act of 1992 provides that all mineral resources in public and private lands within the territory and exclusive economic zone of the country are owned by the State. It shall be the responsibility of the State to promote their rational exploration, development, utilization and conservation through the combined efforts of government and private sector in order to enhance rational growth in a way that effectively safeguards the environment and protect the rights of affected communities.
- j. R.A. 7638: Department of Energy Act of 1992 provides that the State shall ensure a continuous, adequate, and economic supply of energy with the end in view of ultimately achieving self-reliance in the country's energy requirements through the integrated and intensive exploration, production, management and development of the country's growth and economic development and taking into consideration and active participation of the private sector in the various areas of energy resource developments.
- k. R.A. No. 7916: The Special Economic Zone Act of 1995 provides that the State shall actively encourage, promote, induce, and accelerate a sound and balanced industrial, economic and social development of the country in order to provide jobs to the people especially those in rural areas, increase their productivity and their individual and family income, and thereby improve the level and quality of their living conditions through the establishment of special economic zones in suitable and strategic locations in the country and through measures that shall effectively attract legitimate and productive foreign investment.
- l. R.A. No. 7279: Urban Development Housing Act of 1992 provides for the rational use and development of urban land to bring about; 1) equitable utilization of residential lands in urban and urbanizable areas; 2) optimization of the use and productivity of land and urban resources; 3) development of urban areas conducive to commercial and industrial activities; 4) reduction in urban dysfunction, particularly those that adversely affect public health, safety and ecology; and 5) access to land and housing by the underprivileged and homeless citizens.

- m. P.D. 1586: Environmental Impact Statements provides the establishment and institutionalization of a system whereby the exigencies of socio-economic undertakings can be reconciled with the requirements of environmental quality. It also caused for the declaration of certain projects, undertakings or areas in the country as environmentally critical. For this purpose, the proper land and water use pattern for the areas of said critical projects shall be prepared.

## **NATIONAL ACTION PROGRAMS**

The National Action Programs of the Philippines has not been formulated as of to-date. However, the Action Program will subscribe to the inclusion of various programs that will be addressed to mitigating drought and land degradation and ensuring that the desertification process is not allowed to occur in any parts of the country. The National Action Program will include the following concerns.

- \* Improvement of Economic Environment
- \* Conservation of Natural Resources
- \* Improvement of Institutional Organization
- \* Information Campaign on character and impacts of Desertification, Drought and Land Degradation
- \* Monitoring and Evaluation on the Effects of Drought and land degradation.

Figure 1 Political Map of the Philippines