

Third Country Report on the UNCCD Implementation* (2003-2005)

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* National workshop for the validation of the third country report will be held on the second week of June 2006

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Annex 1. UNCCD Country Profile

1. Executive Summary (in table form)

1.1. Focal point institution

Name of focal point	Dr. Rogelio N. Concepcion Bureau of Soils and Water Management (BSWM)
Address including e-mail address	Office address: corner Visayas Avenue, Elliptical Road, Diliman, Quezon City, Philippines E-mail address: rogerconcepcion@yahoo.com
Country-specific websites relating to desertification	

1.2 Status of NAP

Date of validation	June 17, 2004 Government organizations: Department of Agriculture (DA)-Agriculture and Fisheries Information Service; DA-Planning Service, DA-Information Technology Center for Agriculture and Fisheries (ITCAF), DA-Agricultural Training Institute (ATI), BSWM, Bureau of Agricultural Research, DA-Regional Field Unit (RFU) I, II and II, National Irrigation Administration, National Nutrition Council, Department of Agrarian Reform (DAR), Department of Environment and Natural Resources (DENR), Philippine Council for Agriculture, Forestry and Natural Resources Research and Development Non-government organizations (NGOs): Haribon Foundation Inc. Philippine Peasant Institute (PPI) Academe: University of the Philippines at Los Baños (UPLB), Central Luzon State University (CLSU)
NAP review (s)	June 21, 2004 (Mindanao workshop) June 23, 2004 (Visayas workshop) August 11, 2004 (National conference)
NAP has been integrated into the poverty reduction strategy (PRSP)	Currently under way
NAP has been integrated into the national development strategy	Currently under way
NAP implementation has started with or without the conclusions of partnership	Yes (NAP has become a convergence program among the four departments: DA, Department of Science and Technology (DOST), DENR and DAR)

agreements	
Expected NAP validation	Already completed
Final draft of a NAP exists	Yes
Formulation of a draft NAP is under way	Yes (Already completed)
Basic guidelines for a NAP have been established	Yes (Already completed)
Process has only been initiated	Yes (Already completed)
Process has not yet started	Yes (Already completed)

1.3. Member of SRAP/RAP

Name of subregional and/or regional framework	Involvement specifically in topics such as water harvesting techniques, soil erosion etc.
1. <i>Subregional Action Program for Southeast Asia</i>	(The Philippines is involved in the preparation of the SEA-SRAP and is co-chair of the proposed Thematic Program 2: Transboundary Watershed Assessment and Management
2. <i>Regional Action Program for Asia</i>	Thematic Program No. 2: Agroforestry and Soil Conservation Thematic Program No. 4. Water Resources Management through the establishment of rainwater harvesting system and small irrigation system

1.4. Composition of the NCB*

- In the formulation of the Philippine National Action Plan, issues and concerns on land degradation are discussed by an informal body consisting of representatives invited by the BSWM from other offices of DA, DENR, DAR, DOST, academe and NGOs. The same body with more expanded membership was involved in the formulation of the NAP in consultation with national, subnational (regional) and local stakeholders.
- The creation of the formal multi-agency committee to oversee the activities relating to the Convention will take place in conjunction with the creation of an appropriate oversight body to coordinate the programs and activities of the UN Conventions and Multi-lateral Environmental Agreements. The creation of these activities is one of the outputs of the Medium-sized Project (MSP) proposal 'Strengthening Coordination for Effective Environmental Management' which will be implemented on August 2006.

1.5. Total Number of NGOs accredited in the process: four (4)

Haribon Foundation for Conservation of Natural Resources

Philippine Peasant Institute (PPI)

Soil and Water Conservation Foundation

Philippine Sustainable Development Network

Has an NGO National Coordinating Committee on desertification been established; if yes, how many NGOs or civil society organizations participate in it?	<i>No</i>
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1.6. Total number of acts and laws passed relating to the UNCCD: nine (9)

Title of the law	Date of adoption
1. Pollution Control Law	<i>1976</i>
2. Philippine Environmental Policy (Presidential Decree 1151)	<i>1977</i>
3. Philippine Environment Code (Presidential Decree 1152)	<i>1977</i>
4. Environmental Impact Assessment System (Presidential Decree 1586)	<i>1978</i>
5. Comprehensive Agrarian Reform Law or Republic Act 6657	<i>1988</i>
6. National Integrated Protected Areas System or Republic Act 7586	<i>1992</i>
7. Agriculture and Fisheries Modernization Act (AFMA) or Republic Act 8435	<i>1997</i>
8. Ecological Solid Waste Management Act (Republic Act 9003)	<i>2000</i>
9. Wildlife Resources Conservation and Protection Act (Republic Act 9147)	<i>2001</i>

1.7. The consultative process

Initial activities for the establishment of partnership with international organizations particularly the United Nations Development Program (UNDP) and Global Environmental Facility is on going but there is no official title of the partnership yet.

List of consultative meetings on UNCCD implementation

Name of consultative meeting	Date/year	Donor countries involved	International organizations or agencies
1. Stakeholders' Consultation Workshop for the PDF B Proposal "Combating Land Degradation and Poverty in Marginal Areas and Communities of the Philippines"	December 13, 2005	None	United Nations Development Program (UNDP); Global Environment Facility
2. Stakeholders' Consultation Workshop for the MSP "Strengthening Coordination for Effective Environmental Management"	March 17, 2006	None	United Nations Development Program (UNDP); Global Environmental Facility

1.8 Ten (10) projects currently under implementation which are directly or indirectly related to the UNCCD

Name of project	Project implemented within the framework of the NAP/SRAP?	Project implemented within the framework of	Timeframe	Partners involved	Overall budget
1. Multifunctionality of Agriculture in Selected Sites in the Philippines	Yes		2003-2006	DA-BSWM, Local Government Units (LGUs); farmers	\$ 103,952
2. Enhancing Agricultural Production in the Philippines by Sustainable Use of Shallow Groundwater	Yes		2004-2007	DA-BSWM, Australian Center for International Agricultural Research-CSIRO, DENR, National Irrigation Administration, DA-Regional Field Units (DA-RFUs)	\$ 399,790
3. Organic-based Agriculture (“Agrikalikahan”) Development Program	Yes		2006-2007	DA-BSWM, Government of Japan, National Agriculture and Fisheries Council, GMA Program Directorate, Fertilizer and Pesticide Authority, DA-AFIS, DA-RFUs, Bureau of Agriculture and Fisheries Product Standards, ATI, Bureau of Agricultural Research, Bureau of Postharvest Research and Extension, Bureau of Plant Industry, DA- Agricultural Marketing Assistance Services	\$ 4,315,789
4. Community-based Watershed Management Approach in Improving Livelihood Opportunities in Selected Areas of the Philippines	Yes		2005-2007	DA-BSWM, Bureau of Agricultural Research, International Center for Research in Semi-arid Tropics, Federation of Free Farmers, DA-RFUs, LGUs, academe (ISPSC, BSC)	\$ 87,720
5. Integrated Watershed Management for Sustainable Soil and Water Resources Management of the Inabanga Watershed, Bohol Island, Philippines	Yes		2002-2006	DA-BSWM, ACIAR-University of Western Sydney, Philippine Council for Agriculture, Forestry and Natural Resources Research and Development, Department of Environment and Natural Resources, Water Research Foundation, Bohol Agricultural Promotion Center, LGUs	\$ 549,992 (\$250,741 from the Government of Australia; \$ 299,251 from the Government of the Philippines)
6. Agrarian Reform Community Development	Yes		2003-2007	Department of Agrarian Reform (DAR), DA,	<i>World Bank Total:</i>

Name of project	Project implemented within the framework of the NAP/SRAP?	Project implemented within the framework of	Timeframe	Partners involved	Overall budget
Project Phase II				Department of Public Works and Highways (DPWH)	\$ 65,766, 077 FOREX: \$50,152,135 Local: \$ 15,613,942
7. Diversified Farm Income and Market Development Project	Yes		2004-2009	DA, DAR, DENR, LGUs, DA-RFUs	World Bank Total: \$60,000,000
8. Northern Mindanao Community Initiatives Resource Management Project	Yes		2003-2008	DAR, DAR and DENR	IFAD: SDR 11,600
9. Sustainable Environmental Management Project in Northern Palawan	Yes		2001-2009	DA, DENR, Department of Tourism (DOT), DPWH, DAR	JBIC: JPY 2,034,000,000
10. Help for Catubig Agricultural Advancement Project	Yes		2002-2011	Department of Agriculture (National Irrigation Administration), DAR, DENR, DPWH, Department of Health (DOH)	JBIC: JPY 5,210,000,000

2. Introduction

The Philippines is well endowed with rich natural resources and is known to host biologically diverse habitats composed of universally unique biological plants and animal life. In addition, the agricultural lands of the Philippines are very fertile and productivity enabling our farmers to plant different crops throughout the year. However, because of natural, human-induced and policy-induced factors that includes poor drainage, volcanic eruptions, extensive use of chemical fertilizers, increasing demand for human settlement, and poor enforcement of land use policies and monitoring of land use conversion, incidence of land degradation and drought has become a prominent and recurring environmental problem.

It was estimated that about 45% of the arable lands in the Philippines have been moderately to severely eroded triggering the movement of subsistence farmers in fragile ecosystems. Likewise, approximately 5.2 million hectares are seriously eroded resulting to 30-50% reduction in soil productivity and water retention capacity making the lands vulnerable to recurrent drought and El Niño phenomenon. Another type of land degradation aside from soil erosion is soil mining caused by long term use of urea alone. It has resulted to serious nutrient imbalance expressed in terms of depleted soil P, K and micronutrients like zinc. The net impact of soil mining is the increased cost of fertilization and decrease in farmers' income.

Recognizing the worsening problem of land degradation and drought that is closely linked to poverty, the Philippine Senate and House of Representatives jointly ratified the United Nations Convention to Combat Desertification (UNCCD) on February 10, 2000 and final accession came into full force in May 10, 2000. The membership of the Philippines to the Convention and acknowledgment of the occurrence of desertification is based on the premise that the Philippines along with other ASEAN countries experience the emerging climatic phenomenon attributed to the increasing recurrence cycle of El Niño and seasonal aridity or seasonal extreme dryness.

In response to the worsening problem on land degradation and in compliance with the UNCCD requirement for each country party to draft the National Action Plan, the Philippines through its Focal Agency initiated series of consultation workshops and meetings to formulate the Philippine National Action Plan to Combat Desertification, Land Degradation, Drought and Poverty. In 2004, the NAP was finalized and signed by the department secretaries. The Philippine NAP is envisioned to serve as a convergence program among the four departments: Environment and Natural Resources, Agriculture, Agrarian Reform and Science & Technology. Relevant projects and activities have been undertaken after the Philippine NAP formulation and will be discussed in detail in the latter portion of the report. Aside from accomplishments, some constraints encountered in implementing the Convention will be also tackled as part of the exercise on national report formulation.

This Third Country Report covers FY 2003-2005 and its formulation is guided by the following mandates from the UNCCD.

- *Inform the Parties to the Convention of the situation of each country Party in regard to the measures taken for the implementation of the UNCCD;*
- *Assess the progress made towards achieving the objectives of the Convention and to enable the Convention of Parties (COP) to make appropriate recommendations to better pursue the objectives of the Convention;*

- *Contribute in strengthening the institutional and human capacities of national focal points and national coordinating bodies;*
- *Improve the ability to coordinate the work and to motivate further actors and stakeholders to pursue the effective implementation of the UNCCD as an integral part of national efforts to promote sustainable development and global environmental protection.*
- *Address policy measures and institutional development for the Convention's implementation; and*
- *Focus on measures and significant development in the sub-regional and regional action programmes (SRAPs/RAPs).*

3. Formulation of the Philippine National Action Plan to Combat Desertification, Land Degradation, Drought and Poverty

As a country party to the UNCCD, the Philippines is required to formulate and submit the National Action Plan to Combat Desertification. On Part III (Action Programmes, Scientific and Technical Cooperation and Supporting Measures), Section 1 (Action Programs), Article 9&10 of the UNCCD guides the formulation of the NAP.

- The affected country party shall prepare, make public and implement national action program (NAP), utilizing and building, to the extent possible, on existing relevant successful plans and programs and sub-regional and regional action program, as the central element of the strategy to combat desertification and mitigate the effects of drought.
- NAP shall specify the respective roles of government, local communities and land users and the resources available and needed. They shall, inter alia:
 - incorporate long-term strategies to combat desertification and mitigate the effects of drought, emphasize implementation and be integrated with national policies for sustainable development;
 - allow for modifications to be made in response to changing circumstances and be sufficiently flexible at the local level to cope with different socio-economic, biological and geo-physical conditions;
 - give particular attention to the implementation of preventive measures for lands that are not yet degraded or which are only slightly degraded;
 - enhance national climatological, meteorological and hydrological capabilities and the means to provide for drought early warning;
 - promote policies and strengthen institutional frameworks which develop cooperation and coordination, in a spirit of partnership, between the donor community, governments at all levels, local populations and community groups, and facilitate access by local populations to appropriate information and technology;

- provide for effective participation at the local, national and regional levels of non- governmental organizations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organizations, in policy planning, decision-making, and implementation and review of national action programmes;
 - require regular review of, and progress reports on, their implementation.
- NAP may include, inter alia, some or all of the following measures to prepare for or mitigate the effects of drought:
- establishment and/or strengthening of early warning systems
 - strengthening of drought preparedness and management
 - establishment and/or strengthening of food security systems
 - establishment of alternative livelihood projects
 - development of sustainable irrigation program for both crops and livestock

Taking these guidelines into account, the Philippines through the BSWM started the preparation of the Philippine National Action Plan to Combat Desertification, Land Degradation, Drought and Poverty. The Philippine NAP focuses not only on the rehabilitation of degraded lands and prevention of land degradation but also in the alleviation of poverty. This is in recognition of the fact that the most obvious impact of desertification, land degradation and drought is poverty. In the Philippines alone, in year 2000, 4.3 million families or 26.5 million Filipinos were living below the poverty line. It is interesting to note that most of them are living in the rural, upland and degraded lands. In addition, high poverty incidence level could be observed in Mindanao (Region IX to XII, ARMM and CARAGA) since it is the most vulnerable to drought and suffer most from extended dry spell brought by El Niño including regions experiencing seasonal aridity and massive land degradation and those that are classified under Type I climate.

In 2004, after receipt of the fund from UNCCD Secretariat, the program formulation activity started with a planning session to conceptualize the process flow. During this session, it was agreed upon that the multi-level and multi-institutional approach would be used in the development of the Philippine NAP. In Figure 1, it is shown that public sector composed of national & regional government agencies, local government units, urban dwellers and community members; and private sector and non-government organizations should harmonize their interests and initiatives in order to formulate an action plan that will reflect the real situation of land degradation in the country and identify the role of each stakeholder in implementing activities on sustainable land management.

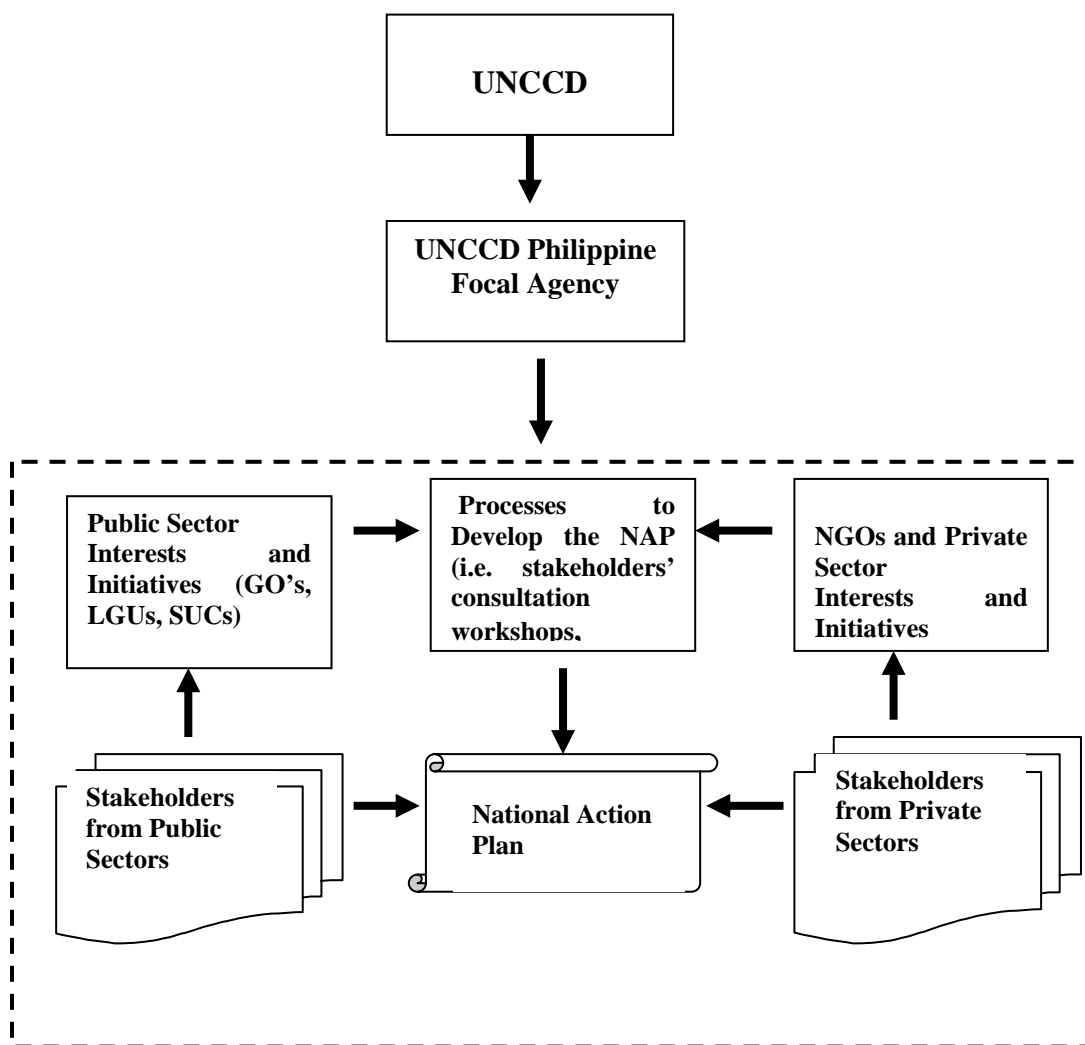


Figure 1. The Philippine NAP Process Flow

To initiate the participatory approach in Philippine NAP formulation, a roundtable discussion participated by technical experts in the fields of land degradation assessment, natural resource management, socio-economics and water resources management was held to review previous and current sustainable land management strategies to establish benchmark information on the efforts made to combat desertification, drought and land degradation. After the series of roundtable discussions, island-wide consultation workshops (Luzon, Visayas and Mindanao) were conducted to determine the issues and concerns of the stakeholders on land and water resources management. The outputs from these island wide workshops have been very crucial in the identification of the extent of land degradation problems inasmuch as they vary in each island. This was followed by the National Conference wherein the proposed program components of the NAP was presented to the policy and decision makers, experts, members of the academe and non-government organizations. Since the NAP is a convergence program, it was presented to the Secretaries of the four major departments namely: Agriculture, Agrarian

Reform, Science and Technology and Environment and Natural Resources. The NAP was revised and finalized based on their comments and recommendations. In August 2004, the official Signing Ceremony for the NAP was held and participated by the four departments. The summary of the consultation workshops, conferences and meetings are described as follows.

Table 1. Experts' meetings, consultation workshops and conferences conducted to facilitate the formulation of Philippine NAP

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
February 13, 2004	1 st round table discussion	BSWM, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Central Luzon State University ▪ Department of Agriculture-Regional Field Unit 2 ▪ Department of Environment and Natural Resources ▪ National Economic and Development Authority ▪ National Nutrition Council ▪ University of the Philippines Diliman ▪ University of the Philippines Los Banos
May 25, 2004	2 nd round table discussion	BSWM, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Central Luzon State University ▪ Department of Agriculture-Regional Field Unit 2 ▪ Department of Environment and Natural Resources ▪ National Economic and Development Authority ▪ National Nutrition Council ▪ Philippine Peasant Institute ▪ University of the Philippines Los Banos
June 03, 2004	3 rd round table discussion	BSWM, Quezon City	<ul style="list-style-type: none"> ▪ Agricultural Training Institute ▪ Bureau of Agricultural Research ▪ Bureau of Plant Industry ▪ Bureau of Soils and Water Management ▪ Central Luzon State University ▪ Department of Agrarian Reform ▪ Department of Agriculture-Regional Field Unit 1 ▪ Department of Agriculture-

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
			<ul style="list-style-type: none"> Regional Field Unit 2 ▪ Department of Agriculture-Regional Field Unit 3 ▪ Environment and Management Bureau-DENR ▪ Environment Resources Development Bureau-DENR ▪ Haribon Foundation ▪ Protected Areas Wildlife Bureau-DENR ▪ Foreign-Assisted and Special Projects Office-DENR ▪ National Economic and Development Authority ▪ National Nutrition Council ▪ OILS-ASIA ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development ▪ Philippine Peasant Institute ▪ Planning Service-DA ▪ Philippine Society of Soil Science and Technology ▪ University of the Philippines Diliman ▪ University of the Philippines Los Banos
June 17, 2004	4 th round table discussion	BSWM, Quezon City	<ul style="list-style-type: none"> ▪ Agriculture and Fisheries Information Service-DA ▪ Agricultural Training Institute ▪ Bureau of Agricultural Research ▪ Bureau of Soils and Water Management ▪ Central Luzon State University ▪ Department of Agrarian Reform ▪ Department of Agriculture-Regional Field Unit 1 ▪ Department of Agriculture-Regional Field Unit 2 ▪ Department of Agriculture-Regional Field Unit 3 ▪ Department of Environment and Natural Resources ▪ Haribon Foundation ▪ Information Technology Center for Agriculture and Fisheries-

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
			DA <ul style="list-style-type: none"> ▪ National Irrigation Administration ▪ National Nutrition Council ▪ Philippine Peasant Institute ▪ Planning Service-DA ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development ▪ University of the Philippines Los Banos
June 21, 2004	Mindanao Consultation	Davao City	<ul style="list-style-type: none"> ▪ Autonomous Region of Muslim Mindanao Integrated Agricultural Research Center-DA ▪ Bureau of Soils and Water Management ▪ Department of Agrarian Reform- Reg. 11 ▪ Department of Agriculture-Autonomous Region of Muslim Mindanao ▪ Department of Agriculture-Regional Field Unit 9 ▪ Department of Agriculture-Regional Field Unit 11 ▪ Department of Environment and Natural Resources- Reg. 11 ▪ Local Government Unit-Zamboanga City ▪ National Economic Development Authority-Reg. 11 ▪ Northern Mindanao Integrated Agricultural Research Center-DA ▪ Office of the Provincial Agriculturist, Davao del Sur ▪ Office of the Provincial Agriculturist, Davao del Norte ▪ Southern Mindanao Integrated Agricultural Research Center-DA ▪ University of the Philippines Los Banos ▪ University of the Philippines Mindanao

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
			<ul style="list-style-type: none"> ▪ University of Southern Mindanao
June 23, 2004	Visayas Consultation	Cebu City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Department of Agrarian Reform- Reg. 7 ▪ Department of Agriculture- Regional Field Unit 7 ▪ Department of Environment and Natural Resources-Reg. 7 ▪ Leyte State University ▪ National Economic Development Authority-Reg. 7 ▪ Office of the Provincial Agriculturist, Tagbilaran City ▪ Soil and Water Conservation Foundation ▪ University of the Philippines Visayas ▪ University of the Philippines Los Banos
July 05, 2004	Meeting with top officials of R&D Institutions	BAR, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Agricultural Research ▪ Bureau of Soils and Water Management ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development
July 12, 2004	Presentation to Secretary Luis Lorenzo of the Department of Agriculture	OSEC-DA, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Department of Agriculture
July 15, 2004	Presentation to Secretary Elisea Gozun of the Department of Environment and Natural Resources	OSEC, DENR, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Forest Management Bureau ▪ Department of Environment and Natural Resources
July 19, 2004	Presentation to Undersecretary Susan Leones of the Department of Agrarian Reform	USEC, DAR, Quezon City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Department of Agrarian Reform
July 30, 2004	Presentation to	OSEC, DOST,	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
	Secretary Estrella Alabastro of the Department of Science and Technology	Taguig	<ul style="list-style-type: none"> Management ▪ Department of Science and Technology ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development
August 11, 2004	National Conference	BSWM, Quezon City	<ul style="list-style-type: none"> ▪ Agricultural Training Institute ▪ Bureau of Soils and Water Management ▪ Central Luzon State University ▪ Department of Agrarian Reform ▪ Department of Agriculture-Regional Field Unit 1 ▪ Department of Agriculture-Regional Field Unit 2 ▪ Department of Agriculture-Regional Field Unit 7 ▪ Environmental Management Bureau-DENR ▪ National Economic Development Authority ▪ National Irrigation Administration ▪ National Nutrition Council ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development ▪ Philippine Information Agency ▪ Philippine Peasant Institute ▪ Planning Service-DA ▪ Protected Areas Wildlife Bureau-DENR ▪ Soil and Water Conservation Foundation ▪ University of the Philippines Diliman ▪ University of the Philippines Los Banos ▪ University of the Philippines Visayas ▪ University of Southern Mindanao
August 12, 2004	Official Signing Ceremony of the Philippine National Action Plan	Makati City	<ul style="list-style-type: none"> ▪ Bureau of Soils and Water Management ▪ Department of Agrarian Reform ▪ Department of Agriculture ▪ Department of Environment

DATE	ACTIVITY	VENUE	PARTICIPANG AGENCIES/ORGANIZATIONS
			and Natural Resources <ul style="list-style-type: none"> ▪ Department of Foreign Affairs ▪ Department of Science and Technology ▪ GMA Channel 7 ▪ Philippine Council for Agriculture, Forestry and Natural Resources Research and Development ▪ Philippine Sustainable Development Network

Forty (45) agencies from various sectors were involved in the preparation of the Philippine NAP. Thirty-four (34) are from the government sector, seven (7) from the academe and four non-government organizations. Stakeholders' involvement in the Philippine NAP is summarized as follows:

Government organizations:

National: BSWM, DA (ITCAF, AFIS, Planning Service); NNC, ATI, BAR, BPI, NIA, DENR, EMB, PAWB, FASPO, DAR, DOST, PCARDD, NEDA (15)

Sub-national (Regional): DA-RFU I, II, III, VII, XI, ARMM; DA-ARRMIARC, NOMIARC, SMIARC; DAR-Reg. XI, VII; NEDA-Reg. XI, VII; DENR-Reg. XI, VII (15)

Local: Local Government Unit-Zamboanga City, Office of the Provincial Agriculturist-Davao del Sur, Davao del Norte, Bohol (4)

Academe:

UP Diliman, UPLB, UP Mindanao, UP Visayas, Leyte State University, Central Luzon State University, University of Southern Mindanao

Non-government organizations:

Philippine Peasant Institute, Haribon Foundation, Soil and Water Conservation Foundation, Philippine Sustainable Development Network

During the consultation workshops and meetings conducted, the non-government organizations contributed valuable insights on the thematic program components of the Philippine NAP. The mission and activities of these NGOs are described below.

- Philippine Peasant Institute (PPI) is a farmer-based, research and advocacy NGO serving as a support institution for small farmers and has built a reputation as a credible source of information on peasant, agriculture, agrarian reform and rural development issues.

- Haribon Foundation for the Conservation of Natural Resources is committed to the Conservation of Philippine biodiversity through community empowerment and scientific excellence. As stated in its website, Haribon aims to build a constituency for environmental issues that will call for prioritizing conservation actions on habitats and sites, based on solid scientific and socio-economic research. It has four core strategies: Saving Sites, Saving Species, Working with People and Advocacy. This organization became an important NGO during the consultation workshop for the formulation of NAP inasmuch as they are also working on seasonally arid areas where rich biodiversity could be found.
- :
- Soil and Water Conservation Foundation is dedicated to promote environmental education and biodiversity conservation in the Visayas region. One of its projects is the protected landscape development project which involves biodiversity conservation within and adjacent to the Rajah Sikatuna National Park in Sierra Bullones through developing community-based ecotourism opportunities while building the capacity of local residents and officials to manage various ecosystems and resources. SWCF is also working on Karst landscapes in Bohol province, which is also one of the priority areas cited in the Philippine NAP since these areas have limited access to fresh water.
 - Philippine Sustainable Development Network is a non-stock, non-profit corporation composed of organizations that are actively involved in the pursuit of sustainable development. It services a distinct group of individuals and organizations that are actively involved in the pursuit of sustainable development by providing easy access to information. The PSDN is an information technology systems integrator with services ranging from system design, provision of full internet access, Network (LAN, Intranet) installation, training, creation of Home Pages, maintenance of Web Sites, and metadatabase.

In the actual writing of the Philippine NAP, its character and development framework including the thematic programs and program components were drafted. These were reviewed and revised after the consultation and validation workshops. The character of the Philippine NAP is described as: a) water-centered, poverty linked action plan; b) in synergy with the UNCBD and UNFCCC; c) supportive of the multi-sectoral community stakeholder consensus decision making; d) considers knowledge-based productivity improvement (integrated local knowledge and culture with modern technology formulation; and e) provides role for the harmonization of government actions/initiatives. Moreover, the Philippine NAP is linked with the United Nations Millennium Development Goal (MDG) since it also deals with reduction of poverty incidence in marginalized and degraded areas of the country.

The Philippine NAP's overall development framework centered on sustainable agriculture, forestry and rural development with focus on water provision and technology based on and guided by community initiatives, participatory learning and planning for the Filipinos now and in the future which clearly reflects the long-term goal of maintaining natural resource productivity while increasing farm productivity and alleviating poverty incidence. Working on this framework, the Philippine NAP emphasizes the critical value of water in sustaining land productivity and provides conscious effort to ensure both quality and quantity of water resources and how they impact on the final quality of safe food products. It focuses on highly degraded

lands and critical watershed areas located in vulnerable areas. The vulnerable areas experienced seasonal aridity and usually these are under the Type I climate, which has distinct wet and dry seasons; moderately degraded areas under Type III climate and selected El Niño/drought prone areas under Type II and Type IV climate.

The goal of the Philippine NAP is to mainstream agriculture and rural development programs that will prevent the incidence and spread of desertification and land degradation in deprived communities living in seasonally arid degraded lands. Three of its major objectives include: a) to establish ecosystem-based technology options for the development and protection of fragile landscapes and vulnerable communities; b) to institutionalize the community initiative for local area development and c) to harmonize and systematize enabling policies and implementation strategies with a view of developing legislations for productivity improvement of degraded lands.

The Philippine NAP has two thematic programs: sustainable agriculture and marginal uplands development; and integrated ecosystems development. For sustainable agriculture and marginal uplands development, it will cover the formulation of mitigation measures against desertification processes in some irrigation systems, arresting of soil nutrient depletion and water pollution, precision agriculture, management of Karst water, establishment of small water retention structures, establishment of Farmers' Participatory Learning Centers and Conservation Farming Villages and enhancement of home gardens. On the other hand, for integrated ecosystems management, it will focus on promotion and development of community-based wilderness agriculture and local governance-community partnerships in managing degraded and critical multiple watersheds. The Philippine NAP is also divided in five program components: land and water technology development; local governance and community initiatives; database development and harmonization; information, education and communication (IEC); and enabling policy development.

4. Strategies and measures established within the context of the Convention

To initiate the institutionalization of the NAP as convergence plan of action of the national government, the secretaries of the four departments (Agriculture, Agrarian Reform, Science and Technology and Environment and Natural Resources) signed the National Cooperation and Endorsement for the subsequent implementation of the Philippine NAP. These departments pledged their commitment to support the NAP's goals, objectives and program components to combat land degradation and drought, and reduce their impacts on land productivity, natural resources, environmental health and rural poverty. The Philippine NAP was integrated into the Medium Term Public Investment Program (2004-2010) of the Department of Agriculture. For the other three agencies that signed the covenant, mainstreaming of the NAP into their own regular budget is in process.

On the other hand, it is one of the objectives of the UNCCD to establish close implementation synergy with other relevant UN Conventions. Thus, in the development of the Philippine NAP, the working group also looked into the National Biodiversity Strategic Action Plan (NBSAP)

and National Action Plan on Climate Change (NAP-CC) to determine gaps, relevant concerns and possible project collaboration in terms of research, development and extension and capacity building. To fully attain harmonized implementation of the programs under the three conventions, the UNCCD Philippine Focal Point, Bureau of Soils and Water Management, collaborated with the DENR's Protected Areas and Wildlife Bureau and Environmental Management Bureau, the Focal Points of UNCBD and UNFCCC, respectively to propose a project on strengthening institutional coordination capacity of the three (3) Focal Points in implementing Multilateral Environmental Agreements (MEA). Hence, the MSP proposal 'Strengthening Coordination for Effective Environmental Management (STrEEM)' was drafted under GEF's multi-focal area and considered as an offshoot of the recently completed National Capacity Self Assessment (NCSA) project. It is under the GEF operational program, Enabling Activity and strategic priority, Cross-cutting Capacity Building. The GEF Agency for this project is the United Nations Development Program. It is currently in the pipeline and will be implemented in the latter part of 2006.

It is envisioned that the STrEEM project would improve the implementation of the country's obligations to the three conventions through cost-effective, sustainable and participatory mechanisms of coordination among the key actors and stakeholders. This project is expected to produce two major outcomes: a) an enabling policy environment that will realize the harmonization of mandates and activities of focal point agencies and their partner organizations is established and implemented; b) mechanisms and processes to ensure effective operationalization of the MEA related activities are established and implemented.

Another relevant strategy established is co-sponsoring activities related on combating desertification, land degradation and drought in partnership with the Focal Points of other UN Convention. The UNCCD Philippine Point collaborated with DENR-PAWB, Focal Point for CBD in organizing the forum on 'Restoring biodiversity of degraded habitats and drylands: Combating Desertification, Land Degradation, Drought and Poverty' which served as an avenue to:

- a.) share and exchange information on the current and upcoming programs and projects of the government and other institutions related to the prevention of desertification, land degradation and drought;
- b.) point out the gaps in program implementation and recognize the areas of collaboration among the DA-BSWM, DENR and other partner environmental NGOs on these concerns.

The theme of the event 'Protecting Biodiversity in Drylands: Achieving the 2010 Target' is very timely since it complements with the declaration of CY 2006 as International Year of Deserts and Desertification.

5. Participatory and consultative processes in support to project conceptualization, planning and implementation

To accelerate the implementation of the Philippine NAP and solve the problem of budget limitations faced by the departments in carrying out programs on combating land degradation, the UNCCD Focal Point has initiated series of activities to provide a strong basis for resource mobilization. Starting last quarter of 2004, discussion with different donor agencies and presentation of the Philippine NAP is taking place to inform them of the intention of UNCCD Focal Point to implement thematic programs on sustainable agriculture and marginal uplands development and integrated ecosystems management. Workshops and meetings with experts on land and water resources management was also carried out to facilitate the initial formulation and packaging of project proposals.

In 2005, the proposed Full Scale Project (FSP) 'Combating Land Degradation and Poverty in Marginal Areas and Communities of the Philippines' was drafted through the guidance of UNDP. The proposal is under GEF Operational Program 15, Sustainable Land Management inasmuch as it is designed to improve the enabling policy environment, strengthen the capacity of institutions and human resources, improve land productivity and socioeconomic well-being of farming communities, and protect, conserve and improve the environmental conditions in vulnerable agro-ecosystems and forest ecosystems. Moreover, it falls within Strategic Priority, SLM2, Implementation of Innovative and Indigenous Sustainable Land Management Practices. It has four components: a) enabling policy environment; b) institutional capacity building; c) SLM technology and farming practices and d) vulnerable area mapping and implementation of action programs.

The over-all objective of the proposed FSP (which will be further refined during the PDF-B implementation this August 2006) is to mainstream agriculture and rural development programs in the national and local development plans and programs to prevent the incidence and spread of desertification and land degradation in seasonally arid and erosion prone lands cultivated by deprived communities, and at the same time to improve agricultural productivity and increase income of vulnerable communities.

To attain the foregoing objective, the FSP will follow a holistic and participatory cross-sectoral approach for addressing Sustainable Land Management (SLM) by mainstreaming SLM concerns into national development plans and programs and will involve all the key stakeholders in the project design and implementation process. It will also build on baseline activities undertaken and currently being undertaken by national, regional and local government agencies, non-government organizations, farmers, local stakeholders and private sector. Likewise, the FSP's components will be implemented in synergy with the UNCBD and UNFCCC taking into consideration biodiversity conservation and carbon sequestration to combat desertification and land degradation.

Details of the final outcomes and outputs of the FSP will be further refined during the PDF-B implementation. But at present, the expected outcomes and outputs of the FSP are described as follows:

Outcome 1. An enabling policy environment for the implementation of the NAP and SLM is clearly established and operationalized

Outputs:

- Legislation, policy issuances and instruments for the prevention and management of land degradation are drafted and advocated
- Policies, regulations and instruments to improve land tenure systems and land classification and distribution are developed and implemented in priority areas and communities
- Coordination, statutory and customary mechanisms for the key agencies is institutionalized and partnership with NGOs, Pos, academe and private sector is established and/or strengthened.
- Sustainable land management programs are integrated into national, subnational/regional and local environmental management and development plans
- Guidelines on sustainable land management for various types of agro-ecosystems are established and adopted by key actors
- Concerns and strategies of biodiversity conservation and climate change are integrated into sustainable land management programs
- Appropriate economic instruments to promote soil and water conservation are formulated and pilot tested in selected critical areas

Outcome 2. Institutional capacity of the focal point agency and its key partners in the implementation of the NAP and SLM is strengthened

Outputs:

- Key personnel of implementing agencies trained on appropriate processes, methodologies, approaches, tools, techniques and technologies who will promote sustainable land management
- Building up of knowledge among partner agencies in their joint implementation of sustainable land management programs including drought and flood preparedness and mitigation
- Institutionalized organizational mechanisms at all levels (national, regional, provincial, municipal) are established to scale up and sustain the efforts and resources in identified areas and marginal communities
- Increased institutional access to information on SLM capacity, learning materials and knowledge products
- Established and upgraded facilities necessary for learning, early warning systems, monitoring and other pertinent activities to promote SLM

Outcome 3. Farm level demonstration of sustainable land management practices in selected strategic sites established and operationalized and technology packages for farming organizations and the private sector are disseminated

Outputs:

- Farmer-centered and participatory learning centers on sustainable land management established and operationalized in selected strategic sites
- Efficient early warning systems on drought mitigation and land degradation control and prevention are established in the pilot areas

- Soil fertility restoration and enhancement methods and technologies are demonstrated and disseminated in the pilot sites comprising of various ecosystem types
- Soil and water conservation methods and technologies (water harvesting, farming systems, soil erosion control) are demonstrated and disseminated in the pilot sites comprising of various ecosystem types
- Forest and rangeland/pasture management technologies are developed and piloted in priority sites and communities
- Indigenous knowledge systems relating to sustainable resource utilization are documented and disseminated
- Best management practices and appropriate technologies on SLM are documented, published and replicated in target communities and areas
- Community initiatives on SLM are institutionalized with the assistance of local agency partners (NGOs, Pos, LGUs, MAOs, PAOs, Municipal Agrarian Reform Offices-MAROs, Community Environment Natural Resources Offices-CENROs and Provincial Environment Natural Resources Offices-PENROs)

Outcome 4. Land degradation and drought vulnerable areas and communities are identified and sustainable land management mechanism and action programs are implemented

Outputs:

- GIS-aided maps on drought hotspots, soil fertility critically deficient areas, heavily eroded and highly erosion-prone areas, salinity prone areas, prime agricultural lands, critical watersheds and biodiversity priority areas highly threatened by land conversion and denudation are prepared and disseminated
- Sustainable land management mechanisms and action programs are formulated and integrated into DA, DENR and DLR development plans and budget and the LGUs Comprehensive Development Plan, Comprehensive Land Use Plan with budget allotment included in their investment plan
- Program and project level criteria and indicators to monitor the performance and impacts of sustainable land management interventions are established and operationalized
- Economic, social and environmental impacts of sustainable land management programs and initiatives on vulnerable areas and communities are monitored and evaluated at all levels
- Areas such as small island provinces which are prone to desertification are studied, inventories and mapped for management planning and action programming purposed

In December 2005, the BSWM spearheaded the stakeholders' consultation workshop to review the components, outcomes, outputs, incremental activities and collaborating agencies of the aforementioned FSP. Participants of this workshop include government agencies, academe and non-government organizations. Other participants include representatives from UNDP. In the opening ceremony, Mr. Randall Purcel, Regional Technical Advisor for Land Degradation & International Waters of GEF-UNDP-RCB discussed the overview of GEF programs and budget cycle.

During the workshop, the participants were separated into four groups and they reviewed the components, expected outcomes & outputs, collaborating agencies and incremental activities of the FSP. Several revisions were made in the FSP based on the workshop results. An open forum

was also carried out to discuss the key issues and barriers on the implementation of existing and future programs on combating land degradation and drought. Issues and barriers identified by the participants include: land tenure and land titling process, inadequate capacity on management of forest resources, pending legislations/bills on land allocation and land use planning, weak convergence and harmonization of government efforts, deforestation of critical watershed areas and limited IEC programs on mitigation of drought and land degradation.

6. Relevant Projects Implemented within the Context of UNCCD

Several research, development and extension, and capacity building projects have been implemented that will contribute to the goal of combating, desertification, land degradation, drought and poverty. Among these programs and projects are the following:

7.1. Organic-based Agriculture Development ('Agri-kalikasan') Program

Most farms in the Philippines are heavily dependent on inorganic fertilizers to the extent that our concept of high yield for a given cropping season will only be attained using these external inputs. Moreover, farm wastes are improperly managed and nutrient management strategies are not widely applied in many parts of the country. These practices have resulted to some socio-economic, environmental and food system problems that became very evident in the last years of the 20th century. Since farmers have no revolving capital to finance his or her increasing production cost, they have resorted to borrowing capital from traders thereby putting them in the chain of heavy debt burden and even deeper to the mire of poverty. Census reports have shown that our small farmers, particularly those who are living in marginal and degraded lands, are the poorest people in the society with very low purchasing power.

In response to the above-mentioned consequences of heavy reliance on chemical inputs, other options are being explored to reduce the cost of production associated with conventional agriculture and ensure food security and food safety. One of the best options currently available is Organic-based Agriculture that aims to ensure the long-term capacity of the natural resources base to sustain the economic, social and environmental services of the various agricultural lands of the country.

The Government of Japan funded the 'Organic-based Agriculture Agri-kalikasan' program under the KR2 (Increasing Food Production Program) in 2005. Currently on its first year of implementation, it is described as a science-based back-to-basic sustainable agricultural and rural development program that advocates the implementation of organic-based farming guided by scientific principles. It promotes safe and judicious use and proper mixtures of oil-based chemical fertilizers and recycled composted home and farm wastes, small and large animal manures, guano deposits, green manures, and other forms and natural sources of soil ameliorants and organic fertilizers.

This program has two (2) major components and three (3) crosscutting programs.

1. Provincial Level Integrated Program
 - Integrated Organic-based Agriculture “Agri-kalikasan” Model Farms
2. Municipal Level Component Programs
 - Tipid Abono and Balanced Fertilizer Program
 - Rice Composting and Nutrient Recycling
 - Community-based Contract Composting and Waste Management
 - Organic Upland Farming and Home Biogarden Development
 - Farm Level Soil Analysis Program

Crosscutting Programs

- Capacity-building and Advocacy Development
- Information, Education and Communication Campaign
- Monitoring and Evaluation of Organic Fertilizers and Organic-based products

At present, the program focuses on the ‘Tipid Abono’ or Balanced Fertilization Strategy and Modified Rapid Straw Composting, which are launched nationwide and implemented in several provinces of the Philippines. It is expected that farmers’ income will increase alongside with the improvement of soil productivity and prevention of soil mining. Moreover, its focus on arresting soil nutrient depletion in the strategic zones of agriculture located in seasonally arid areas conforms to the first thematic program of the Philippine NAP: Sustainable Agriculture and Marginal Uplands Development under the Land and Water Technology component.

7.2. Community-based Watershed Management in Improving Livelihood Opportunities in Selected Areas of the Philippines

This project is implemented in collaboration with the International Center for Research in Semi-arid Tropics and Bureau of Agricultural Research together with the Federation of Free Farmers (an NGO) and local government units. There are four sites located in different areas of the country: Doña Remedios Trinidad, Bulacan; Talibon, Bohol; San Clemente, Tarlac and Ilocos Sur.

The general objective of this project is to improve livelihood opportunities through watershed management. Specific objectives are as follows: a) to promote sound soil and water conservation and management technologies in minimizing land degradation through community participation; b) to promote technologies and conduct of training to minimize land degradation through community –based approach; c) to provide employment opportunities for local community through various natural resource-based livelihood activities and d) to empower rural community with technical know-how on sustainable watershed management. The major activities involve community organization and management, community resource assessment, establishment of farmer-managed trial displaying the available and appropriate technologies for watershed management mainly in water harvesting and cropping system, conduct of trainings, lectures and demonstration on soil and water conservation measures and technologies, farming practices and marketing

strategies; and strengthening of linkages among organizations, agencies, government units and rural communities.

It is expected that at project completion, in year 2007, there will be a 30% increase in farmers' income, significant improvement in natural resources productivity and empowered community in terms of carrying out soil and water conservation approaches in their respective area. The project's framework falls under the development of sustainable agriculture in the marginal uplands and capacity building components of the Philippine NAP that will contribute to the overall goal of prevention of land degradation and rehabilitation of degraded lands.

7.3. Multi-functionality of Agriculture in Selected Sites of the Philippines (Phase II)

This project is funded by the ASEAN-MAFF Japan and will be completed in August 2006. It is implemented in three sites: Talugtog, Nueva Ecija; Guimaras and Tagaytay, Cavite.

The project's general objective is to evaluate the various functions of agriculture in selected areas of the country. Aside from the function of food production, agriculture has also environmental functions that include fostering groundwater recharge, soil conservation and flood prevention. Likewise, it has socio-economic and agri-tourism functions. In addition to assessment of multi-functionality of agriculture, this project looked into the enhancement of agriculture through rainwater harvesting system such as the small water-impounding project (SWIP). It provides a good estimate of the equivalent monetary value of agriculture's multi-functionality across the agricultural landscape it covers.

This project is very relevant with the Philippine NAP inasmuch as it focuses in the role of rainwater harvesting system in improving farm productivity and generating relevant information on other functions of agriculture like agri-tourism, which will serve as an input on sustainable land and water resources management and improvement of livelihood opportunities in seasonally arid areas.

7.4. Enhancing Agricultural Production in the Philippines through the Sustainable Use of Shallow Groundwater

The project is a collaboration between the Bureau of Soils and Water Management and the Australian Center for International Agricultural Research. It is implemented in one of the seasonally arid areas of the country, Ilocos Norte, where there is an insufficient surface and unpredictable rainfall.

It is in line with the scope of the NAP since it emphasizes the critical value of water in sustaining land productivity and covers areas experiencing seasonal aridity. Likewise, the project's objectives enumerated below focuses on community initiatives and area development; and provide conscious effort to ensure both quality and quantity of water resources.

- Assess current and potential role and benefits of shallow groundwater use for agricultural production in rainfed lowlands;

- Identify strategies to ensure sustainable use of shallow groundwater;
- Pilot test and modify aquifer storage and recovery (ASR) systems to suit sandy aquifers in the Philippines;
- Implement appropriate management strategies at two pilot sites (Burgos and Pasuquin, Ilocos Norte), in cooperation with local government units, to enhance sustainable crop production;
- Communicate and promote project results at local and national levels to facilitate broader adoption and strengthen/advocate for related policy formulations.

The project will be implemented from 2004-2007. At the end of the project, expected outputs include: a) report including data on current resource potential, use, value of dependent production; b) demand management and recharge enhancement strategies and actions developed with and for local government units and policy/decision makers; c) report on pilot test of ASR with reference to application in the Philippines; d) on-ground activities/infrastructure development to enhance production in service area at two pilot sites and e) training materials on groundwater management for extension personnel and policy papers on sustainable use of shallow groundwater for consideration of policy makers at the various levels of governance.

7.5. Integrated Watershed Management for Sustainable Soil and Water Resources Management of the Inabanga Watershed Bohol Island, Philippines

This project is implemented in the largest watershed of the Bohol Island and the agricultural land constitutes more than 50% of the watershed. Thus, it conforms to the coverage of the NAP, which are the critical watersheds as priority areas that served as both the requirements of agriculture and the environment. Likewise, the implementation strategy is multi-institutional involving government agencies (DA-APC, DA-RFU VII, DENR-PENRO and CENRO, NIA, BAPC), NGOs (BANGON, PPDO), LGUs and farmer representatives.

Before project implementation, the area is beset with several issues and concerns that have grave impacts to its environmental and socio-economic conditions which include poor farming practices, decline in farming productivity, decline in water quality of the river system, reduced economic return for the farmers and reduced efficiency of Malinao dam to supply water for irrigation. To effectively address these problems, the objectives of the project are drafted as follows to: a) examine the current land and water resources of the Inabanga watershed; b) evaluate the extent of soil erosion, sedimentation and water quality problems in the Inabanga watershed; c) understand socio-economic issue that impact on the agricultural sustainability of the Inabanga watershed; d) evaluate different options and impacts for water resource uses in the watershed; e) enhance research capacity of staff in the BSWM/DENR and local collaborators and f) transfer research outputs to soil and water resources to stakeholders at the Inabanga watershed.

With the attainment of these objectives, the following outputs will be generated after project completion in June 2006.

- Improvement in farm productivity, soil and water quality
- Increase in farmers' adoption of Best Practices and technologies on soil and water resources management
- GIS framework that incorporates runoff and erosion model results, sediment loads, cropping and inputs from farmers and Landcare collaborators
- Socio-economic report and database for the upper Inabanga watershed
- Report ranking options for water resources uses in the upper Inabanga watershed on a basis of sustainability and potential for farmers' adoption

Annex 1. UNNCD Country Profile

PHILIPPINES

This UNCCD country profile has been provided by:

Name of focal point institution/ministry/office: Bureau of Soils and Water Management

Date: May 31, 2006

Mailing address: Bureau of Soils and Water Management, corner Visayas Ave., Elliptical Road, Diliman, Quezon City, Philippines

Telephone: +63 923-0454 Telefax: +63 920-4318 E-mail: rogerconcepcion@yahoo.com

Biophysical indicators relating to desertification and drought

1. Climate

1.1. Index of aridity ¹

1.2. Normal rainfall

2 373 mm/year (1961-1990)

1.3. Rainfall standard deviation

Region	Sub-national areas	mm
CAR	Baguio City, Benguet	3877.9
1	Dagupan City, Pangasinan	2391.7
	Laoag City, Ilocos Norte	1997.9
	Vigan, Ilocos Sur	2308.6
2	Aparri, Cagayan	1966.3
	Basco, Batanes	2870.5
	Tuguegarao, Cagayan	1707.2
3	Cabanatuan, Nueva Ecija	1950.1
	Clark Airport, Pampanga	2141.6
	CLSU, Muñoz, Nueva Ecija	1980.0
	Subic Bay, Olongapo	3686.4
	Iba, Zambales	3610.1
4-A	Alabat, Quezon	3261.8
	Ambulong, Batangas	1950.8
	Baler, Quezon	3339.1
	Casiguran, Quezon	3617.7
	Infanta, Quezon	4150.1
	Sangley Point, Cavite	1986.0
	Tayabas, Quezon	3149.0
4-B	Calapan, Oriental Mindoro	2141.5
	Coron, Palawan	2466.6

¹ The index of aridity is the ratio P/PET; P=precipitation, PET=potential evapotranspiration. Climatic zone maps to be annexed if available in a scale of 1/million.

	Cuyo, Palawan	2299.9
	Puerto Princesa, Palawan	1514.1
	Romblon, Romblon	2015.4
	San Jose, Occidental Mindoro	2354.8
5	Daet, Camarines Norte	3287.0
	Legaspi City, Albay	3489.4
	Masbate, Masbate	2020.6
	Virac Radar, Catanduanes	3617.2
	Virac Synop, Catanduanes	2918.0
6	Iloilo City, Iloilo	2194.4
	Roxas City, Aklan	2028.8
7	Dumaguete City, Negros Oriental	1200.6
	Mactan International Airport, Cebu	1519.4
	Tagbilaran City, Bohol	1360.2
8	Catarman, Northern Samar	3390.7
	Catbalogan, Western Samar	2680.0
	Guiuan, Eastern Samar	2809.7
	Maasin, Southern Leyte	1830.8
	Tacloban City, Leyte	2495.8
9	Dipolog, Zamboanga del Norte	2318.8
	Zamboanga, Zamboanga del Sur	1216.1
10	Cagayan de Oro, Misamis Oriental	1568.0
	Lumbia Airport, Misamis Oriental	1654.4
	Malaybalay, Bukidnon	2741.0
11	Davao City, Davao del Sur	1772.8
12	General Santos, South Cotobato	952.6
NCR	NAIA, Pasay City	1759.9
	Port Area, Manila	2205.4
	Science Garden, Quezon City	2532.3
CARAGA	Butuan City, Agusan Del Norte	2026.0
	Hinatuan, Surigao del Sur	4295.3
	Surigao, Surigao del Norte	3556.4
ARMM		

2. Vegetation and land use

2.1. NDVI (normalized difference vegetation index)

2.2. Vegetation cover (% of total land area)

86 (as of CY 2000)

2.3. Land use (percent of total land)

99.39%

Land Use	1990 – 1999	2000 – 2005
Arable crop land	5,367,060 ha ¹	5,665,230 ha ¹
	Irrigated	1,550,000 ha ²
	Rainfed (non-irrigated areas)	1,554,122 ha ³
Pasture	3,817,060 ha	4,111,108 ha
	1,192,000 ha ⁴	1,500,000 ha

Forest and Wood	6,676,000 ha ²	5,789,000 ha ²
Other Land	16,581,940 ha	16,862,770 ha

¹ <http://devdata.worldbank.org/query/>

² <http://www.cia.gov/cia/publications/factbook/geos/rp.html>

³ [http://www.un.org/esa/population/publications/countryprofile/Philippines 2001](http://www.un.org/esa/population/publications/countryprofile/Philippines%2001)

⁴ [http://www.landcoalition.org/\(1996\)](http://www.landcoalition.org/(1996))

⁵ http://earthtrends.wri.org/searchable_db/index.php

2.4. Surface albedo² _____

3. Water resources

3.1. Fresh water availability (million m ³)	479,000
3.2. Fresh water resources per capita (m ³)	6,332 (CY 2000)
3.3. Agricultural water use (million m ³)	21,100 (CY 2000)
3.4. Industrial water use (million m ³)	2, 690 (CY 1998-2002)

4. Energy

1. Consumption

4.1. Energy use per capita (kg oil equivalent)	546.3 (CY 2001)
4.2. Agricultural energy use per hectare (millions of BTU)	0.96 (CY 1999)

Production

2. Energy from renewables excluding combustible renewables and waste (% of total supply)	22.4% (CY 2002)
<i>http://www.bcse.org.au/docs/International/BCSE</i>	

Renewables – Consumption by sector

4.4. Industry (% of total renewable consumption)	30% (CY 1999)
4.5. Residential (% of total renewable consumption)	21.3%
4.6. Agriculture (% of total renewable consumption)	2.3%
<i>(Source: http://earthtrends.wri.org/pdf_library/country_profiles/ene_cou_608.pdf)</i>	

² Surface albedo map to be annexed if available.

5. Types of land degradation

Type of Degradation	1990-1999		2000-2005	
	Million ha	Percent of Total Area	Million ha	Percent of Total Area
3. Soil Constraints				
4. Soil with Hydromorphic properties	3.4	12		
5. Low CEC (Cation Exchange Capacity)	0.2	1		
6. Al toxicity	7.7	26		
7. High P fixation	1.5	5		
8. Vertic Properties	0.7	3		
9. Salinity	0	0		
10. Sodicity	0	0		
11. Shallowness	1.9	6		
12. Erosion Risk	18.2	62		
B. Human-induced land degradation				
1. Water Erosion caused by deforestation	23.7	79		
2. Salinization due to irrigation			0.3	1

Source: <http://www.fao.org/ag/agl/agll/terrastat/wsr.asp>

Type of Degradation	1990-1999		2000-2005	
	Million ha	Percent of Total Area	Million ha	Percent of Total Area
1. Topsoil Erosion	18.13	60.63		
2. Loss of Soil Nutrients and/or Organic Matter	1.03	3.45		
3. River Erosion	0.085	0.28		
4. Flooding	0.42	1.39		
5. Water Logging	0.099	0.33		
6. Urbanization, Built-up areas and industry	0.50	1.66		
7. Other Soil Degradation	0.47	1.57		

Source: SOTER/ASSOD Studies, Philippine NAP

6. Rehabilitation

Lands under rehabilitation	1990-1999	2000-2005
Rehabilitation of degraded crop land (km ²)		
Rehabilitation of degraded rangeland (km ²)		
Rehabilitation of degraded forest (km ²)	50,403.42	

Socio-economic indicators related to desertification and drought

13. People and economy

7.1. Population (total)	<u>82.1 million (CY 2003)</u>
▪ Population: urban (percent of total)	<u>62.4% (CY 2003)</u>
▪ Population: rural (percent of total)	<u>37.6% (CY 2003)</u>
7.2. Population growth (annual %)	<u>1.8% (CY 2004)</u>
7.3. Life expectancy (years)	<u>69.92 (CY 2003)</u>
7.4. Infant mortality rate (per 1,000 live births)	27 (CY 2003)
7.5. GDP (current US\$)	86.4 billion (CY 2004)
7.6. GNI per capita (current US\$)	1,170.0 (CY 2004)
7.7. National poverty rate (% of population)	15 (CY 2000)
7.8. Crop production (metric tons)	19,910 (CY 2004)
7.9. Livestock production (metric tons)	2,418,000 MT (CY 2001)

<http://apps.fao.org/>

14. Human development

8.1. Primary education completion rate (% age group)	95.21 (2003)
8.2. Number of women in rural development (total number)	3166000 (2003-2007)
8.3. Unemployment (% of total)	8.1 (2006)
	http://www.census.gov.ph/data/pressrelease/2006/
8.4. Youth unemployment rate (age 15-24)	19 % (2001, unstats.un.org)
8.5. Illiteracy total (% age 15 and above)	4.9 (2001)
	http://hdr.undp.org/reports/global/2003/indicator
8.6. Illiteracy male (% age 15 and above)	7.46 (2000)
8.7. Illiteracy female (% age 15 and above)	7.35 (2000)

15. Science and technology

16. Number of scientific institutions engaged in desertification-related work (total number)	5
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10. Please specify the data sources

<http://devdata.worldbank.org/query/>

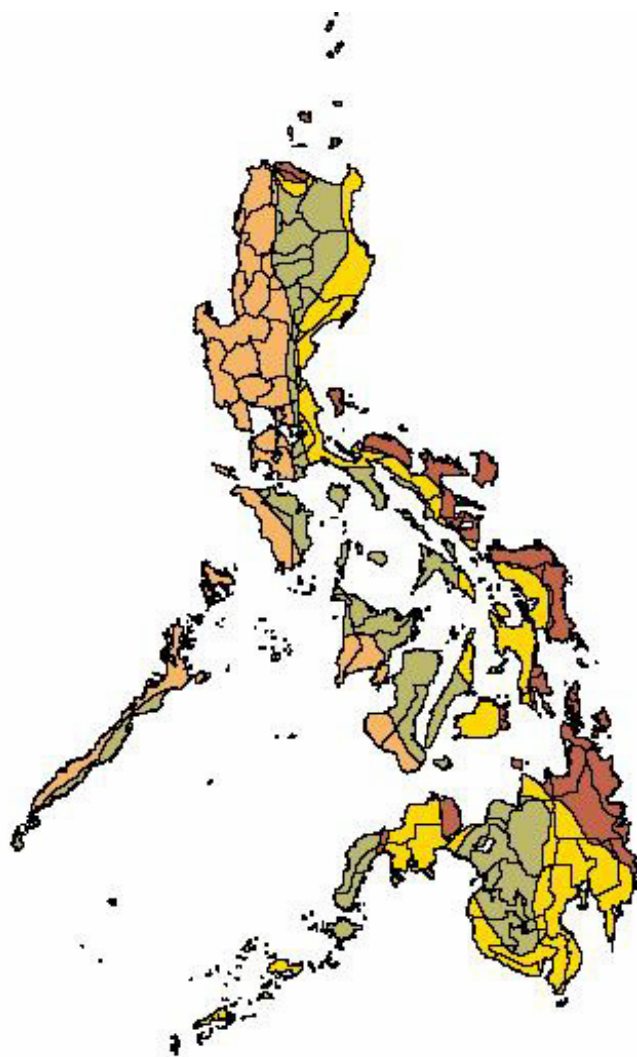
<http://www.cia.gov/cia/publications/factbook/geos/rp.html>

[http://www.un.org/esa/population/publications/countryprofile/Philippines 2001](http://www.un.org/esa/population/publications/countryprofile/Philippines%202001)

[http://www.landcoalition.org/\(1996\)](http://www.landcoalition.org/(1996))

http://earthtrends.wri.org/searchable_db/index.php
http://earthtrends.wri.org/pdf_library/country_profiles/ene_cou_608.pdf
<http://www.fao.org/ag/agl/agll/terrastat/wsr.asp>
<http://apps.fao.org/>
<http://www.census.gov.ph/data/pressrelease/2006/>
<http://hdr.undp.org/reports/global/2003/indicator>
Philippine National Action Plan to Combat Desertification, Land Degradation, Drought
and Poverty, SOTER-ASSOD Studies

Philippine Climatic Zone Map



- Climatetype.shp
- Clim1: Two pronounce seasons
 - Clim2: No dry season
 - Clim3: Season not very pronounced
 - Clim4: Rainfall more or less evenl distributed

